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# World Cancer Congress IJC abstract supplement

## Preface

It is with great pleasure that we present this collection of abstracts, selected from the top 200 submissions to the 2024 World Cancer Congress, held in Geneva, Switzerland, from the 17<sup>th</sup> to the 19<sup>th</sup> of September. This compilation reflects the diversity, innovation, and pursuit of knowledge from researchers, programme managers, policy makers and advocates from around the world. It characterises the tremendous range of efforts that are being deployed to address the rising numbers of cancer cases and related deaths globally.

The abstracts in this supplement are organised around the six programme themes of the World Cancer Congress: Prevention, Screening and Early Detection; Cancer Research and Progress; Health Care Systems and Policies; Cancer Treatment and Palliative Care; Tobacco Control; and People Living with Cancer. Each theme represents a critical component of cancer control efforts and provides a window into cancer research and practice, as well as the policy and programme initiatives that are shaping the future of cancer prevention, detection, treatment, and care.

The abstracts include scientific studies that deepen our understanding of recent scientific and clinical advances in aetiology, prevention, diagnosis, and treatment of cancer, practice and policy reports that highlight successful interventions and systems improvements, and summaries of fundraising efforts that sustain critical programmes and services. The abstracts related to 'People living with Cancer' give voice to those with lived experience of cancer, presenting research and reports that focus on improving quality of life and providing holistic support.

We extend our deepest gratitude to all the contributors, reviewers, executive programme leads, theme co-chairs, and sponsors who have made this conference possible. It is through your unwavering commitment that we continue to make strides toward a world where cancer is no longer a formidable threat to human health and well-being and where all people, no matter who they are or where they live, have access to the services and programmes they need.

Abstract Committee  
David Hill, David Collingridge and Sonali Johnson

# Abstracts

## Theme 1: Prevention, screening & early detection

### 000032 | GAME ON: European Code Against Cancer dissemination through gamified empowerment

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**Background and context:** GAME ON project is a bilateral initiative between Portugal and Italy funded by the Erasmus+ program, an initiative of the European Commission. Following Europe's Beating Cancer Programme objectives, this project intends to raise knowledge and health literacy levels about European Code against Cancer (ECAC) in young people between 15 and 18 y.o. in formal contexts as schools.

**Aim:** The primary objective of the project is to engage schools in health education and cancer prevention initiatives, raising awareness and health communication skills in teachers and students of Portugal and Italy.

**Strategy/tactics:** GAME On project follows a Project Based Learning (PBL) approach, enhancing students' knowledge and creativity to create gamified activities and underlining the importance of peer education strategies as health education activities are performed within students' contexts. Having also in mind systemic and ecological theories, actions are developed not only with students but also with teachers and families.

**Programme/Policy:** Regarding the 2030 SDGs, the program starts with teachers training and materials development in order to raise soft skills in young individuals, which allow them to make healthier decisions in the future. Inspired by PBL approach, students were challenged to create gameful activities which will more likely engage students in the project, enabling them to better retain information and learn faster, while being more optimistic and motivated regarding the process. As many of the ECAC directives have impact not only in the individual but also on families, there were also specific materials to families, engaging them in the pursuit of a healthier lifestyle.

**Process:** The project comprises three phases: GAME MASTER (involving training sessions for teachers and creation/distribution of support materials), GAME ON (encompassing gamified classes, participated workshops, and peer-led activities), and GAME4ALL (comprising a best practices event, a national gathering, and an international event for best practices sharing between participants from Portugal and Italy).

**Outcomes:** The project yielded several outcomes, including the development of resources tailored for teachers (such as a manual, a PowerPoint quiz, posters, and social media posts), as well as for families (including a booklet), which were well-received. Moreover, the project engaged over 40 schools, involving more than 5000 students and 5000 families. Of particular note was the heightened engagement of students and the autonomous initiation of diverse health education initiatives within the participating schools which can be used for years to come.

**What was learned:** Overall, the Game ON project provided valuable insights into effective strategies for promoting health education and cancer prevention among youth. These lessons can inform future initiatives aimed at addressing similar health education challenges.

#### References

International Agency for Research on Cancer. (Year). European Code Against Cancer. Retrieved from <https://cancer-code-europe.iarc.fr/index.php/en/>, European Commission. (2020). Europe Beating Cancer Plan. Retrieved from [https://health.ec.europa.eu/system/files/2022-02/eu\\_cancer-plan\\_en\\_0.pdf](https://health.ec.europa.eu/system/files/2022-02/eu_cancer-plan_en_0.pdf)

Speaker: C. Fonseca

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

### 000062 | Improving the movement behaviours of children via their grandparents

Jongenelis M. \* (1); Budden T. (2); Christian H. (3); Jackson, B. (3); Coall D. (4); Nathan A. (3)

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**Background:** Physical activity lowers one's risk of developing several different cancers, including bladder, breast, and colon. Supporting physical activity is thus a key component of public health agendas. Given physical activity patterns are established early in life and persist into adulthood, promoting active lifestyles in childhood is critical to reducing cancer risk at all stages of the life course. While the importance of parents in promoting physical activity in children is well documented, research exploring the role of grandparents in their grandchildren's movement behaviours is limited. This is despite the increasing provision of care by grandparents and emerging evidence of their important role in shaping children's health behaviours.

**Aim:** To examine the physical activity-related beliefs and practices of grandparents and their association with grandchildren's engagement in various movement behaviours while in grandparental care. Perceptions of the specific barriers and enablers to promoting children's physical activity and reducing screen time were also explored.

**Methods:** Australian grandparents ( $N = 1190$ ) participated in an online survey. A further 79 participated in focus groups or individual interviews. The survey assessed grandparents' physical activity-related beliefs (e.g., perceived importance) and practices (e.g., support, social control) and their grandchildren's engagement in physical activity and screen-based activities while in grandparental care. Focus groups and interviews explored grandparents' perceptions of the barriers and enablers to promoting children's physical activity and reducing screen time.

**Results:** Grandparents rated the importance of their grandchildren's engagement in physical activity highly. Their support for grandchildren's physical activity was associated with their grandchildren's engagement in outdoor play ( $p = .007$ ) and both unstructured ( $p < .001$ ) and structured ( $p < .001$ ) physical activity. Negative social control was associated with engagement in screen time ( $p = .009$ ). Barriers to physical activity included the effort and financial cost associated with organising activities and grandparents' age and mobility issues. A key barrier to reducing screen time was parents sending children to care with electronic devices. Integrating activity into caregiving routines, involving grandchildren in decision making, and creating an environment that supports activity were considered key enablers of physical activity.

**Conclusion:** Resources that assist grandparents with identifying activities that are inexpensive, require minimal effort to organise, and account for grandparents' age and health status are likely to be well-received. Considering these caregivers as key stakeholders in promoting healthy behaviours in children is important to reduce cancer risk.

Speaker: M. Jongenelis

Theme: 1. Prevention, screening & early detection

Topic: Health promotion

#### 000063 | In-depth plasma metabolomics and machine learning identify biomarkers of gastric cancer

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**Background:** Gastric cancer (GC) is a highly prevalent and aggressive malignancy, necessitating timely diagnosis and treatment to reduce mortality. However, current detection methods for GC mainly rely on gastroscopy, limited by a relatively low uptake rate. Metabolic biomarkers are expected to decode the phenotype of GC and offer promise for high-performance blood tests for GC diagnosis.

**Aim:** This study aims to identify metabolic markers and develop a diagnostic model for GC using a multi-step strategy.

**Methods:** We first identified and verified differential plasma metabolites of GC through a two-stage case-control design (277 cases, 370 controls) using ultra-performance liquid chromatography-mass spectrometry (UPLC-MS). Diagnostic models were developed in the discovery and verification phases using machine learning modes. Tumour specificity of plasma markers was then confirmed by comparison with tumor-adjacent non-malignant paired tissue. Additionally, bidirectional two-sample Mendelian randomization (MR) analysis examined the causal effect of metabolic biomarkers on GC.

**Results:** Twenty-eight replicated plasma metabolites were identified. Desirable diagnostic performance with area-under-the-curves (AUCs) of 0.931–0.970 is achieved through machine learning, including neural network (NN), support vector machine (SVM), ridge regression (RR) and lasso regression (LR). Further, a metabolic panel comprising 11 metabolites showed superior diagnostic sensitivity (0.762–0.900) compared to traditional clinical protein biomarker tests (0.020–0.240), with AUCs of 0.973–0.980 in the discovery dataset and 0.954–0.975 in the independent external verification dataset. The biomarker panel also demonstrated strong performance in early GC diagnosis, with AUCs of 0.956 (95% confidence interval [CI]: 0.917–0.995) in the discovery dataset and 0.929 (0.902–0.956) in the validation dataset. Among 28 replicated plasma metabolites, eight metabolites replicated in targeted GC tissues, and two causal plasma metabolites were identified in MR analysis.

**Conclusion:** This study identifies promising metabolic biomarkers for GC diagnosis and develops a validated diagnostic model. The findings underscore the potential of metabolic analysis for accurate screening and early detection of GC, providing insights into the metabolic characterization of diseases including but not limited to GC.

Speaker: Z. Juan

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

#### 000082 | The awareness of the link between liver cancer and hepatitis as a motivation for action—Results of a globally representative survey

Smith A. \* (1); James, C. (1); Hicks, J. (1)

(1) World Hepatitis Alliance, Geneva, Switzerland

**Background:** Viral hepatitis is the most common cause of liver cancer. Chronic viral hepatitis can lead to hepatocellular carcinoma (HCC), which accounts for 80% of all liver cancer cases and is the third most common cause of cancer deaths worldwide. Despite this, few studies have been conducted on the awareness of viral hepatitis' connection to liver cancer in the general population.

**Aim:** To gain a greater understanding of public awareness on the link between liver cancer and hepatitis the World Hepatitis Alliance undertook a globally representative survey in nine countries, Argentina, Germany, Ghana, Hong Kong, India, Nigeria, South Korea, Vietnam, and the United States of America.

**Methods:** The World Hepatitis Alliance developed an online self-completion questionnaire, consisting of five multiple choice questions to assess awareness of the link between viral hepatitis and liver cancer and if that knowledge affects their likelihood to be tested or vaccinated for viral hepatitis. The survey was fielded in nine countries that were selected based on geographic representation, and their rates of liver cancer. The survey was distributed by the Survey Monkey audience platform to the general public between 30 June and 4 July 2023.

**Results:** 569 participants responded to the globally representative survey from Argentina, Germany, Ghana, Hong Kong, India, Nigeria, South Korea, Vietnam, and the United States of America. The survey found that nearly half (42%) of people are unaware that one of the leading causes of liver cancer is viral hepatitis. Nearly three quarters (74%) of the participants responded that knowing hepatitis causes liver cancer means that they are more likely to get tested and over four fifths (82%) responded that they are more likely to get vaccinated.

**Conclusion:** The survey indicated that a significant percentage of people are unaware of the link between hepatitis and liver cancer. It also indicated that if people are aware of the connection, they felt more likely to get tested for hepatitis and to be vaccinated against hepatitis B. This demonstrates why it is critical to raise awareness that viral hepatitis is one of the leading causes of liver cancer to accelerate progress towards the World Health Organization's goal to eliminate hepatitis by 2030. The global incidence of liver cancer can be reduced through increased vaccination for hepatitis B and treatment for hepatitis B and C. Health systems should integrate hepatitis services into their cancer prevention programmes in order to decrease cancer mortality and support the elimination of hepatitis as a public health threat.

Speaker: A. Smith

Theme: 1. Prevention, screening & early detection

Topic: Dispelling myths and misconceptions about cancer

#### 000107 | Closing the gap in hepatitis B and liver cancer awareness and screening in high-risk US communities

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(2) Johns Hopkins Bloomberg School of Public Health, Baltimore, United States of America

**Background:** Up to 2.4 million people in the US live with chronic hepatitis B (HBV) infection (Wong et al., 2021). Foreign-born communities are most impacted, particularly those from Asia, the Pacific Islands, the Caribbean, and sub-Saharan Africa (Conners et al., 2023). Individuals with unmanaged HBV have a 15%–40% lifetime risk of dying prematurely from cirrhosis or hepatocellular carcinoma (HCC) (McMahon, 2009). Low awareness, cultural norms, and misperceptions about HBV, HCC, and their connection contribute to low screening and care rates in affected communities. A more robust and comprehensive understanding of these barriers is needed to design effective

awareness campaigns to improve HBV screening and care and prevent HCC.

**Aim:** To learn about existing knowledge and misconceptions about HBV and its relationship to HCC in high-risk communities, identify barriers to screening, and use the findings to develop effective communication strategies that raise awareness and dispel myths.

**Methods:** Fifteen focus groups and two key informant interviews with community members, leaders, and public health experts were conducted to assess beliefs and attitudes about HBV and HCC and to identify preferred communication strategies.

**Results:** The link between HBV and HCC remains poorly understood, and myths persist about the transmission and outcomes of both conditions. Multiple barriers to HBV and HCC screening exist, including concerns about insurance and immigration status, language barriers, cultural and religious beliefs, lack of general health literacy, lack of resources to cope with a positive diagnosis, widespread distrust of Western medicine, and fear of stigma and isolation. Ideas for effective communication methods included employing community health educators, primary care providers, ethnic media outlets and personal testimonials for delivery of information, and tailoring communications by community, age, and gender. These findings were used to create a suite of culturally and linguistically appropriate educational materials for use in each of 12 communities.

**Conclusion:** Many challenges to increasing screening persist in groups most impacted by HBV and HCC, including a need for increased awareness about their connection. Community engagement is essential to overcoming these challenges, as is the need for specific, targeted messaging and dissemination to improve uptake of HBV screening and management.

#### References.

Wong RJ, Brosgart CL, Welch S, et al. An Updated Assessment of Chronic Hepatitis B Prevalence Among Foreign-Born Persons Living in the United States. *Hepatology*. 2021;74(2):607–626. DOI: [10.1002/hep.31782](https://doi.org/10.1002/hep.31782), McMahon, BJ. The natural history of chronic hepatitis B virus infection. *Hepatology*. 2009;49: S45-S55. DOI: <https://doi.org/10.1002/hep.22898>, Conners EE, Panagiotakopoulos L, Hofmeister MG, et al. Screening and testing for hepatitis B virus infection: CDC recommendations — United States, 2023. *MMWR Recomm Rep*. 2023;72(No. RR-1):1–25. DOI: <https://doi.org/10.15585/mmwr.rr7201a1>

Speaker: B. Zovich

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

#### 000117 | Financial sustainability for operational cancer screening efficiency

Kotschan N. \* (1)

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**Background and context:** PinkDrive NPC, a non-governmental organisation, receives no government funding and relies solely on donor

funding, sponsorships, fundraising campaigns, and purposeful donations. The organisation has a full year of planned calendar events in advance to ensure that financial sustainability is in place. This created a platform for cancer awareness, and openness to screening and broke all barriers where myths existed and the fear of screening. A drop in the pipeline has been a challenge for the organisation as more funding strategies had to be addressed and implemented. This myriad of strategies and plans focused mainly on financials, organisational growth, new visionary leadership approaches, and adherence to existing and new acts and policies.

**Aim:** PinkDrive NPC's primary purpose is to maintain financial sustainability by holding multiple local, international donors, and financial strategic business sponsors on board. This allows for gender cancer screening services in South Africa and Sub-Saharan Africa at a world-class standard with result-oriented cancer outcomes maintaining operational efficiency through financial sustainability.

**Strategy/tactics:** Fundraising for sustainability, donor funding strategies, stakeholder collaboration, effective program management, organisation goal mapping and profiling, cost-cutting approaches, effective campaign strategic management, business expansion strategies, environmental economic stability research, investor relationship management, memorabilia in-house/online shop; customer relationship management, grant management, demand and pipeline strategies, donor funnel strategies. An integrated marketing communication strategy with a sustainable budget plan.

**Programme/Policy:** Programmes: Strategic Partnership and health support, Corporate Innovation CSI/CSR, Pipeline stakeholder innovation, donor funnel, lifestyle, sport fundraising, dynamic funder c-level networking, demand management, VVIP/VIP celebrity events, high profile pledging.

Policies: Public Finance Management Act; Non profit Organisation's Act, Sponsorship policy

**Process:** Creating Alignment to Public Finance Management Act, Non-profit Organisations Act and relevant policies. Mapping potential global and local donors into categories of large to small. Creation of a "Fundraising year planners" with activities for consideration, this fills the pipeline working towards 24 months in advance, continuously creating financial demand. Design tailor-made Corporate Social Investment/Social Responsibility programs with innovative, creative and strategic out-of-the-box thinking.

**Outcomes:** Multiple strategies are effective creating financial sustainability. Tailor-made programs are appealing to donors creating top end benefits, financial rewards and favourable outcomes.

**What was learned:** Donor changes occur with market fluctuations. Corporate budgets are no guarantees. Need ongoing financial strategic reviews. Pipeline and demand management are crucial to building financial sustainability. Effective programs can be replicated for all local and global markets.

#### References

Government Communication and Information System (GCIS) <https://www.gcis.gov.za> > markcomm\_sponsguide PDF, South Africa. Department of Health. National health promotion policy and strategy, 2015–2019. Pretoria: Department of Health, 2015., Center for Public Health

Systems Science (2012). Sustainability and Assessment Tool. Washington University in St. Louis: George Warren Brown, School of Social Work. <http://cphss.wustl.edu/Projects/Pages/Sustainability-Framework-and-AssessmentTool.aspx>, The regulation of corporate governance in South Africa: The King III Report on Corporate Governance (2009), and The Companies Act 712008., <https://www.sahpra.org.za/acts-and-regulations/SAHPRA>, NATIONAL ASSEMBLY QUESTION FOR WRITTEN REPLY QUESTION NUMBER: 867 [NW1016E] DATE OF PUBLICATION: 20 MARCH 2015, Public Finance Management Act No.1 of 1999. NATIONAL TREASURY-This Act has been updated to Government Gazette 33,059 dated 1 April, 2010, Financial Management of Parliament Act, No. 10 of 2009.

Speaker: N. Kotschan

Theme: 1. Prevention, screening & early detection

Topic: Innovative fundraising models

#### 000175 | Refining a mammogram risk score calibrated to population breast cancer incidence rates to replace risk factors used for classification of future breast cancer risk

Colditz G. \* (1); Jiang, S. (1)

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**Background:** Over time, the range of breast cancer risk factors has increased. Risk prediction models have expanded from lifestyle risk factors to add polygenic risk scores and mammographic breast density. This combination is complex to implement in screening clinics and gives only modest performance in risk classification (5-year AUC ranges from 0.62 to 0.70).

**Aim:** To simplify risk prediction for breast cancer and increase access to risk estimates wherever women get screening mammograms.

**Methods:** We developed a risk prediction model using the whole breast mammogram image. From this image we can predict 5 and 10-year risk of breast cancer. We calibrate against population incidence rates and can generate a Mammogram Risk Score to guide precision prevention. We developed a model in the WashU cohort in St Louis and externally validated in the Emory cohort.

**Results:** A simplified version including lifestyle, MD, and breast PRS, developed in the Nurses' Health Study in external validation using Mayo Clinic data gave an AUC of 0.69 for 10-year risk (+ref). We developed statistical routines to use the whole breast image in addition to mammographic breast density. Adding machine learning approaches to the analysis of whole mammogram images (all 4 views), we obtain a 5-year risk AUC of 0.75 (95% CI, 0.71, 0.79). When we fit a model that includes the mammogram images over the preceding 3 years the AUC increases to 0.79 (95% CI, 0.75, 0.83). To understand the mediation of risk factors through the whole mammogram image we evaluated the percentage mediated by the image. For benign breast disease the percent mediate through mammographic breast density is 28% and through the whole mammogram image it is 65%.

**Conclusion:** The whole image conveys substantially more spatial information than other summaries. The mammogram image alone can be

calibrated to population breast cancer incidence rates and used efficiently to classify risk of breast cancer without the need for additional risk factor collection and processing. Systems are in place to return the breast image and risk output in real time during clinic visits. Further evaluation is needed to quantify reduction in cost and burden on clinics for collection of any information beyond age and the mammogram images. Calibrated risk estimates can more efficiently guide screening frequency and risk reduction strategies.

**Speaker:** G. Colditz

**Theme:** 1. Prevention, screening & early detection

**Topic:** Integration of new technologies into cancer control strategies

#### 000194 | Systematic and synergistic approach to development of prostate cancer screening programme key performance indicators

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**Background:** Standardized performance and outcome indicators are essential for quality assurance of the cancer screening programmes. These indicators will serve as a crucial tool for health care providers, policy makers, and other stakeholders to monitor their respective screening programme.

**Aim:** In the scope of the EU- funded PRostate cancer Awareness and Initiative for Screening in the EU (PRAISE-U) project, we aim to identify Key Performance Indicators (KPIs) for prostate cancer (PCa) screening and evaluate them in multicentric pilots.

**Methods:** The indicators were identified through a multi-stage systematic process. First, a systematic search of databases (Medline, Embase, Web of Science, Google Scholar) was conducted to identify PCa indicators in published literature. This process was supplemented by a grey literature search to identify existing performance indicators in screening trials and existing programmes. We reviewed indicators developed for breast, cervical and colorectal cancer screening through another EU funded project (CanScreen-ECIS) in 2023. The core indicators from CanScreen-ECIS were re-defined to align with PCa screening programme. This led to identification of 63 indicators covering different phases of the screening pathway. These indicators were reviewed through group exercises within the PRAISE-U consortium using pre-defined criteria such as: accuracy of definition and calculation, importance, and feasibility. Finally, 31 international screening

experts were invited to participate in a survey to rate the indicators using the same criteria. The survey results were discussed through a consensus meeting. Predefined arbitrary cut-off of 75% was used to decide on an agreement. Subsequently, the indicators were discussed with pilot implementation site experts for feasibility and relevance.

**Results:** This systematic multi-stage approach led to the identification of 21 indicators to be considered as KPIs for PCa screening effectiveness across the care continuum (screening, risk assessment, further assessment, diagnostics, treatment). In addition, experts also proposed to include a KPI on pathology at the consensus meeting. The pilot site experts proposed to combine two indicators on complications into a single indicator ‘Complications in screening procedure’. Finally, a total of 21 indicators (Figure 1) are proposed to be piloted for the PRAISE-U project in 4 selected EU member states (Lithuania, Ireland, Poland, and 2 sites in Spain).

**Conclusion:** The KPIs are designed to support different screening strategies for PCa. By documenting this synergistic, systematic, and transparent process, we hope to facilitate the standardized monitoring of PCa screening programme across Europe.

**Speaker:** D. Singh

**Theme:** 1. Prevention, screening & early detection

**Topic:** Screening and early detection: programme implementation

#### 000203 | Understanding factors associated with HPV vaccination in Kenya: Results of a large national phone survey

Moucheraud C. \* (1); Ochieng, E. (2); Ogutu V. (2); Chang L. C. (3); Golub G. (2); Crespi C. (3); Szilagyi P. (3)

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**Background:** Coverage of human papillomavirus (HPV) vaccination remains suboptimal in many countries but the determinants are not well-understood, particularly in low- and middle-income countries.

**Aim:** We undertook a random digit dialed phone survey across Kenya between July and October 2022, with caregivers (parents/guardians) of preadolescent girls, to identify intervention-amenable factors associated with respondents' daughter's HPV vaccination status.

**Methods:** Informed by the WHO Behavioral and Social Drivers of Vaccination framework, we collected information about respondents' knowledge about and hesitancy toward HPV vaccine, perceived risk of cervical cancer, social norms around HPV vaccination, trust in institutions, and access to HPV vaccination services.

**Results:** 1416 caregivers completed the survey (97.4% of those eligible), of whom 38.2% said that age-eligible girl(s) in their household had received any doses of the HPV vaccine. In multivariable models adjusted for sociodemographic characteristics, respondents with less HPV vaccine hesitancy and fewer concerns about safety were more likely to have vaccinated daughter(s), as were those with greater knowledge about HPV vaccine and knowing someone who had died

from cervical cancer. Having spoken with others about HPV vaccination, although reported by less than half of respondents, and believing that other parents have vaccinated their daughters were associated with having vaccinated daughter(s). Respondents with more trust in information about HPV vaccination from health systems had greater odds of having vaccinated daughter(s). One-fifth of respondents had experienced, or anticipated experiencing, challenges accessing HPV vaccination services, and these respondents had approximately half the odds of having a vaccinated daughter compared to their counterparts.

**Conclusion:** Promising areas for intervention include: targeted messaging about safety of the HPV vaccine, increasing caregivers' knowledge about the vaccine, and leveraging trusted messengers including health workers, faith leaders, and peer caregivers.

Speaker: C. Moucheraud

Theme: 1. Prevention, screening & early detection

Topic: Patient and family experience

#### 000212 | Acceptability, feasibility and efficacy of HPV self sampling for cervical cancer screening in India

Mishra G. A. \* (1); Pimple S. (1); Anand K. (2); Kulkarni V. (1); Biswas S. (1); Patil A. (1)

(1) Tata Memorial Hospital, Mumbai, India; (2) Tata Memorial Hospital, Homi Bhabha Block, Mumbai, India

**Background:** India records the largest number of deaths due to cervical cancer globally. Less than 5% of eligible women in India are screened for cervical cancers. Evidence from high-income countries supports HPV-self sampling (HPV-SS) for improving cervical cancer screening coverage. Success of HPV-Self sampling (HPV-SS) in resource constrained countries like India with a diverse population, will depend on developing impactful health education materials, generating awareness towards cervical cancer and HPV-SS and on precision in performing test by beneficiaries.

**Aim:** The current study was undertaken with objectives to determine knowledge, attitudes and practices (KAP), acceptability, barriers, agreement rates and prevalence of HPV in different population sub-groups using varied methods of communication.

**Methods:** The current study enrolled 1600 women in age group of 30–55 yrs, from urban slums (500), urban non-slums (500) and rural (600) settings in Maharashtra, India. Information regarding cervical cancer and steps for collecting self sample was explained by two modalities; health education by trained health personnel in health education arm and through printed pictorial depiction in the pamphlet arm. One sample for HPV testing was collected by health personnel for each participant in both arms.

**Results:** Overall prevalence of HPV was 7.8% with no significant differences across the settings. Overall acceptance of HPV-SS was 98.4%. Awareness regarding cervical cancer and HPV-SS was similar across settings and modalities of education. The overall concordance rates between HPV-SS and health personnel collected sample was

94.8% ( $k = 0.508$ , CI = 0.458–0.559,  $p < 0.001$ ) and was similar across settings. Compliance for clinical assessment of screen positive women and for treatment was 76.8% and 80% respectively.

**Conclusion:** The study demonstrated that HPV-SS is acceptable, feasible and implementable in India and will assist in improving cervical cancer screening coverage.

Speaker: G. A. Mishra

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: programme implementation

#### 000217 | Preventing a sick future: The case for comprehensive marketing policies to reduce cancer and other non-communicable diseases (NCDs)

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**Background and context:** Harmful commercial marketing practices threaten human rights and are a major factor behind the global rise of cancers and other NCDs—impacting children and young people's physical and mental health and well-being immediately and over their lives. Across industries and platforms, marketers use sophisticated tactics and strategies to appeal to children specifically, enticing them to purchase, consume or use unhealthy products for life. National policymakers face significant barriers to developing, implementing and enforcing marketing regulations to combat these tactics, despite the known inadequacy of industry self-regulation. Therefore, there is a need for comprehensive marketing policies across cancer and other NCD risk factors (including tobacco, alcohol, and unhealthy food).

**Aim:** The policy report's aim is to bolster calls to regulate harmful commercial marketing to protect children and young people globally by collating knowledge and experience across different NCD risk factors, health-harming industries, and geographies. By making the case for comprehensive marketing policies across a variety of unhealthy products and strategies, the report strives to provide a series of policy recommendations that can protect children and young people from the harmful marketing they are exposed to, both in and outside of child- and youth-specific spaces.

**Strategy/tactics:** The policy report looks across the different strategies of marketing and policy design elements to provide a full picture of what is needed to strengthen public policy; an important consideration ahead of the 4th UN High Level Meeting on NCDs.

**Programme/Policy:** The Report, Selling a Sick Future, includes a call to action and 10 policy recommendations for policymakers and other stakeholders. It calls on national policymakers to urgently enact comprehensive, robust regulations to protect children and young people from being targeted by and exposed to harmful commercial marketing.

We have also developed an explainer for younger audiences summarizing the policy report and a short social media video for the public.

**Process:** The policy report was informed by evidence and data from existing literature and publications, as well as input and guidance from an expert Advisory Group and two focus group discussions with a

total of 15 children and young people aged 13–30 years, including people who self-identify as living with NCDs.

**Outcomes:** The Report was launched as part of the official programme of the PMNCH-led Global Forum for Adolescents in October 2023 and has been well received by the NCD community.

**What was learned:** Co-development and participatory research are useful tools to engage children and young people in the development and implementation of policies and programs.

To address cross-cutting NCD risk factor issues, a comprehensive approach looking at the gains and challenges with the different risk factors is useful to provide a framework for action and policy coherence.

Speaker: T. Abdulkareem

Theme: 1. Prevention, screening & early detection

Topic: Policy development in cancer prevention

#### 000222 | Leveraging regional cooperation in implementing nutrition best buys for improved cancer control

Rosales-Sto. Domingo M. G. A. \* (1)

(1) McCabe Centre for Law and Cancer, East Melbourne, Australia

**Background and context:** Overweight & obesity are linked to increasing the risk of contracting at least 13 types of cancers. Worldwide obesity has nearly tripled since 1975 & the related burden of NCDs including some cancers continues in an upward trend. The WHO best buys on unhealthy diet are part of the package of recommendations to address NCDs, including cancer. The slow uptake on implementing WHO nutrition best buys remains insufficient to improve cancer outcomes. Regional cooperation in policy & standards setting can accelerate action at national level & ensure consistent implementation of the best buys to tackle the shared burden of disease.

**Aim:** This presentation will provide practical insights for cancer advocates & policy-makers on why and how to use regional mechanisms to implement WHO nutrition best buys to improve cancer control through a South-East Asian case study in policy and standards-setting.

**Strategy/tactics:** Association of South-East Asian Nations (ASEAN) member states acknowledged that regional cooperation was necessary to regulate multi-national food manufacturers & developed minimum standards to ensure implementation of uniform regulations across the region. ASEAN governments leveraged the development of regional standards to accelerate adoption of regulations at national level & support implementation of WHO NCD nutrition best buys as a way to control cancer.

**Programme/Policy:** In 2017, ASEAN member states signed a Declaration to end all malnutrition acknowledging the double burden of undernutrition & overnutrition. This high-level ASEAN leaders' commitment paved the way for immediate action on WHO nutrition best buys to regulate harmful food & beverage marketing to children. In 2023, ASEAN published the Minimum Standards & Guidelines on Actions to Protect Children from the Harmful Impact of Marketing of

Food & Non-alcoholic Beverages in the ASEAN region as guidance for member.

**Process:** ASEAN convened the regions' key health & nutrition experts to develop minimum standards & template legislation, cultivating ownership & building political will at national level at the same time.

**Outcomes:** The ASEAN Minimum Standards ushered a wave of member states adopting marketing regulations. The Thailand Minister of Health announced adoption of the minimum standards in early 2023. The Philippine Congress is currently deliberating on a bill adopting the minimum standards while sub-national legislation has been enacted in a local municipality, with more sub-national legislations to be enacted. All ASEAN health ministers declared support for the adoption of the minimum standards at its launch event in 2024.

**What was learned:** Regional cooperation offers a unique opportunity to tackle critical challenges & accelerate national action to improve cancer & other NCD outcomes. Adopting an inclusive regional approach to policy and standards-setting can build ownership & political will at national level.

Speaker: M. G. A. Rosales-Sto. Domingo

Theme: 1. Prevention, screening & early detection

Topic: Mobilising international networks.

#### 000252 | Breast cancer in Sarawak, Borneo—A decade of screening programmes

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(5) London, United Kingdom

**Background and context:** Sarawak, the largest state in Malaysia with a population of 2.9 million and 45% of them living more than 100 km away from urban cities. These communities are at risk of delayed diagnosis and advanced diseases due to limited access to healthcare services. We have only one tertiary government hospital equipped with both radiotherapy and chemotherapy facilities and 4 government hospitals with mammogram facilities.

**Aim:** Sarawak Breast Cancer Support Group (SBCSG) is a local NGO registered with the Registrar of Societies in August 2000. Since 2012, SBCSG spearheaded the breast cancer early detection and screening outreach programme all across Sarawak, with a special focus on those living in rural areas. This paper describes results from our 10-year programme.

**Strategy/tactics:** These programmes were organized or co-organized by SBCSG from 2013 to 2023. At each site, local organizers, including community leaders and the ministry of health (MOH) were involved in the outreach planning. Women of age 18 years and above were invited.

**Programme/Policy:** The Malaysian Clinical Practice Guidelines 2019 (CPG) for breast cancer management recommended clinical breast examination (CBE) for women age 35 and older and the use of mammogram depending on individual risk factors. However, the uptake of mammograms among Malaysian women remains low, ranging from 7% to 30% of the target population and there is no recorded data from Sarawak.

**Process:** A 1–2 day breast camp was set up at each site, staffed by volunteer nurses and doctors from SBCSG and MOH personnel. Here, participants were registered and explained about the camp procedures. Demographic, risk factors, family history and clinical breast examination findings were obtained. Women with abnormal findings were referred to the nearest clinic or hospital for further management.

**Outcomes:** We have screened 2050 women with mean(SD) age of 44.7 (15.4) years old, with 7.1% of them exhibited abnormal findings, predominantly identified as lumps (96.6%). Urban screening sites reported abnormal findings in 9% (85/949) of women compared to 5% (61/1101) in rural sites. Bidayuh ethnic group was found with the highest abnormal findings (28.6%), followed by Chinese (27.2%) and Malay (19.0%). Women with fewer than 3 children were more likely to exhibit abnormal findings [8.3% (85/1021) vs. 5.9% (61/1029);  $p = 0.003$ ]. Using multivariate analysis, site was found to be the most important factor. Subjects who were screened at urban sites were 1.6 times more likely to have abnormal findings. Additionally, those between age 30 and 59 years old were 2.3 times more likely to have abnormal findings compared to the older group.

**What was learned:** The primary independent variable is screening site, which points to the potential impact of lifestyle in abnormal findings. Women in rural areas tend to have more children, a trend that can be attributed to socioeconomic and cultural norms. The higher incidence of abnormal findings in urban areas highlight the need for increased awareness in urban areas.

#### References.

A. Mahmud and S. M. Aljunid, “Availability and accessibility of subsidized mammogram screening program in peninsular Malaysia: A preliminary study using travel impedance approach,” PLoS One, vol. 13, no. 2, p. e0191764, Feb. 2018, doi: [10.1371/journal.pone.0191764](https://doi.org/10.1371/journal.pone.0191764).

B. C. Devi, “Why do Women with Breast Cancer in Sarawak, Malaysia Present Late?,” Annals of Oncology, vol. 23, p. ix136, Sep. 2012, doi: [10.1016/S0923-7534\(20\)32948-3](https://doi.org/10.1016/S0923-7534(20)32948-3), Galen Centre for Health and Social Policy, “White Paper—Cancer Care Challenges, Gaps and Opportunities in Malaysia,” Kuala Lumpur, Sep. 2021. Accessed: Dec. 28, 2022. [Online]. Available: [https://www.phama.org.my/view\\_file.cfm?fileid=145](https://www.phama.org.my/view_file.cfm?fileid=145), Department of Statistics Malaysia. Statistics on Causes of Death 2019 [Internet]. 2020 [cited Oct 2020] Available from: <https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam>, Ministry of Health Malaysia, “Malaysia National Cancer Registry Report 2012–2016. Report No: MOH/P/IKN/05.19(AR),” Putrajaya, 2019.

Speaker: M. S. H. Lim

Theme: 1. Prevention, screening & early detection

Topic: Role of NGOs and civil societies in cancer control

#### 000261 | Alcohol and Cancer: policy recommendations to reduce cancer risk

Chow K. \* (1); Allen K. (1); Oldridge-Turner, K. (1); Mitrou G. (1)  
(1) World Cancer Research Fund International, London, United Kingdom

**Background and context:** The toxicity and carcinogenic mechanisms of alcohol are well established. Alcohol has long been classed as a Group 1 carcinogen, and WCRF International has determined that there is strong evidence that consuming alcohol increases the risk of seven types of cancer, including common cancers like breast and colorectal. However, public awareness of the links between alcohol and cancer remain very low, and many countries lack national alcohol strategies or policies that support population-level reduction of alcohol consumption.

**Aim:** WCRF International Alcohol and Cancer Risk policy recommendations are designed to provide policymakers and governments with best-practice alcohol-control policies. When implemented, these evidence-based policies can help reduce the risk of cancer as well as contribute to a reduction in other health, social and economic harms caused by alcohol. The policy recommendations also aim to increase public awareness that there is no safe level of alcohol consumption for cancer risk, and highlight the necessity of reducing conflicts of interest in policymaking, particularly with alcohol industry.

**Strategy/tactics:** A review of evidence, global recommendations, and existing and proposed policies was conducted to determine a set of best-practice policies. WCRF's alcohol policy recommendations will be disseminated through its network partners; the WHO and its regional offices; and promoted among Member States and civil society partners.

**Programme/Policy:** WCRF International's alcohol policy recommendations were developed to consider a multisectoral approach and include four policy areas: (1) implementing fiscal measures to make alcohol less affordable and accessible; (2) restricting the physical availability of alcohol; (3) implementing mandatory health warning labels; and (4) restrictions on promotions, advertisements and marketing of alcohol products.

**Process:** The four identified policy priority recommendations can be used by governments as a one-stop, best-practice guidance to formulate a national alcohol strategy. Alcohol advocates can also use WCRF International's policy recommendations to push governments to take more action and accountability towards implementing alcohol-control measures.

**Outcomes:** WCRF International's alcohol policy recommendations provide a concise recommendation of four policy priority areas for government implementation and to improve alcohol control. It also offers guidance on important considerations around implementing these measures, such as language, conflicts of interest and low and no alcohol products.

**What was learned:** WCRF International's alcohol policy recommendations offer countries a menu of policy options to help support reduced alcohol consumption and increase public awareness on the links between alcohol and health harms—including increased cancer risk.

This brief amplifies this message and acts as an important advocacy tool for policy action and combatting industry interference. Overall, WCRF International's policy guidance will support countries in implementing measures to reduce alcohol-related harms and cancer incidence.

**Speaker:** K. Chow

**Theme:** 1. Prevention, screening & early detection

**Topic:** Alcohol control efforts

#### 000262 | NUTRI S-CAN: A valid tool to evaluate adherence to the WCRF/AICR cancer prevention recommendations

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**Background:** The World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR) published 10 recommendations for cancer prevention regarding diet and lifestyle, based on a comprehensive evaluation of the evidence, which have been operationalized into the WCRF/AICR score for its use in epidemiological studies. However, there is a lack of rapid dietary screeners able to assess adherence to these recommendations in clinical settings and/or public health strategies for cancer prevention.

**Aim:** Develop and validate a rapid diet screener (NUTRI S-CAN) to assess and potentially improve diet and lifestyle habits for cancer prevention.

**Methods:** The NUTRI S-CAN was developed by an international expert panel and later piloted prior to subsequent validation. The validation consisted in evaluating content, face and construct validity and reproducibility in two study populations: PREDIMED-Plus participants ( $n = 148$ ; 48% female, mean age  $72 \pm 5$ y); and university students ( $n = 112$ ; 70.5% women, mean age  $24 \pm 6$ y). A sample of breast cancer (BC) patients ( $n = 80$ ; mean age  $55 \pm 12$ y) was also included to appraise how NUTRI S-CAN results behave in cancer patients population. NUTRI S-CAN was administered together with other validated measures of diet (validated food frequency questionnaires), physical activity (accelerometers and validated questionnaires) and body weight (anthropometry). Reproducibility was assessed in university students by re-administering the NUTRI S-CAN after 10 days (test-retest method).

**Results:** The NUTRI S-CAN appraises adherence to 7 out of 10 WCRF/AICR recommendations (regarding body weight, physical activity, fibre intake, processed foods, red and processed meat, sugary drinks and alcohol consumption) and 14 questions (score range 0–7). It can either be self-administered or administered by a health professional, and takes approximately 6 minutes to complete. The mean (SD) NUTRI S-CAN score in PREDIMED-Plus participants was 3.3 (0.8), in university students 4.3 (1.1), and in BC patients 4.4 (1.0). Furthermore, the overall NUTRI S-CAN scores showed a good correlation and agreement with validated methods, both in PREDIMED-Plus participants ( $r = 0.64$ ,  $p = 0.007$ ; ICC = 0.63,  $p < 0.001$ ) and in university

students ( $r = 0.66$ ,  $p < 0.01$ ; ICC = 0.61,  $p < 0.001$ ) (construct validity not evaluated in BC patients). Moreover, the NUTRI S-CAN showed high reproducibility ( $r = 0.79$ ;  $p < 0.005$ ).

**Conclusion:** NUTRI S-CAN is a valid tool for assessing adherence to WCRF/AICR cancer prevention recommendations at an individual level, which could be useful in clinical settings and in cancer prevention strategies.

**Speaker:** M. Nafría

**Theme:** 1. Prevention, screening & early detection

**Topic:** Cancer and lifestyle

#### 000264 | Development and pilot testing of INTERVENER, a web-based tool to match barriers to cancer screening to interventions to overcome them

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(1) IARC—International Agency for Research on Cancer, Lyon, France

**Background:** Barriers at the cancer screening pathway have been identified, as well as interventions to approach them. However, there is a lack of a tool matching them.

**Aim:** To develop a web-based tool to identify the main barriers to the cancer screening pathway, and propose matched evidence-based interventions (EBI) to overcome each barrier.

**Methods:** A questionnaire on barriers at six steps of the cancer screening pathway was answered by collaborators. Each question included several options of barriers to be ranked by relevance. The 81 barriers listed in the questionnaire were organized in a framework based on the Tanahashi conceptual model. Barriers were categorized in these dimensions: service availability, accessibility, affordability, acceptability, user-provider interaction, governance, protocols and guidelines, information system, and quality assurance.

Systematic searches were conducted on each intervention for breast, cervical and colorectal cancer. Interventions were matched with the barriers they helped to overcome. These interventions were classified in one of these groups for each barrier and cancer site: EBI as a single strategy, EBI within a multicomponent strategy, limited evidence interventions, and macro level approaches.

Barriers and interventions were matched on a web-based tool named INTERVENER, that allows the selection of up to 3 barriers for each step. It displays the visual representation of the selected barriers, the size of each dimension showing the importance of that dimension as a barrier.

Experts on different aspects of screening and cancer sites provided feedback on the tool. Collaborators from 35 countries worldwide are currently testing it and replying to a short survey on its use.

**Results:** The tool matched barriers with over 60 interventions (see Figures 1 and 2). Collaborators reported the webpage to be organized logically ( $N = 11$ , 100%), clearly formatted ( $N = 9$ , 82%) and with easy to find and follow tool instructions ( $N = 10$ , 91%). The tool was found useful for conducting a situational analysis of the barriers to cancer

screening ( $N = 10$ , 91%), facilitating discussion with policymakers and other stakeholders on prioritization of interventions ( $N = 10$ , 91%), and planning the implementation of an intervention to overcome a selected barrier ( $N = 11$ , 100%).

**Conclusion:** This tool supports countries in conducting a systematic assessment of barriers, including their prioritization, and identifying EBI to overcome them, ultimately facilitating reduction of health inequalities. This will enable governments, policymakers, managers and healthcare providers to make better informed decisions to improve their cancer screening programmes.

The next steps will be the update of the tool, making it publicly available in English, Spanish, French and Arabic.

Speaker: I. Mosquera

Theme: 1. Prevention, screening & early detection

Topic: Interventions for disadvantaged populations

#### 000292 | Learnings from a study tour on preventing hepatitis B related hepatocellular carcinoma

Feng C. \* (1)

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**Background and context:** Australia, United Kingdom (UK) and United States (US) share similar epidemiology of hepatocellular carcinoma (HCC). It is on the rise and has a disproportionate effect on communities born in hepatitis-B endemic countries.

**Aim:** Increase knowledge about programs and enabling factors that have led to an increase in hepatitis testing and liver cancer screening in the UK and US, and scalable programs we can adapt and adopt for the Australian context.

**Strategy/tactics:** As part of a Nigel Gray scholarship by Cancer Council Victoria, this project conducted a study tour (virtual and in person) with key experts in the US and UK to learn about programs that have worked in increasing participation in testing, monitoring and treatment of hepatitis B (to prevent progression to HCC) and HCC surveillance, and opportunities for these programs to be adapted for an Australian context.

**Programme/Policy:** Study tour (virtual and in person) with key experts in the US and UK.

**Process:** 1. Defined scope of the study tour and discussion guide.  
2. Conducted desktop research and domestic stakeholder interviews to determine what insights are most useful for Australia.  
3. Contact experts for interview through snowball sampling.  
4. Conduct interviews.  
5. Synthesize insights and report back to key stakeholders.

**Outcomes:** Synthesized insights from a study tour (to be completed by April 2024) with a range of leading experts in the areas of hepatitis B testing and care, and HCC surveillance.

**What was learned:** 1. Framing hepatitis elimination as a part of liver cancer control is useful in raising its profile with a wider medical and public health audience and reducing stigma in community. It also impacts on the way public health programs are developed and communicated (e.g. liver health check vs. hepatitis testing), and the way

alliances are formed around chronic and viral causes of liver cancer. This has flow-on impacts on the way funding for services is structured.

2. A “top down bottom up wrap around” system is required for sustainable engagement in hepatitis B linkage to care and HCC surveillance. Clinical systems (e.g. flags in electronic health records) need to be combined with community engagement (e.g. patient stories; outreach). Individually these initiatives have limited long term impact, but need to be implemented together for sustained impact.

3. Patient navigators are crucial for adherence to linkage to care, with increasing organisations exploring more cost-effective ways of providing culturally appropriate navigation for patients.

4. Increasing discussion on risk-based surveillance (or “precision screening”) and tailoring intensity of services based on hepatitis genotype and liver cancer risk profiles.

#### References.

Wong MC, Jiang JY, Goggins WB, Liang M, Fang Y, Fung FD, Leung C, Wang HH, Wong GL, Wong VW, Chan HL. International incidence and mortality trends of liver cancer: a global profile. *Sci Rep.* 2017 Mar 31;7:45846. doi: [10.1038/srep45846](https://doi.org/10.1038/srep45846). PMID: 28361988; PMCID: PMC5374459.

Speaker: C. Feng

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: recruitment and communication

#### 000293 | Cervical Cancer Prevention in India: Exploring a collaborative district model for increasing cervical cancer screening through community outreach and capacity strengthening within Primary Health Centres (PHCs)

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Ramakrishnan, M. (1); Sharma, T. (1)

(1) Cancer Awareness Prevention & Early Detection Trust (CAPED), Gurugram, India; (2) American Cancer Society, Raleigh, United States of America; (3) American Cancer Society, Atlanta, United States of America; (4) American Cancer Society, New Delhi, India

**Background and context:** India accounts for nearly a third of global cervical cancer deaths. These cancers can be prevented or detected early through screening. Despite the existence of a national guideline and program, cervical cancer screening availability at Primary Health Centres (PHCs) in India is low, and programs targets symptomatic women only. In communities, there is a lack of awareness, inaccessibility, and stigma. Cancer Awareness, Prevention and Early Detection (CAPED) Trust, in partnership with the American Cancer Society (ACS), collaborated with the Gurugram Health Department (Haryana State), from February to December 2022, to increase cervical cancer screening. This session will discuss the outcomes of the Civil Society Organisation (CSO)-District collaboration and the implementation guide's testing.

**Aim:** India's high burden of cervical cancer mortality contrasts with limited access to screening. This session discusses a CSO's collaborative approach to support and strengthen India's public health infrastructure to increase availability and uptake of cervical cancer screening.

**Strategy/tactics:** The cancer organization's project involved six core areas of work (1) advocacy and coordination with the district-level leadership for the inclusion of asymptomatic women in government-led screening camps, (2) facilitating certification of PHC nurses through a national certification programme for cervical screening to be offered as a regular healthcare service at the facility, (3) training community health workers (CHW) on cervical cancer and its prevention, (4) supporting CHWs for door-to-door mobilization in targeted villages, (5) logistic support to PHCs at screening camps, and (6) navigation services for women with positive screens.

**Programme/Policy:** Exploring a collaborative district model for increasing cervical cancer screening through community outreach and capacity strengthening within Primary Health Centres (PHCs).

**Process:** (1) Advocacy with govt. stakeholders, (2) Staff nurse training and certification, (3) Training of CHWs, (4) Supporting CHW for mobilisation, (5) Logistics support at screening camps, and (6) Patient navigation.

**Outcomes:** Under the project, 213 CHWs and 61 PHC staff nurses covering 73 villages were trained/certified, who mobilised 5653 women to get cervical cancer screening. Women who tested positive were navigated for further testing and/or treatment. Successful outcomes of the collaboration have laid the groundwork for an Implementation Guide for Community Organizations to Strengthen Policy and Practice for Cervical Cancer Prevention. The guide will be used to replicate the outcomes in two new geographical areas in 2024 through partnerships with two local cancer organizations.

**What was learned:** As trusted voices in cancer prevention, cancer organisations may take a collaborative approach to support and strengthen the efforts of local governments to address capacity gaps in PHCs and mobilize communities to increase uptake of life saving prevention services, starting with cervical screening.

Speaker: M. Gupta

Theme: 1. Prevention, screening & early detection

Topic: Cross-sectorial collaboration in cancer prevention

#### 000301 | The Latin America and the Caribbean Code Against Cancer, 1st Edition: a collaborative effort for cancer prevention

Espina C. \* (1); Feliu Josa A. (1); Maza, M. (2); Schüz, J. (1)

(1) IARC—International Agency for Research on Cancer, Lyon, France;

(2) PAHO/WHO Pan-American Health Organization, Washington,

United States of America

**Background and context:** Preventable risk factors are responsible of at least 40% cases and almost 45% cancer deaths worldwide. Cancer is already the leading cause of death in almost half of the Latin American and the Caribbean (LAC) countries. The recently launched LAC Code Against Cancer (LAC Code) 1st edition has been developed to assess the most recent evidence on primary and secondary prevention of cancer and to provide priority areas of action for reducing the cancer burden in LAC.

**Aim:** The LAC Code aims to enhance awareness on cancer prevention and motivation towards action at individual, policymaker, and health professional level.

**Strategy/tactics:** Under the World Code Against Cancer Framework, from the International Agency for Research on Cancer, and with support of the Pan-American Health Organization, more than 60 independent experts in epidemiology, cancer prevention and public policies, and stakeholders representing the civil society from LAC were convened to work collaboratively with the common mission of promoting cancer prevention in the region.

**Programme/Policy:** The LAC Code provides a basis for adopting healthier lifestyles, creating cleaner environments, and establishing interventions to prevent cancer in the growing and diverse LAC populations. It consists of several levels of information: 17 recommendations on primary and secondary prevention of cancer for the general public, 17 recommendations for policymakers for the LAC Code to be implemented effectively, and a comprehensive and free competency-based online microlearning programme for primary health care professionals.

**Process:** The process has entailed collecting, analysing, and evaluating the most recent scientific evidence, with the objective of supporting cancer prevention recommendations, and anticipating challenges in implementing the recommended policies and innovations. An adaptation of the PRECEDE- PROCEED model was used to establish a planning, monitoring and evaluation framework.

**Outcomes:** The LAC Code provides a comprehensive cancer prevention package, adapted to the socio-economic and cultural context of the region, to educate the public on healthy behaviours, to encourage adherence to preventive interventions, and to guide governments in implementing cancer control strategies.

**What was learned:** Through this collaborative effort, we have learnt about the challenges that LAC's diversity in geography, developmental progress, literacy, ethnicity and access to health care resources pose to implement cost-effective interventions to reduce cancer incidence and mortality, and how the LAC Code had to be adapted to it and to carefully target the different levels of information to the general public, policymakers and health professionals of LAC.

#### References

Espina C, et al. Latin America and the Caribbean Code Against Cancer 1st Edition: 17 cancer prevention recommendations to the public and to policy-makers (World Code Against Cancer Framework). *Cancer Epidemiol.* 2023 Oct;86 Suppl 1:102402.

Speaker: C. Espina

Theme: 1. Prevention, screening & early detection

Topic: Prevention in partnership

#### 000302 | A universal broad-based scalable and frequent approach to improving breast health awareness: The MyCare study of attitudes to breast health awareness messages via the menstrual hygiene dissemination

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(2) University of Health and Allied Sciences, Hohoe, Hohoe, Ghana;

(3) Kilimanjaro Clinical Research Institute, Moshi, Tanzania, United Republic of; (4) Aga Khan University, Nairobi, Kenya; (5) London School of Hygiene & Tropical Medicine, London, United Kingdom; (6) University of Health and Allied Sciences, Ho/Hohoe, Ghana

**Background:** As endorsed by the WHO Global Breast Cancer Initiative, an essential component of early detection strategies for breast cancer is building breast health awareness (BHA) in women in the community setting. BHA includes a woman's knowledge of breast cancer risk factors, signs and symptoms, and her confidence to notice them and seek medical attention when a change is detected. Providing BHA information on or in menstrual hygiene products (MHP) potentially offers an underutilized universal frequent and affordable route to inform women.

**Aim:** To assess women's BHA levels, and attitudes to and preferences for BHA messages delivered via MHPs in Ghana and Tanzania.

**Methods:** In each country, we conducted cross-sectional studies of 200 women aged 18–50 years, equally split between urban/rural settings and stratified by age (18–29, 30–39, and 40–49). Women were approached randomly in their homes in 2024 and completed face-to-face interviews on sociodemographics, MHP use, BHA using the Cancer Research UK BCAM tool and BHA via MHP preferences. The rural and urban locations were, respectively, Hohoe and Ho in the Volta region, Ghana, and Machame/Rombo and Moshi town in the Kilimanjaro region of Tanzania.

**Results:** The Ghanaian results are summarized here, and Tanzania will be added in July 2024. In Ghana, 216 women were interviewed (mean age 34 [ $\pm 9$ ] years). The preferred language for health messages was Ewe (50%) followed by English (41%). 84% of women could read Ewe, 79% could read English. BHA levels were low with respect to risk factors and false myths of causation. Disposable sanitary pads were used by 89% of urban and 81% of rural women, with two brands dominating 80% of the MHPs. Overall, 90% of women wanted BHA with their MHPs, with preferences for three BHA message placement locations emerging but differing in rank between urban and rural women: (a) printed messages on the outside of MHP packages, (b) BHA leaflets within the MHP package and (c) on an individual sanitary pad covering.

**Conclusion:** We observed a positive attitude to BHA information provided via MHPs. Follow-on studies are required to design the BHA messages, test their understandability and their impact on BHA. This dissemination route already exists and reaches over 350 million women worldwide each day, thus adding BHA to this perfect target audience has universal potential and impact.

**Speaker:** V. McCormack

**Theme:** 1. Prevention, screening & early detection

**Topic:** Screening and early detection: recruitment and communication

#### 000326 | Gavi's approach to revitalizing HPV vaccine access for cervical cancer elimination in LMICs

Holroyd, T. (1); Miali N. \* (1); Snidal, S. (1); Moody, C. (1); Adeoye, M. (1); Kobayashi, E. (1)

(1) Gavi, the Vaccine Alliance, Le Grand-Saconnex, Switzerland

**Background and context:** Cervical cancer, the fourth most common cancer amongst women [1], is highly preventable through immunisation against human papillomavirus (HPV). However, global coverage of the HPV vaccine has been consistently low [2] due to HPV vaccine supply shortages and program disruption during the COVID-19 pandemic. In 2022–2023 these challenges began to ease, and the World Health Organisation (WHO) endorsed HPV vaccine delivery using a permissive single-dose schedule for the first time, enabling Gavi, the Vaccine Alliance, to launch an ambitious program to revitalise HPV vaccination in low- and middle-income countries.

**Aim:** Support LMICs to vaccinate at least 86 million girls with the HPV vaccine and avert over 1.4 million future cervical cancer deaths by the end of 2025 [3].

**Strategy/tactics:** The Alliance brings together implementing countries, donors, technical partners, and manufacturers to operationalise the HPV programme revitalization, significantly expanding upon existing Gavi HPV vaccine introduction support, through three key shifts [3]. First, Gavi supports countries to target a multi-age cohort (MAC) of girls in one-off campaigns and switch to a single dose HPV schedule alongside introducing routine HPV programs through cash and vaccine purchasing grants. Second, investments in health systems strengthening and implementation research to build cost-effective, equitable, and sustainable vaccine delivery platforms to reach adolescents. Third, funding partners to provide assistance at the country, regional and global levels to accelerate the HPV vaccination agenda.

**Programme/Policy:** NA.

**Process:** NA.

**Outcomes:** By the end of 2023, Gavi support had enabled 38 countries to introduce nationwide routine HPV vaccine programs, with 16 countries additionally implementing a MAC vaccination campaign to improve coverage and accelerate herd immunity effects. Eleven of these programs implemented a single-dose HPV vaccine schedule to reduce operational costs and improve coverage. The most recent WHO coverage estimates indicated that over 16.3 million girls had been reached with Gavi support by the end of 2022, with 2023 figures to be released in July 2024. Current forecasts and progress to date suggest that the ambitious target of reaching 86 million girls by 2025 remains on track, driven by new vaccine introductions, implementation of MAC campaigns, and improving coverage rates.

**What was learned:** High political commitment to the HPV vaccine led to rapid uptake of the expanded resources available through the revitalization. Strong investment in social mobilization and cross-sectoral engagement with education, community and religious partners has been essential to achieve high HPV vaccine coverage. Continuing the momentum of the revitalization program to create sustainable and equitable HPV vaccination programs in LMICs will be vital to achieve cervical cancer elimination by 2030.

#### References

- Sung H, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021;71(3):209–249. <https://doi.org/10.3322/CAAC.21660>

2.Bruni L, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV immunization coverage 2010–2019. Preventive medicine, 2021;144:106399. <https://doi.org/10.1016/j.ypmed.2020.106399>

3.Gavi. Report to the Board: Human papillomavirus (HPV) vaccine programme relaunch. Published Dec. 2022. Accessed Feb. 15, 2024. <https://www.gavi.org/sites/default/files/board/minutes/2022/7-8-dec/07%20-%20HPV%20Vaccine%20Programme%20relaunch.pdf>

Speaker: N. Miall

Theme: 1. Prevention, screening & early detection

Topic: Equity and cancer prevention

920 cases (85%) were diagnosed at early stages (stage 0 or stage 1), highlighting the program's effectiveness in facilitating early detection.

**What was learned:** Key learnings emphasize evidence-based decision-making and interdisciplinary collaboration. Emphasis on tailored screening criteria, comprehensive infrastructure, and public education campaigns proved crucial. Future focus includes monitoring and developing screening quality indicators, providing valuable insights for countries tackling lung cancer mortality.

Speaker: L.-J. Lin

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: programme implementation

#### 000351 | Expanding Horizons: National Lung Cancer Screening with LDCT for heavy smokers and those with a family history of lung cancer in Taiwan

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**Background and context:** Lung cancer is a significant public health concern globally, including in Taiwan, where it ranks as a leading cause of cancer mortality. However, Taiwan's Cancer Registry reveals that only one-third (34.3%) of lung cancer cases were smokers, with merely 6.3% of female lung cancer cases linked to smoking. Concerns have emerged regarding the number and proportion of lung cancer cases in non-smokers. In response, the Health Promotion Administration (HPA) launched the "Taiwan National Lung Cancer Early Detection Program (TNLCEDP)" on July 1, 2022, offering biennial LDCT screening to high-risk people.

**Aim:** The TNLCEDP represents a paradigm shift, targeting both heavy smokers and non-smokers/light smokers with a family history of lung cancer. Its aim is to provide accessible and effective LDCT lung cancer screening to detect cases at early stages among high-risk populations.

**Strategy/tactics:** A multifaceted approach was implemented. The HPA leveraged both domestic and international evidence and collaborated with academic associations and experts to develop screening criteria and guidelines. The implementation strategy involved establishing screening infrastructure (governance, recruitment, eligibility assessment, smoking cessation services, LDCT capacity, standardized reporting, routine surveillance, and outcome evaluation) and raising public awareness through educational campaigns.

**Programme/Policy:** The HPA introduced National Lung Cancer Prevention and Control Plan (2022–2025) and set up the resources or recommendations that tailored our health policy and services for screening infrastructure.

**Process:** The screening eligibility criteria of TNLCEDP focused on those with a family history of lung cancer and heavy smokers, marking Taiwan a pioneering country to adopt such criteria for a governmental funded lung cancer screening program. A total of 187 hospitals across 22 counties and cities were engaged in providing screening services.

**Outcomes:** The program has successfully screened 88,249 individuals, resulting in the identification of 1084 cases of lung cancer. Notably,

#### 000367 | Assessing nutrition and physical activity policy for cancer prevention in 30 European countries: Utilising the NOURISHING and MOVING policy indexes to drive action

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(2) Folkehelseinstituttet, Oslo, Norway

**Background and context:** Dietary and physical activity exposures are among the most important risk factors for preventable cancers. Nutrition and physical activity policies are key to creating environments where cancer prevention is prioritised at population level. Governments urgently need to enact policies to improve people's diets and increase physical activity levels to lower the burden of preventable cancer.

**Aim:** To support stakeholders in holding governments to account in implementing well designed policies and compare government action in nutrition and physical activity policy.

**Strategy/tactics:** WCRF International developed benchmarking tools to assess nutrition and physical activity policy design. The tools comprise evidence-informed, aspirational attributes that assess the quality of policy design. Results were presented in two policy indexes.

**Programme/Policy:** Nutrition and physical activity policy were operationalised through two policy frameworks, NOURISHING and MOVING, which bring together a set of recommended government policy actions for cancer and NCD prevention.

**Process:** National level nutrition and physical activity policy actions in 30 European countries were identified through a comprehensive scan with a set methodology. The policies were benchmarked, scores aggregated and each policy area of the NOURISHING and MOVING frameworks received a score from poor to excellent.

**Outcomes:** The NOURISHING and MOVING indexes were able to clearly show that national governments overwhelmingly prefer policy actions focused on public communications and education to the detriment of structural policies such as infrastructure for active transport and using economic tools and other incentives to support purchase and availability of healthy foods. The indexes also showed where there were concentrated gaps in policy action, namely on policies to address healthy food affordability, policies to ensure coherence

between food supply chains and health, policies on design guidelines for built environments that enable physical activity, and infrastructure for public and active transport. At country level, the benchmarking tools were able to highlight weaknesses in the design of specific policies, for example when implementing weaker self-regulatory policies on unhealthy food advertising, rather than regulatory actions.

**What was learned:** The indexes are powerful tools that can show where greater action is needed to improve nutrition and physical activity policy and can support policy advocacy to tackle gaps and improve current policies. The policy indexes and the benchmarking tools can be applied globally to support a baseline assessment of the policy status for cancer and NCD prevention. This set of policy tools can also be used to keep track of national policy progress and to assess impact on population health outcomes in the future, both in Europe and beyond.

Speaker: I. Vlad

Theme: 1. Prevention, screening & early detection

Topic: Policy development in cancer prevention

#### 000369 | Identification of novel DNA methylation markers for early detection of esophageal squamous cell carcinoma and cardia gastric adenocarcinoma

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**Background:** Esophageal squamous cell carcinoma (ESCC) and cardia gastric adenocarcinoma (CGA) remain major health burdens and co-occur geographically worldwide. Most of cases are diagnosed at advanced stages and carry a dismal prognosis. However, biomarkers for early detection of ESCC and CGA are still lacking.

**Aim:** We aim to integrate methylome and transcriptome data and identify DNA methylation markers for early detection of ESCC and CGA.

**Methods:** DNA methylation profiling of 36 paired CGA and non-tumor adjacent tissues (NAT) was performed using HM850K methylation arrays. We identified differentially methylated CpG sites (DMCs) between CGA/ESCC and NAT by combined analyses of in-house data and Gene Expression Omnibus database. Candidate DMCs were validated by pyrosequencing on paired tumor and NAT from 50 CGA and 50 ESCC patients, and mRNA expression of their target genes was detected by quantitative real-time RT-PCR. An independent cohort of 438 CGA, ESCC, high- and low-grade dysplasia (HGD/LGD), and normal control biopsies was tested for selected DMCs using pyrosequencing. Diagnostic performance was evaluated using the Receiver Operating Characteristic Curves with the area under the curve (AUC).

**Results:** We identified and validated three CGA-specific, two ESCC-specific, and one tumor-shared DMCs, which were significantly hypermethylated with lower expression of their located genes in tumor compared with NAT samples. Using these DMCs, we developed a CGA-specific 4-marker panel (cg27284428, cg11798358,

cg07880787, and cg00585116) achieving AUC of 0.995 (95% CI: 0.982–1.000) and 0.962 (95% CI: 0.920–1.000) for early-stage and all-stage CGA, respectively, and an ESCC-specific 3-marker panel (cg14633892, cg04415798, and cg00585116) with an AUC of 0.970 (95% CI: 0.939–1.000) and 0.978 (95% CI: 0.958–0.999) for detecting early-stage and all-stage ESCC, respectively. We then evaluated the performance of DMCs for detecting cancerous and precancerous lesions, the CGA-specific 4-marker panel discriminated cardia HGD/CGA patients from cardia LGD/normal controls with AUC of 0.917, and the ESCC-specific 3-marker panel distinguished esophageal HGD/ESCC with AUC of 0.865.

**Conclusion:** Collectively, novel DNA methylation markers could differentiate CGA/ESCC and HGD from LGD and normal controls with promising accuracy. Our findings pave the way for targeted DNA methylation assays in future minimally invasive cancer screening methods.

Speaker: Z. Fan

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

#### 000406 | Five years National effort to fight against cancer: Tanzania's experience

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**Background and context:** Tanzania is among countries with high incidence rates of cancer. It is estimated that about 40,000 new cases of cancer and 26,000 deaths occurred among the population of 60 million every year. The major type of cancer is cervical cancer followed by breast and prostate cancer. For that reason, in 2018/19 the Government of the United Republic of Tanzania made a huge investment in cancer treatment facilities at Ocean Road Cancer Institute which cost about 6 m USD. The investment increases the access of cancer treatment in the country and reduced the patient waiting time from 2 months to 2 weeks. Despite this investment, large numbers of patients still reported to the hospital with advanced stage of cancer development.

**Aim:** The aim of this paper is therefore to share the effort that has been made by the Government in order to reduce the cancer burden (incidence and deaths) to 50% by 2030.

**Strategy/tactics:** expansion of screening units, diagnostic machines, vaccination and modern treatment machines.

**Programme/Policy:** the target of the Government to reduce cancer burden by 50% in 2030 will be reached.

**Process:** In 2021, the Government has made second effort to procure 30 CT scanners and 5 MRI in the country with one of the aims to detect cancer at early stages. With this effort, twice the number of patients were referred to treatment facilities because of the large access of the CT scanner in the country but still comes with late

representation. In 2023, The United Republic of Tanzania and the International Atomic Energy Agency (IAEA) upgraded the two brachytherapy machines for treating cancer of the cervix in order to increase the treatment outcome of the disease. In 2023, the Government has invested more than 8 m USD for construction, installation, commissioning of both Cyclotron and PET-CT scan. The PET-CT unit will be operational in May 2024. It is hoped that, PET-CT scanner will be used to detect cancer when it is in early stage of development which will reduce the number of patients who goes for the palliative to curative intent.

**Outcomes:** The Government of the United Republic of Tanzania has introduced cancer screening units in all zonal hospitals and vaccination for cervical cancer. If these services could further be introduced to regional referral hospitals and the investments that have already made, the target of the Government to reduce cancer burden by 50% in 2030 will be reached. Cancer control, diagnosis and management is a long process. Joint effort between Government and international organizations is needed to speed up the fight. Education as well investment from screening, vaccination, early diagnosis and expansion of treatment with advanced equipment is a way to fight against cancer.

**What was learned:** Cancer control, diagnosis and management is a long process. Joint effort between Government and international organizations is needed speed up the fight.

## References

National cancer Control Strategy, Globocan

Speaker: S. yusuph

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

## 000452 | Sex hormones and blood metabolites mediating the causal associations between gut microbiota and prostate cancer: Evidences from mendelian randomization study

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**Background:** The gut microbiota has been recognized as tumor biomarkers for various cancers, and specific tumor markers can be discovered through causal relationships. The causal relationships between gut microbiota and prostate cancer remained uncertain.

**Aim:** We intend to identify the causal connections between gut microbiota and prostate cancer and investigate the potential underlying mechanisms.

**Methods:** A two-sample Mendelian randomization (MR) analysis was conducted to elucidate the impact of 196 gut microbiota on prostate cancer (Figure 1). The reverse MR, linkage disequilibrium regression score (LDSC), and colocalization analyses were performed to strengthen causal evidence. A genome-wide MR (Phe-MR) analysis evaluated potential side effects targeting the detected gut microbiota. We

designed a two-step MR study to assess the mediation effects of circulating cytokines, sex hormones, and blood metabolites.

**Results:** In the MR analyses, 11 bacterial taxa were causally associated with prostate cancer (Figure 2a and b). In these bacterial taxa, *Alphaproteobacteria* ( $OR = 0.87$  95% CI, 0.76–0.96,  $p = 0.004$ ) restrained prostate cancer and *Paraprevotella* ( $OR = 1.08$  95% CI, 1.00–1.17,  $p = 0.044$ ) had a risk effect on prostate cancer. In reverse MR analysis, gut microbiota abundance was unaffected by prostate cancer. LDSC and colocalization analyses indicated that the detected associations would not be confounded by genetic correlation or LD from common causal loci (Figure 2c). The Phe-MR analysis showed no apparent tox or side effects on the identified gut microbiota. In the mediation analysis, we found 7 mediators linking gut microbiota to prostate cancer, with a specific emphasis on the critical roles played by sex hormones and blood metabolites (Figure 3).

**Conclusion:** Our study represented the first comprehensive exploration of the gut microbiota's causal effects on prostate cancer and revealed the mediating effects of sex hormones and blood metabolites in the "gut-prostate axis." Our study has contributed to the discovery of tumor biomarkers in the gut microbiota for prostate cancer, providing a basis for early screening and treatment of the disease.

Speaker: F. Yang

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

## 000461 | Single dose of HPV vaccine shows durable protection 15 years after vaccination—Follow up data from IARC cohort study in India

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**Background:** The Strategic Advisory Group of Experts of the WHO recommended off-label use of a single dose of HPV vaccine for females up to 20 years of age. They also recommended to continue long term follow up post-vaccination to monitor any waning of efficacy with time. Till date, 11 year follow up data is available for bivalent vaccine only.

**Aim:** Aim of our ongoing cohort study in India is to report comparative efficacy of a single dose, two doses and three doses of quadrivalent vaccine against incident persistent infection from HPV 16/18 and the protection offered against CIN2+ associated with these two genotypes. The present abstract reports follow up data from 15 years after initiation of vaccination.

**Methods:** A multi-centre study was initiated in India in September 2009 to compare two with three doses of Gardasil. The original plan was to randomize 20,000 unmarried girls aged 10–18 years to receive either two (at 0 and 6 months) or three (at 0, 2 and 6 months) doses. A Ministerial decree was issued to halt vaccination in trials on 8th April 2010, due to which four cohorts of girls receiving different doses were created—three doses as per protocol, two doses as per protocol, two doses at days 0 and 2 months and a single dose. The third cohort

has been excluded from this analysis as the vaccination schedule is of no practical value. The cohorts were followed up and assessed for incident persistent infections based on genotyping of cervical samples collected yearly for four consecutive years after the participants got married. Cervical screening with an HPV detection test was initiated at 25 years for married participants. Age- and site-matched unvaccinated married women were recruited to serve as controls. Incident persistent infection was defined as detection of same HPV genotype in two consecutive cervical samples collected at least 10 months apart.

**Results:** Number of participants was 4949 in single-dose, 4980 in two-dose (0 and 6 months) and 4348 in three-dose cohorts. VE against incident-persistent HPV16/18 could be estimated in 3022 single-dose recipients providing at least two samples. The number was 2311 and 2172 in two and three dose recipients respectively. At a median follow up of 12 years, the vaccine efficacy against HPV 16/18 persistent infections in single dose recipients was 92.0% (95% CI: 87.0–95.0%); which was comparable to that observed in recipients of two doses (94.8%; 95% CI: 90.0–97.3%) and three doses (95.3%; 91.0–97.5%). Among 4734 unvaccinated women 12 CIN 2/3 and one invasive cancer was detected; seven were associated with HPV 16/18. Among vaccinated women only four cases of CIN 2/3 (one in single dose group) were detected and none were associated with HPV 16/18.

**Conclusion:** Single dose of quadrivalent vaccine has high and durable protective efficacy against persistent HPV 16/18 infections and associated neoplasias.

Speaker: P. Basu

Theme: 1. Prevention, screening & early detection

Topic: Other

#### 000486 | Conquest of cancer by choice

GULABANI C. R. \* (1)

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**Background and context:** In 2023, life expectancy in India was 70.42 years, a 0.33% increase as compared to 2022. Lack of awareness makes patients reach the hospital at a very late stage. For early detection, health literacy is a powerful tool to combat cancer.

**Aim:** Preventive Oncology.

**Strategy/tactics:** Education.

**Programme/Policy:** Information dissemination.

**Process:** Before cancer Health literacy is awareness about the risk factors, symptoms, prevention and treatment of cancer. Early detection is the key to win over cancer. The ICS educates and motivates the people for regular screening after the age of 35. ICS detection centre does the needful. The ICS makes the informative material in different languages simple and comprehensible. The information is accessible, understandable and usable for making informed decisions. To disseminate information, physical awareness talks, radio talks; zoom talks etc are used. Digitally E-Learning course on cancer fundamentals was developed. A series of educational modules has been

launched on Swayam Platform. Faculty Development Project is an online programme wherein Faculties of colleges pan India are trained in fundamentals of cancer. They train about 5 to 10 students who educate the youth and the community. The Mobile App- Rise against Cancer, a multi lingual mobile App covers main cancers like Head & Neck, Breast and Cervical Cancers made interesting with a lot of audiovisual contents.

**When struck with cancer.** The patient must be educated about the different therapies and their side effects and how to deal with them. E.g. A breast cancer patient generally goes through surgery, chemotherapy and radiation. Surgery may result in mastectomy, so bras and prosthesis are made available. The patient is also educated to take precautions to avoid lymphoedema. Tips to fight against the side effects of chemo and to avoid infections given. They are guided about wigs, compression garments etc. During Radiotherapy clothes should be soft, cotton and loose. Different types of cancers give rise to different issues so accordingly they are educated. They are guided about the food also.

Literacy about the resources and services required by the patient is given. Poor patients are educated about financial sources like Govt. schemes, CSR funds, charitable trusts, individual donors, NGOs like the ICS etc.

**Rehabilitation-Literacy** for QoL and to lead a normal life. The ICS guides about the gynae and sexual issues at its rehabilitation centre Prashanti to discuss their issues in a private and peaceful environment. Sometimes experts are invited to talk. Survivors are given tips to overcome their cognitive and other issues.

**Outcomes:** 100 s of survivors caught it early, saved the organ, got cured.

**What was learned:** Health literacy helps making appropriate health decisions.

Speaker: C. R. Gulabani

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

#### 000493 | Uncertainties of HPV vaccine acceptance: A cross sectional study of determinants of HPV vaccine hesitancy in resource-constraint settings of Nigeria

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**Background:** The prevalence of cancer in the 21st century has been incidentally reported in many medium and low-income countries, especially sub-saharan Africa. Amongst this cancer is cervical cancer which has a high mortality rate. This when compared to the high-income countries which have low incidence report are because of many reasons including fewer monetary, educational, and healthcare

resources, and the lack of HPV vaccines coupled with the dilemma around accepting the vaccines in this part of the world.

**Aim:** The study aims to ascertain the determinants of Human Papillomavirus (HPV) vaccine hesitancy in Nigeria which is known to be educationally backward and harbor stereotypical and cultural norms that escalate the cancer burden. The mortality rate of cervical cancer in Africa is a tragedy that cannot be overemphasized, especially for a disease that is preventable, this should be one of the most pivotal topics in the upcoming World Cancer Congress.

**Methods:** The qualitative research method of collecting data was used for this research. First, a survey was administered in the form of a questionnaire, the themes used to generate the questionnaire were driven from the Health Belief Model (HBM). Overall, the survey had 474 respondents across different categories within Nigeria, these categories were class (elite, middle class, and lower class), location (cities, urban and rural areas), and occupation (employed, unemployed, and students). The survey included all sexes and across all ages, questions were close ended to provide for consistency from the correspondents, google forms were used to generate the questionnaire and the results were analyzed and presented in charts and graphs. The second part of data collection was through the qualitative semi-structured interview. The interviewees were randomly selected and the HBM was used to develop questions from themes and subthemes about the interviewee's knowledge of HPV vaccines. All ethical considerations were considered while collecting the data.

**Results:** Majority (69.4%) of the respondents have a basic knowledge of HPV and also understands it causes cervical cancer. Following an insightful thought about HPV and cervical cancer, Majority (88.8%) support HPV vaccine should be given as a routine immunization in girls before the onset of sexual activity to prevent cervical cancer in girls with high (87.7%) acceptability rate. The safety and effectiveness of HPV vaccine buttress by the respondents' shows that HPV vaccine is not safe and effective due to the fact that, (56.1%) portray lack knowledge about the vaccine and (28.9%) reported the unavailability of the vaccine at the primary health care centers across Nigeria.

**Conclusion:** There is a dire need to increase sensitization and accessibility of the vaccine in LMICs, this is paramount in reducing the menace of this endemic.

## References

- Groves, S., & Brooks, J. (2022). What do young women below national screening age in England think about cervical cancer and cervical screening? A qualitative study. *Journal of Clinical Nursing*, 31, 1588–1597. Groves, S., & Brooks, J. (2022). What do young women below national screening age in England think about cervical cancer and cervical screening? A qualitative study. *Journal of Clinical Nursing*, 31, 1588–1597. Angela Chia-Chen Chen, Calli Astroth, Elizabeth Reifsnider, Hui Yang, Wenlan Mao, Hong Chen (2021) Exploring Chinese College Students' HPV Awareness, Knowledge, Attitudes, and Intent of HPV Vaccination: a Qualitative Study. *Journal of Cancer Education* (2021) 36:1211–1218, Kayoll V. Galbraith-Gyan, Julia Lechuga, Coretta M. Jenerette, Mary H. Palmer, Angelo D. Moore, Jill B. Hamilton (2018) African-American parents' and daughters' beliefs about HPV infection and the HPV vaccine. *Public Health Nurs.* 2019;36:134–143.

Speaker: U. Musa Umar

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

## 000516 | Effects of “no safe level” risk relationship messaging on perceptions of alcohol use and cancer risk

Payne J. (1); Klein W. \* (1); Berrigan D. (1); Moser R. (1); Han P. (1)

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**Background:** Alcohol is a known carcinogen, but public awareness of this fact is low compared to other exposures such as tobacco. Increasing such awareness is an important goal, but knowledge of how communication about alcohol related cancer risk influences health related cognitions is limited. Public health and regulatory organizations are in the position of designing messages including warning labels on alcoholic beverage containers, which are an effective way to reach people who drink. Some organizations are moving forward with “no safe level” of drinking messaging, but this all-or-nothing approach may incite negative reactions.

**Aim:** To understand how different ways of communicating the cancer-alcohol risk relationship, including “no safe level” messaging, may affect alcohol-related cognitions.

**Methods:** We conducted message testing experiments among a convenience sample of US adults ( $n = 1096$ ) from an online research panel, aimed at evaluating how four alternative warning label messages, differing in the language used to describe the cancer-alcohol risk relationship, affected cognitions including perceived risk and intentions to drink alcohol: unspecified (no described relationship), “no safe level,” “the more you drink, the higher the risk,” “the less you drink, the lower the risk.”

**Results:** Language used to describe the cancer-alcohol risk relationship was significantly associated ( $p < .05$ ) with several cognitions. Specifically: (1) Perceived risk was higher but certainty about risk was lower for “no safe level” versus other risk relationships; (2) Perceived strength of the causal relationship was higher for “no safe level” vs. other risk relationships, (3) Message believability was lower for “no safe level” versus other risk relationships; (4) Perceived message novelty and interest in learning more were both higher for “no safe level” vs. other risk relationships; and (5) Behavioral intentions to reduce alcohol consumption were higher for “no safe level” versus other risk relationships.

**Conclusion:** The language used on alcohol warning labels to describe the cancer risk associated with alcohol use has different cognitive effects. Our results showed that the “no safe level” message increased perceptions of the cancer risk associated with alcohol use and the strength of the relationship, as well as perceptions of message novelty and interest in learning more. It also increased intentions to reduce alcohol consumption among drinkers. However, the “no safe level” message also reduced subjective certainty about the risk relationship and the believability of the message. More work is needed to

determine how these changes in cognitions are associated with alcohol consumption and to explore the potential mechanisms of these effects for different population subgroups.

**Speaker:** W. Klein

**Theme:** 1. Prevention, screening & early detection

**Topic:** Alcohol control efforts

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**000523 | A prospective 5-country observational study of the performance of a new artificial intelligence-based tool for cervical pre-cancer screening in the African region**

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**Background:** Cervical cancer is preventable but kills 300,000 women annually, almost entirely in low- and middle-income countries where access to preventive services is limited. Visual inspection of the cervix using acetic acid (VIA) remains a common method of screening for pre-cancer but is known to have suboptimal accuracy.

**Aim:** A new, internally validated artificial intelligence-based tool designed as an aid to health workers to improve the accuracy of VIA-Automated Visual Evaluation (AVE)—was evaluated for external accuracy and performance relative to VIA alone.

**Methods:** Participating government clinics in Malawi, Rwanda, Senegal, Zambia, and Zimbabwe convenience sampled eligible women from March 2022 through January 2023 per national guidelines and administered human papillomavirus (HPV) testing, VIA, and AVE. Screen-positive women received cervical biopsy and appropriate treatment; confirmed histopathology of cervical intraepithelial neoplasia 2 or greater (CIN2+) served as reference standard for case status.

**Results:** Among 24,447 eligible women (39.1% living with HIV), 11,635 (47.5%) women were positive on at least one test: HPV: 31.5%; AVE: 22.9%; VIA: 9.5%. Of 17,690 women with confirmed disease status, 476 (2.7%) had CIN2+. AVE was found to have sensitivity of 60.1% (95% CI: 55.5%–64.5%) for detection of confirmed CIN2+ cases and specificity of 81.9% (81.3%–82.5%) for <CIN2. VIA was found to have sensitivity of 36.6% (32.2%–41.1%) and specificity of 94.2% (93.8%–94.5%). HPV was found to have sensitivity of 90.4% (87.4%–92.9%) for CIN2+ and specificity of 80.2% (79.5%–80.7%) for <CIN2. The improved sensitivity of AVE as compared to VIA was highly statistically significant ( $p < .001$ ). The intended use case of “AVE-assisted VIA”—considering a participant as positive when either

VIA or AVE results are positive—was found to have sensitivity of 71.8% (67.6%–75.8%) and specificity of 79.0% (78.3%–79.6%). Sensitivity and specificity of AVE were not affected by HIV or HPV status.

**Conclusion:** AVE's increased sensitivity compared to VIA offers the potential to feasibly and affordably increase cervical precancer detection; however, there is a moderate loss in specificity. The disease burden underscores the importance of scaling up population-based screening and treatment for precancer in resource-limited settings to support cervical cancer elimination objectives.

**Speaker:** C. Barrett

**Theme:** 1. Prevention, screening & early detection

**Topic:** Screening and early detection: technological advances

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**000538 | The Korea National Cancer Prevention Health Survey: Establishment and operation through Korea-US joint research collaboration**

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**Background and context:** Cancer remains a central public health concern with an ever-increasing incidence both in Korea and the world. Despite the constantly evolving treatment approaches, the importance of prevention has been constantly emphasized. Therefore, establishing a comprehensive National Cancer Prevention Health Survey System is important for proactively monitoring and addressing cancer risk factors.

**Aim:** In this study, we aimed at establishing a national-level cancer prevention survey in Korea through Korea-US collaboration, continuously monitoring cancer risk factors to enable effective prevention.

**Strategy/tactics:** In Korea, the National Cancer Prevention Health Survey, encompassing a population-based sampling plan to ensure broad representation, is underway. Survey content and methodology were meticulously crafted for effective relevant data gathering. Pilot operations and analyses are ongoing to fine-tune approaches and ensure efficacy. In addition, an expert advisory committee of Korean-US representatives convened to offer strategic guidance and expertise during the research endeavor.

**Programme/Policy:** The National Cancer Prevention Health Survey entails a population-based sampling plan, sampling trend analysis, and specialized method development. The survey includes a literature review to compile the relevant items and existing research data assessment to establish a Korean-US-joint research methodology. The pilot phase involved a trial survey with subsequent statistical analysis and the publication of joint findings categorized by risk factors. The aforementioned committee would convene regularly to formulate recommendations, supported by workshops on survey implementation strategies.

**Process:** Process involves developing a population-based sampling plan, designing survey content and methodology, conducting pilot operations and analysis, and convening an expert advisory committee

with representatives from Korea and the US to ensure comprehensive and high-quality data collection and analysis.

**Outcomes:** We provide innovative approaches for cancer prevention that are distinct from strategies targeting carcinogens. We are currently developing monitoring indicators tailored to cancer-prevention health behaviors on a national scale. In addition, we ensure precise and accessible dissemination to the public related to carcinogens, effectively conveying the associated risks. Furthermore, we deliver customized information and practice guidelines, considering the unique participant attributes engaged in the Korea-US research collaborations.

**What was learned:** Establishing a joint Korea-US National Cancer Prevention Health Survey is key to combating cancer. Nationwide risk factor monitoring enables targeted interventions, whereas widespread dissemination fosters positive changes, emphasizing global health cooperation.

#### References

- Siegel, R. L., Giaquinto, A. N., & Jemal, A. (2024). Cancer statistics, 2024. CA: a cancer journal for clinicians, 74(1), 12–49. <https://doi.org/10.3322/caac.21820>, Kang, M. J., Jung, K. W., Bang, S. H., Choi, S. H., Park, E. H., Yun, E. H., Kim, H. J., Kong, H. J., Im, J. S., Seo, H. G., & Community of Population-Based Regional Cancer Registries\*. (2023). Cancer Statistics in Korea: Incidence, Mortality, Survival, and Prevalence in 2020. Cancer research and treatment, 55(2), 385–399. <https://doi.org/10.4143/crt.2023.447>.

Speaker: J. A. Kwon

Theme: 1. Prevention, screening & early detection

Topic: Policy development in cancer prevention

#### 000545 | Socioeconomic inequalities in HPV awareness between South Korea and United States

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**Background:** Human Papilloma Virus (HPV) is the leading cause of cervical cancer, as well as anal, oral, head and neck cancer. Additionally, it is known that HPV can be prevented through vaccination. However, HPV-related awareness is still low in Korea. In particular, the awareness inequality is expected to show disparities depending on socioeconomic level. This study was designed to determine whether there was inequality in awareness of HPV-related awareness according to education level and income level. Accordingly, we examined inequality through socioeconomic status in Korea and the USA, which have different HPV policies and social backgrounds.

**Aim:** In this study, we aimed to investigate the inequality of education and income level in HPV-related awareness in Korea compare to United States.

**Methods:** Data were from the Korean National Cancer Prevention Awareness and Practice Survey (NCCK, 2022) and the Health Information National Trends Survey (NCI HINTS cycle6, 2022). The total

number of subjects is 4000 for Korean survey and 3498 for HINTS. As socioeconomic status, we investigated education and household income level. Outcome variables were the answers of awareness for “Do you think HPV can cause cervical cancer (Question1)?”, “A vaccine to prevent HPV infection is available (Question2).” We measured health inequality using two indices; the Slope Index of Inequality (SII) for absolute inequalities and the Relative Index of Inequality (RII) for relative inequalities.

**Results:** Men had significantly lower awareness in Korea ( $aOR = Q1:0.21/Q2:0.21$ ) and in USA ( $aOR = Q1:0.59/Q2:0.42$ ) than women in both Questions 1 and 2. Education level had higher inequalities than income level, both countries. In question1, in education level, Korean men had highest inequalities awareness (SII: 0.11; RII: 1.60). The lowest inequality group was women in USA (SII: 0.09; RII: 1.66). In income level, Korean women had highest inequalities (SII: 0.07; RII: 1.57). The lowest inequality group was men in USA (SII: 0.05; RII: 1.22). In question2, which was HPV can prevent by vaccination, in education level, Korean women had highest inequalities (SII: 0.12; RII: 1.85). The lowest inequality group was women in USA (SII: 0.04; RII: 1.48). In income level, Korean men had highest inequalities (SII: 0.07; RII: 1.37). The lowest inequality group was women in USA (SII: 0.04; RII: 1.60).

**Conclusion:** The men had lower HPV awareness comparing women in both countries. The inequalities for education level were higher than income level in both countries. Korean had higher inequalities compare to USA. Nevertheless, those two countries had different NIP for HPV. In addition to the current targets that are focusing on improving HPV-related awareness in Korea and the USA, efforts to expand awareness to groups where inequalities exist depending on education and income level will improve overall HPV-related awareness and reduce inequalities.

Speaker: S. Park

Theme: 1. Prevention, screening & early detection

Topic: Equity and cancer prevention

#### 000552 | Cancer risk calculator: A tool to help people understand the modifiable behaviours that can reduce cancer risk

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**Background and context:** Almost 1 in 2 Australians will develop cancer by age 85. Preventing cancer is one of the most effective ways of reducing the incidence of cancer. Many cancers are not preventable and may be due to genetic factors, but at least 1 in 3 cancer cases [1] can be prevented through healthy lifestyle choices.

**Aim:** To improve the populations understanding of the lifestyle behaviours that can increase risk of cancer or lead to early detection of cancer, Cancer Council Queensland developed the Cancer Risk Calculator, first launched in 2020.

**Strategy/tactics:** The Cancer Risk Calculator is an online, interactive tool that asks a series of lifestyle questions to identify current

behaviours and steps that can be taken to reduce cancer risk through modifiable lifestyle behaviours.

**Programme/Policy:** The Cancer Risk Calculator does not calculate someone's risk of getting cancer, but how much they are currently reducing their cancer risk through lifestyle choices. At the end of taking the Cancer Risk Calculator, a score out of 100 is generated for each of the risk factors. A score of 100 for each risk factor is the best score that can be achieved. Recommendations are then provided based on national guidelines and leading cancer research and are specific to age, gender and how the questions were answered.

Preliminary analyses from people who completed the original version of the Cancer Risk Calculator ( $n = 50,431$ ) between August 2020 and March 2024 will be presented.

**Process:** In 2023, Cancer Council Queensland began redevelopment of the Cancer Risk Calculator to ensure questions about cancer risk factors and modifiable behaviours were consistent with national and international guidelines. The new calculator utilises a more scientific evidence-based approach to develop scoring algorithms for each risk factor category. These scoring algorithms are used to quantify how much people can reduce their future cancer risk through lifestyle choices and are benchmarked to cohort averages.

The Cancer Risk Calculator uses national guidelines, gender, gender at birth and age to personalise the questions. Questions about vaping behaviour are also included.

**Outcomes:** The updated Cancer Risk Calculator was launched March 2024, with over 4000 people completing the new Cancer Risk Calculator in the first 3 weeks.

**What was learned:** Preliminary results from the updated Cancer Risk Calculator will be presented, including a comparison with the previous results, along with a discussion of the successes and learnings and how this can be translated to inform the design of interventions, policy and practice in cancer control.

#### References.

- [1] Whiteman D C, Webb P M, Green A C, et al., 2015. Cancers in Australia in 2010 [special issue]. *Aust N Z J Public Health*. 39(5): p. 403–499.

Speaker: S. Chin Fat

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

#### 000570 | Preventable cancers in Australia

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**Background:** Estimates of future cancers attributable to current modifiable causal exposures at the population level can guide the prioritisation of cancer prevention policy and practices.

**Aim:** To provide up-to-date estimates of cancers preventable in Australia through modifications to current causal exposures. The continuing impacts of past exposures, such as past smoking, is acknowledged but not presented here.

**Methods:** We linked pooled individual-level data from seven Australian cohort studies ( $N = 367,058$ ) to national population-based cancer and death registries, and estimated exposure-cancer and exposure-death associations using adjusted proportional hazards models. We estimated exposure prevalence from National Health Survey 2017 to 2018. These estimates were then combined to calculate population attributable fractions (PAFs) and their 95% confidence intervals (CIs) for cancers preventable through modifications in exposure distribution, while simultaneously accounting for the impact of those modifications on competing risk of death.

**Results:** Current smoking is estimated to explain 18.4% (95% CI 15.7%–21.0%), overweight and obesity 13.5% (9.1%–17.6%) and alcohol consumption exceeding two drinks/day 3.7% (2.0%–5.4%) of cancers causally related to these exposures, corresponding to 111,000, 89,000 and 21,000 cancers projected in Australia during 2021–2030, respectively. Current smoking is the leading modifiable cause of lung (47.0%), head and neck (24.5%), oesophageal (23.6%), bladder (23.5%), liver (22.7%) and pancreatic (16.8%) cancers. Overweight and obesity is the leading modifiable cause of corpus uteri (48.1%), gastric cardia (38.0%), renal cell (32.7%), thyroid (25.3%), postmenopausal breast (16.3%) and colorectal (12.0%) cancers. The absolute numbers of cancers during 2021–2030 attributable to current smoking are highest for lung cancer (67,000). The numbers of cancers attributable to overweight and obesity are highest for postmenopausal breast (27,000) and colorectal cancer (20,000).

**Conclusion:** Current smoking and excess body fatness are the leading modifiable causes of preventable cancers in Australia. Most cancers attributable to these exposures are common cancers. Successful cancer control in Australia requires sustained and innovative laws, regulations, control measures, educational campaigns, supports, and incentives to prevent and reduce smoking and excess body fatness.

Speaker: M. Laaksonen

Theme: 1. Prevention, screening & early detection

Topic: Cancer and lifestyle

#### 000595 | Developing evidence-based recommendations on dietary and lifestyle patterns for cancer prevention

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**Background:** World Cancer Research Fund/ American Institute for Cancer Research (WCRF/AICR)'s cancer prevention recommendations are widely used and provide a blueprint for cancer prevention. However, data were previously insufficient for recommendations on whole diet and lifestyle.

**Aim:** To develop globally relevant evidence-based recommendations on dietary and lifestyle patterns for preventing breast cancer (BC) and colorectal cancer (CRC), and cancer overall, and to consider policy implications.

**Methods:** Five phases of work:

1. Evidence on dietary and lifestyle patterns and risk of BC and CRC was systematically reviewed, including longitudinal cohort studies and randomised-controlled trials.
2. Evidence on biological mechanisms underpinning the strongest associations identified in (1) were examined using a pre-specified framework.
3. An independent Expert Panel graded the strength of evidence using pre-determined criteria, mechanistic evidence was an 'upgrading factor'.
4. The Panel developed globally applicable recommendations based on 'strong' evidence, considering broader contextual factors.
5. A report is being developed for scientific, policy, civil society, and public audiences. This will summarise the recommendations and evidence, and outline policy implications.

**Results:** Most of the evidence was from cohort studies. For both cancers, WCRF/AICR cancer prevention recommendations were graded 'strong probable' (indicating probable causality). Mechanistic-derived patterns measuring insulin and inflammation were graded 'strong probable' for CRC. Other patterns were graded 'limited'. Recommendations were made for preventing cancer overall and for BC and CRC. Due to overlap between pattern components and the need for clear public messaging, recommendations for a 'healthy dietary and lifestyle' pattern were developed rather than for individual patterns.

**Conclusion:** Dietary and lifestyle patterns have a clear role in the development of BC and CRC. Effective communication is paramount for translating these findings for public benefit. This work builds on existing WCRF/AICR recommendations and emphasises the importance of considering the whole diet/ lifestyle rather than focusing on individual foods/ behaviours.

**Speaker:** H. Croker

**Theme:** 1. Prevention, screening & early detection

**Topic:** Cancer and lifestyle

#### 000614 | Effect of online interactive decision tools on breast cancer screening decisions: A systematic review and meta-analysis

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**Background:** Online interactive tools (e-tools), designed to help women's decision to undergo breast cancer screening (BCS) by mammography, may facilitate wider access for patients and health professionals (HP), as well as permit more integrated implementation of shared-decision-making (SDM).

**Aim:** We aimed to assess the effects of those e-tools on women's decision making to undergo BCS.

**Methods:** We performed a systematic review of studies, notably through a search updated in April 2023 in Medline via PubMed, PsycINFO, Embase, CINAHL and Web of Science databases, and conducted meta-analyses of the identified randomised controlled trials.

**Results:** 31 records, representing 22 different e-tools, either assessed to be 'tailored' ( $n = 17$  out of 22), or 'features-with-tailoring' ( $n = 14$ ) e-tools, were identified. Compared with the control groups, e-tools did not increase women's short-term participation in BCS but tailored e-tools did increase long-term participation (RR = 1.14; 95% CI: 1.07–1.23;  $p = 0.0002$ ;  $I^2 = 0\%$ ). The e-tool increased significantly women's adequate knowledge about BCS with 'features-with-tailoring' e-tools driving a higher increase compared with tailored e-tools (Test for subgroup differences:  $\chi^2 = 5.68$ , df = 1 [ $p = 0.02$ ]). Compared to control groups, e-tools did not change women's positive attitude or intention towards undergoing BCS. However, features-with-tailoring e-tools did increase the rates of women who intended not to undergo BCS (RR = 1.88; 95% CI: 1.43–2.48;  $p < 0.00001$ ;  $I^2 = 0\%$ ), and who have made an informed choice about intention to undergo BCS (RR = 1.60; 95% CI: 1.09–2.33;  $p = 0.02$ ,  $I^2 = 91\%$ ). In addition, they decreased the proportion of women with uncertainty regarding the choice made or to undergo BCS (decision conflict) (RR = 0.77; 95% CI: 0.65–0.91;  $p = 0.002$ ;  $I^2 = 0\%$ , FE). E-tools tailored to the woman's individual risk of breast cancer, increased women's level of worry (MD = 0.31; 95% CI: 0.13–0.48;  $p = 0.0005$ ;  $I^2 = 0\%$ , FE). Shared-decision-making was not formally evaluated even though results suggest that e-tools increase discussion of women with HP about BCS.

**Conclusion:** The tailoring nature of e-tools is important to drive e-tools' effect. We advocate for a layered "on demand" approach to deliver BCS information to women, which needs to be well integrated into clinical pathways or healthcare services and by several different ways.

**Speaker:** P. Villain

**Theme:** 1. Prevention, screening & early detection

**Topic:** Screening and early detection: recruitment and communication

**000641 | Culturally competent education and HPV self-sampling achieves over 90% cervical screening in low-income Black and Hispanic women**

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**Background:** Disparities in cervical cancer screening, incidence, and mortality exist in the United States. Cervical cancer incidence and mortality rates in Texas are 20% and 32% higher, respectively, than national averages. Within Texas, these rates are significantly higher among Black and Hispanic women. Cervical cancer screening uptake is lower among Black and Hispanic women (72.9% and 75.9%, respectively) compared to White women (85.5%) in Texas.

**Aim:** Aim-1: To determine the *feasibility* of a novel intervention of culturally competent education and HPV self-sampling among low-income Black and Hispanic women living in Houston (TX) Public Housing.

Aim-2: To determine the *efficacy* of a novel intervention of culturally competent education and HPV self-sampling among low-income Black and Hispanic women living in Houston (TX) Public Housing.

**Methods:** During March–August 2023, we conducted a pilot study that offered culturally competent education and HPV self-sampling kits to women in two public housing projects in Houston, TX, that have predominantly Black or Hispanic residents. Among those eligible for cervical cancer screening 35% ( $n = 24$ ) of the Black and 34% ( $n = 16$ ) of the Hispanic women were found to be underscreened per the United States Preventive Services Task Force (USPSTF) Guideline. We recruited 40 (24 Black and 16 Hispanic) eligible women for our study. The study was approved by the MD Anderson IRB and registered with the ClinicalTrials.gov (NCT04614155-11/03/2020).

**Results:** Seventy-five percent of the Black and 87% of the Hispanic participants completed the HPV self-sampling procedures per protocol. Samples of 17% Black and 12% Hispanic participants showed a performance error. Overall, cervical cancer screening uptake improved from 65% to 91% among Black and 66% to 96% among Hispanic participants.

**Conclusion:** Culturally competent education and HPV self-sampling resulted in remarkable improvement in cervical cancer screening uptake among under-screened Black and Hispanic women residents of Houston public housing projects. Implementing this strategy could significantly reduce cervical cancer incidence and mortality among similar populations in the United States and globally.

Speaker: S. Shastri

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: recruitment and communication

**000666 | The ROSA project: How we produced a Roadmap to risk-adjusted breast cancer screening in Australia**

Nickson C. \* (1); Grogan P. (1); Mann G. B. (2); Canfell K. (1)

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**Background and context:** There is growing interest worldwide in risk-adjusted breast cancer screening, including in Australia where a successful age-based program has been in place for 25 years. Improvements in risk assessment combined with targeted screening technologies may significantly reduce the burden of breast cancer at a population level. While trials are underway, there is a need to address implementation-related evidence gaps and prepare for potentially substantial policy and health system changes.

**Aim:** To investigate options for risk-adjusted breast cancer screening in Australia, and to provide a national Roadmap for evidence-based implementation.

**Strategy/tactics:** Our strategy was to secure government buy-in for exploring risk-adjusted breast screening, achieved through government funding to Cancer Council Australia for a project plan with state/territory officials as key stakeholders. Strategic outputs included government-badged public reports, research forums and stakeholder engagement.

**Programme/Policy:** The ROSA project comprised a 5-year programme of evidence review, research, service mapping, clinical and cost-effectiveness modelling and stakeholder consultation, informed by expert and stakeholder panels.

**Process:** We delivered a programme of technical reports to government which were synthesised into a final public report including a five-year Roadmap outlining recommended considerations for programme governance and resourcing, data collection and evaluation, equity of access, and local clinical studies and trials.

**Outcomes:** In late 2023, Australia's national health minister announced a review of the BreastScreen Australia program, stating “*The Australian Government...has announced the review following recommendations from the Roadmap to Optimising Screening in Australia (ROSA) project. I commend [the team's] work in generating the evidence base to inform the future of breast cancer screening.*” In addition, the project's peer-reviewed publications and public abridged reports [e.g., 1–3] provide evidence to guide policy considerations and strengthen advocacy and research priorities.

**What was learned:** Structural reform of cancer screening programmes often requires a disrupter, such as the HPV vaccine's impact on cervical screening. ROSA demonstrates that government-supported comprehensive evidence review, and informed consensus on its interpretation through consultation, can also catalyse potential reform. Our experience may assist other government-level considerations of risk-adjusted cancer screening within an evidence-based collaborative framework.

**References**

- Carle C, Velentzis LS, Nickson C. BreastScreen Australia national data by factors of interest for risk-based screening: routinely reported data and opportunities for enhancement. *Aust N Z J Public Health*. 2022 Apr;46(2):230–236. <https://doi.org/10.1111/1753-6405.13203>. Epub 2022 Feb 3.

2. Velentzis LS, Freeman V, Campbell D, Hughes S, Luo Q, Steinberg J, Egger S, Mann GB, Nickson C. Breast Cancer Risk Assessment Tools for Stratifying Women into Risk Groups: A Systematic Review. *Cancers (Basel)*. 2023 Feb 9;15(4):1124. doi: <https://doi.org/10.3390/cancers15041124>.

3. The Daffodil Centre (2023). The ROSA Project—summary. Summary of ‘Roadmap for Optimising Screening in Australia—Breast’, investigating risk-based breast cancer screening. Produced by the Daffodil Centre on behalf of Cancer Council Australia. [www.cancer.org.au/go/rosabreast](http://www.cancer.org.au/go/rosabreast)

Speaker: C. Nickson

Theme: 1. Prevention, screening & early detection

Topic: How to approach and work with the Government

#### 000672 | We can see Australia's future cancer burden up to 2044—Can we reduce it?

Grogan P. \* (1)

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**Background and context:** In 2022, the Daffodil Centre published the most detailed ever projections of Australian cancer burden, by cancer type, predicting more than 4.5 million total cases and 1.45 million deaths from 2020 to 2044—if nothing changes. This followed a 1996–2015 retrospective showing 107,000 lives were saved over that period due to policy reform, mainly in early detection and prevention. The data often features in media articles and sets a unique baseline with short- and long-term goals for evidence-based advocacy.

**Aim:** This presentation aims to show how patterns in cancer outcomes have been affected by policy and practice and how past and future trends are informing proactive advocacy approaches to reducing cancer burden. It includes key successes and analysis of priority areas, such as increased rates of obesity-related cancers and liver cancer burden.

**Strategy/tactics:** The “big numbers” in these studies and related peer-reviewed papers are increasingly positioned strategically to provide compelling reasons for governments to invest in cancer control reform, most of which delivers long-term benefits.

**Programme/Policy:** As highlighted in the presentation, political discourse in Australia in key areas of policy change increasingly draws on population data to highlight cancer control “best buys”. Yet much more could be done. For example, our projections show the biggest measurable improvements will be reduced lung cancer and melanoma mortality in men, through current and prior investment in prevention. Greater investment would deliver greater benefits.

**Process:** Independent peer-reviewed research, including projections and related studies, has been integrated with advocacy to drive cancer control reform through a range of processes. These include direct advocacy via processes such as public consultations and government budget setting, and research commissioned by governments but delivered and published independently.

**Outcomes:** Over the past 2 years, Australian governments have committed to introducing lung cancer screening, eliminating cervical cancer by 2035, reviews of breast and bowel cancer screening policies and implementing a new national tobacco strategy. Public officials have cited long-term projections to support their decisions, in ways that are changing the cancer narrative and highlighting the longer-term benefits of effective cancer control policy.

**What was learned:** A snapshot of recent political commitments to cancer control indicate a trend towards recognising the value of investing now in long-term improvements, measurable in incidence and mortality rates. Our research also shows that current cancer control efforts will need to be strengthened significantly to bring about major reductions in predicted cancer burden.

#### References

Wade S, Weber MF, Sarich P, Caruana M, Watts C, Vanekova P, Ngo P, Cressman S, Scoll M, Banks E, Gartner CE, Grogan PB, Blakely T, Tammemagi MC, Canfell K. Fifty-year forecasts of daily smoking prevalence: can Australia reach 5% by 2030? *Tob Control*. 2023 May 22:tc-2022-057624. doi: <https://doi.org/10.1136/tc-2022-057624>. Epub ahead of print. PMID: 37217260., Luo Q, Steinberg J, O'Connell DL, Grogan PB, Canfell K, Feletto E. Changes in cancer incidence and mortality in Australia over the period 1996–2015. *BMC Res Notes*. 2020 Dec 10;13(1):561. doi: <https://doi.org/10.1186/s13104-020-05395-6>. PMID: 33303018; PMCID: PMC7726606., Luo Q, O'Connell DL, Yu XQ, Kahn C, Caruana M, Pesola F, Sasieni P, Grogan PB, Aranda S, Cabasag CJ, Soerjomataram I, Steinberg J, Canfell K. Cancer incidence and mortality in Australia from 2020 to 2044 and an exploratory analysis of the potential effect of treatment delays during the COVID-19 pandemic: a statistical modelling study. *Lancet Public Health*. 2022 Jun;7(6):e537-e548. doi: [https://doi.org/10.1016/S2468-2667\(22\)00090-1](https://doi.org/10.1016/S2468-2667(22)00090-1). Erratum in: *Lancet Public Health*. 2022 Nov;7(11):e895. PMID: 35660215; PMCID: PMC9159737.

Speaker: P. Grogan

Theme: 1. Prevention, screening & early detection

Topic: Evidence to practice—successes and gaps

#### 000700 | Cancer Council Australia's physical inactivity policy

Machalias A. (1); Mcatamney A. (1); Lynch B. (2); Buchanan, T. (1); Varlow M. \* (1)

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**Background and context:** Emerging evidence has revealed that prolonged periods of sedentary behaviour is associated with an elevated susceptibility to developing 13 different types of cancer, including colon, endometrial, head and neck, gastric and liver cancers. Prioritising investment in physical activity promotion may facilitate a reduction in the site-specific cancer burden associated with sedentary behaviour.<sup>1</sup>

**Aim:** To address the association between physical inactivity and increased cancer risk.

**Strategy/tactics:** Cancer Council Australia publishes policy to provide direction to government and support accountability and builds advocacy activity to prosecute our policy priorities.

**Programme/Policy:** Cancer Council Australia developed the *Physical Inactivity and Cancer Risk* policy to present comprehensive, evidence-based interventions and policy initiatives to create supportive environments for Australians to increase participation in physical activity with a focus on mitigating risk of cancer and other chronic diseases.

**Process:** Several literature reviews guided the development of this policy, and the priorities were refined following consultation with individuals, committees and organisations with expertise in physical inactivity and attributable cancer risk. Policy options underwent external review prior to approval.

**Outcomes:** Successfully combatting physical inactivity requires coordinated action across various levels including within the individual, interpersonal, community and policy, and societal domains. Four overarching priority areas were identified: (1) Infrastructure and policy development which alter the physical environment and foster active transportation; (2) Promotion of Australia's physical activity and sedentary behaviour guidelines for all ages; (3) Enhancing and updating national data collection on physical activity among children; (4) Promotion of intersectoral engagement and strategic partnerships for comprehensive physical activity promotion.

**What was learned:** The promotion of physical activity should intersect across multiple levels of influence to effectively support physical activity participation among Australians for the purpose of cancer and chronic disease prevention. Increasing participation in physical activity by a modest amount (40 minutes per week) can result in the prevention of certain types of cancer and chronic diseases.<sup>1</sup>

## References

- Ellis, L., Milne, R. L., Moore, M. M., Bigby, K. J., Sinclair, C., Brenner, D. R., Moore, S. C., Matthews, C. E., Bassett, J. K., & Lynch, B. M. (2023). Estimating cancers attributable to physical inactivity in Australia. *Journal of science and medicine in sport*, S1440-2440(23)00514-5. Advance online publication. <https://doi.org/10.1016/j.jsams.2023.12.002>

Speaker: M. Varlow

Theme: 1. Prevention, screening & early detection

Topic: Policy development in cancer prevention

## 000723 | Joint cancer-specific PRS with risks of all-cause mortality and all-site cancers, and potential modification by comprehensive lifestyles: A large prospective cohort study in the UK Biobank

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**Background:** Polygenic risk scores (PRS) are widely used to identify genetically high-risk populations for specific diseases.

**Aim:** It is unclear whether joint cancer-specific PRS (CA-PRS) associated with increased risks of all-site cancers, and even increased risk of all-cause mortality. It is also unclear whether healthy lifestyles could attenuate the increased risk.

**Methods:** Associations of joint CA-PRS for breast, colorectum, and prostate cancer (1 score for one high CA-PRS) with risks of all-cause mortality, all-site cancers and site-specific cancers were evaluated among 486,121 participants from the UK Biobank cohort. Subgroup and joint analyses were conducted to investigate the associations modulated by comprehensive lifestyles. Stratified non-linear Cox regression was used to determine risk-adapted starting age for joint intervention on outcomes by score of joint CA-PRS.

**Results:** Risks of all-cause mortality, all-site cancers, and site-specific cancers significantly increased with scores of joint CA-PRS in dose-response trends, and the highest hazard ratios [HRs (95% CI)] were 1.30 (1.17–1.44), 1.75 (1.64–1.87) and 3.01 (2.74–3.31), respectively. Subgroup analyses showed similar dose-response association trends within different comprehensive lifestyles. Joint analyses showed obvious interaction between high joint CA-PRS and unfavorable lifestyle, and the highest HRs (95% CI) of three outcomes increased to 3.09 (2.27–4.20), 2.36 (1.86–2.98) and 3.99 (2.86–5.58). Furthermore, risk-adapted starting ages for joint intervention on three outcomes among population with three high CA-PRS were 54, 51 and 42 years old, which were 4–16 years earlier than those without any high CA-PRS. Similar trends of risk-adapted starting ages were observed within different comprehensive lifestyles, however, the difference in starting ages for the joint intervention on site-specific cancers increased to 18 years.

**Conclusion:** High joint CA-PRS significantly associated with increased risks of site-specific cancers, and even increased risks of all-cause mortality, all-site cancers, and joint intervention on mortality reduction and cancer prevention based on favorable lifestyle and earlier starting age should be recommended.

## References

58. Liu PH, Wu K, Ng K, Zauber AG, Nguyen LH, Song M, et al. Association of Obesity With Risk of Early-Onset Colorectal Cancer Among Women. *JAMA oncology*. 2019;5(1):37–44., 57. Zheng X, Hur J, Nguyen LH, Liu J, Song M, Wu K, et al. Comprehensive Assessment of Diet Quality and Risk of Precursors of Early-Onset Colorectal Cancer. *Journal of the National Cancer Institute*. 2021;113(5):543–52., 56. Wang K, Ma W, Wu K, Ogino S, Giovannucci EL, Chan AT, et al. Long-Term Colorectal Cancer Incidence and Mortality After Colonoscopy Screening According to Individuals' Risk Profiles. *Journal of the National Cancer Institute*. 2021;113(9):1177–85., 55. Oeffinger KC, Fontham ET, Etzioni R, Herzig A, Michaelson JS, Shih YC, et al. Breast Cancer Screening for Women at Average Risk: 2015 Guideline Update From the American Cancer Society. *Jama*. 2015;314(15):1599–614., 54. Wolf AMD, Fontham ETH, Church TR, Flowers CR, Guerra CE, LaMonte SJ, et al. Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. *CA Cancer J Clin*. 2018;68(4):250–81., 53. Donehower LA, Soussi T, Korkut A, Liu Y, Schultz A, Cardenas M, et al. Integrated Analysis of TP53 Gene and Pathway Alterations in The Cancer Genome Atlas. *Cell reports*.

- 2019;28(5):1370-84.e5., 52. Kim JE, Choi J, Sung CO, Hong YS, Kim SY, Lee H, et al. High prevalence of TP53 loss and whole-genome doubling in early-onset colorectal cancer. *Experimental & molecular medicine.* 2021;53(3):446-56., 51. Maxwell KN, Cheng HH, Powers J, Gulati R, Ledet EM, Morrison C, et al. Inherited TP53 Variants and Risk of Prostate Cancer. *Eur Urol.* 2022;81(3):243-50., 50. Shahbandi A, Nguyen HD, Jackson JG. TP53 Mutations and Outcomes in Breast Cancer: Reading beyond the Headlines. *Trends in cancer.* 2020;6(2):98-110., 49. Grassmann F, Kiel C, Zimmermann ME, Gorski M, Grassmann V, Stark K, et al. Genetic pleiotropy between age-related macular degeneration and 16 complex diseases and traits. *Genome medicine.* 2017;9(1):29., 48. Rafnar T, Gunnarsson B, Stefansson OA, Sulem P, Ingason A, Frigge ML, et al. Variants associating with uterine leiomyoma highlight genetic background shared by various cancers and hormone-related traits. *Nat Commun.* 2018;9(1):3636., 47. Morton SU, Shimamura A, Newburger PE, Opotowsky AR, Quiat D, Pereira AC, et al. Association of Damaging Variants in Genes With Increased Cancer Risk Among Patients With Congenital Heart Disease. *JAMA Cardiol.* 2021;6(4):457-62., 46. Rafnar T, Sulem P, Stacey SN, Geller F, Gudmundsson J, Sigurdsson A, et al. Sequence variants at the TERT-CLPTM1L locus associate with many cancer types. *Nat Genet.* 2009;41(2):221-7., 45. Consortium TBCL. Cancer Risks in BRCA2 Mutation Carriers. *JNCI: Journal of the National Cancer Institute.* 1999;91(15):1310-6., 44. Karami S, Han Y, Pande M, Cheng I, Rudd J, Pierce BL, et al. Telomere structure and maintenance gene variants and risk of five cancer types. *Int J Cancer.* 2016;139(12):2655-70., 43. Cheng I, Kocarnik JM, Dumitrescu L, Lindor NM, Chang-Claude J, Avery CL, et al. Pleiotropic effects of genetic risk variants for other cancers on colorectal cancer risk: PAGE, GECCO and CCFR consortia. *Gut.* 2014;63(5):800-7., 42. Long MD, Martin CF, Galanko JA, Sandler RS. Hormone replacement therapy, oral contraceptive use, and distal large bowel cancer: a population-based case-control study. *The American journal of gastroenterology.* 2010;105(8):1843-50., 41. Kennelly R, Kavanagh DO, Hogan AM, Winter DC. Oestrogen and the colon: potential mechanisms for cancer prevention. *Lancet Oncol.* 2008;9(4):385-91., 40. Honma N, Yamamoto K, Ohnaka K, Morita M, Toyomura K, Kono S, et al. Estrogen receptor- $\beta$  gene polymorphism and colorectal cancer risk: effect modified by body mass index and isoflavone intake. *Int J Cancer.* 2013;132(4):951-8., 39. Tang L, Platek ME, Yao S, Till C, Goodman PJ, Tangen CM, et al. Associations between polymorphisms in genes related to estrogen metabolism and function and prostate cancer risk: results from the Prostate Cancer Prevention Trial. *Carcinogenesis.* 2018;39(2):125-33., 38. Robles-Fernandez I, Martinez-Gonzalez LJ, Pascual-Geler M, Cozar JM, Puche-Sanz I, Serrano MJ, et al. Association between polymorphisms in sex hormones synthesis and metabolism and prostate cancer aggressiveness. *PloS one.* 2017;12(10):e0185447., 37. Tang L, Yao S, Till C, Goodman PJ, Tangen CM, Wu Y, et al. Repeat polymorphisms in estrogen metabolism genes and prostate cancer risk: results from the Prostate Cancer Prevention Trial. *Carcinogenesis.* 2011;32(10):1500-6., 36. Wiggins GAR, Black MA, Dunbier A, Merriman TR, Pearson JF, Walker LC. Variable expression quantitative trait loci analysis of breast cancer risk variants. *Scientific reports.* 2021;11(1):7192., 35. Artigalás O, Vanni T, Hutz MH, Ashton-Prolla P, Schwartz IV. Influence of CYP19A1 polymorphisms on the treatment of breast cancer with aromatase inhibitors: a systematic review and meta-analysis. *BMC medicine.* 2015;13:139., 34. Treeck O, Elemenler E, Kriener C, Horn F, Springwald A, Hartmann A, et al. Polymorphisms in the promoter region of ESR2 gene and breast cancer susceptibility. *The Journal of steroid biochemistry and molecular biology.* 2009;114(3-5):207-11., 33. Yager JD, Davidson NE. Estrogen carcinogenesis in breast cancer. *The New England journal of medicine.* 2006;354(3):270-82., 32. Zhang YD, Hurson AN, Zhang H, Choudhury PP, Easton DF, Milne RL, et al. Assessment of polygenic architecture and risk prediction based on common variants across fourteen cancers. *Nat Commun.* 2020;11(1):3353., 31. Shams-White MM, Brockton NT, Mitrou P, Romaguera D, Brown S, Bender A, et al. Operationalizing the 2018 World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) Cancer Prevention Recommendations: A Standardized Scoring System. *Nutrients.* 2019;11(7), 30. Thompson D, Wells D, Selzam S, Peneva I, Moore R, Sharp K, et al. UK Biobank release and systematic evaluation of optimised polygenic risk scores for 53 diseases and quantitative traits. *medRxiv;* 2022., 29. Sudlow C, Gallacher J, Allen N, Beral V, Burton P, Danesh J, et al. UK biobank: an open access resource for identifying the causes of a wide range of complex diseases of middle and old age. *PLoS Med.* 2015;12(3):e1001779., 28. Fry A, Littlejohns TJ, Sudlow C, Doherty N, Adamska L, Sprosen T, et al. Comparison of Sociodemographic and Health-Related Characteristics of UK Biobank Participants With Those of the General Population. *Am J Epidemiol.* 2017;186(9):1026-34., 27. Siu AL. Screening for Breast Cancer: U.S. Preventive Services Task Force Recommendation Statement. *Annals of internal medicine.* 2016;164(4):279-96., 26. Grossman DC, Curry SJ, Owens DK, Bibbins-Domingo K, Caughey AB, Davidson KW, et al. Screening for Prostate Cancer: US Preventive Services Task Force Recommendation Statement. *Jama.* 2018;319(18):1901-13., 25. Davidson KW, Barry MJ, Mangione CM, Cabana M, Caughey AB, Davis EM, et al. Screening for Colorectal Cancer: US Preventive Services Task Force Recommendation Statement. *Jama.* 2021;325(19):1965-77., 24. Krist AH, Davidson KW, Mangione CM, Barry MJ, Cabana M, Caughey AB, et al. Screening for Lung Cancer: US Preventive Services Task Force Recommendation Statement. *Jama.* 2021;325(10):962-70., 23. Chen X, Heisser T, Cardoso R, Hoffmeister M, Brenner H. Personalized Initial Screening Age for Colorectal Cancer in Individuals at Average Risk. *JAMA Netw Open.* 2023;6(10):e2339670., 22. Tian Y, Kharazmi E, Brenner H, Xu X, Sundquist K, Sundquist J, et al. Calculating the Starting Age for Screening in Relatives of Patients With Colorectal Cancer Based on Data From Large Nationwide Data Sets. *Gastroenterology.* 2020;159(1):159-68.e3., 21. Jeon J, Du M, Schoen RE, Hoffmeister M, Newcomb PA, Berndt SI, et al. Determining Risk of Colorectal Cancer and Starting Age of Screening Based on Lifestyle, Environmental, and Genetic Factors. *Gastroenterology.* 2018;154(8):2152-64.e19., 20. Kachuri L, Graff RE, Smith-Byrne K, Meyers TJ, Rashkin SR, Ziv E, et al. Pan-cancer analysis demonstrates that integrating polygenic risk scores with modifiable risk factors improves risk

- prediction. *Nat Commun.* 2020;11(1):6084., 19. Plym A, Zhang Y, Stopsack KH, Delcoigne B, Wiklund F, Haiman C, et al. A Healthy Lifestyle in Men at Increased Genetic Risk for Prostate Cancer. *Eur Urol.* 2023;83(4):343–51., 18. Al Ajmi K, Lophatananon A, Mekli K, Ollier W, Muir KR. Association of Nongenetic Factors With Breast Cancer Risk in Genetically Predisposed Groups of Women in the UK Biobank Cohort. *JAMA Netw Open.* 2020;3(4):e203760., 17. Recalde M, Davila-Batista V, Díaz Y, Leitzmann M, Romieu I, Freisling H, et al. Body mass index and waist circumference in relation to the risk of 26 types of cancer: a prospective cohort study of 3.5 million adults in Spain. *BMC medicine.* 2021;19(1):10., 16. Friedenreich CM, Ryder-Burbridge C, McNeil J. Physical activity, obesity and sedentary behavior in cancer etiology: epidemiologic evidence and biologic mechanisms. *Molecular oncology.* 2021;15(3):790–800., 15. Gallagher EJ, LeRoith D. Obesity and Diabetes: The Increased Risk of Cancer and Cancer-Related Mortality. *Physiological reviews.* 2015;95(3):727–48., 14. Molina-Montes E, Ubago-Guisado E, Petrova D, Amiano P, Chirlaque MD, Agudo A, et al. The Role of Diet, Alcohol, BMI, and Physical Activity in Cancer Mortality: Summary Findings of the EPIC Study. *Nutrients.* 2021;13(12)., 13. Rungay H, Shield K, Charvat H, Ferrari P, Sompaisarn B, Obot I, et al. Global burden of cancer in 2020 attributable to alcohol consumption: a population-based study. *Lancet Oncol.* 2021;22(8):1071–80., 12. Chan KH, Wright N, Xiao D, Guo Y, Chen Y, Du H, et al. Tobacco smoking and risks of more than 470 diseases in China: a prospective cohort study. *The Lancet Public health.* 2022;7(12):e1014–e26., 10. Sato G, Shirai Y, Namba S, Edahiro R, Sonehara K, Hata T, et al. Pan-cancer and cross-population genome-wide association studies dissect shared genetic backgrounds underlying carcinogenesis. *Nat Commun.* 2023;14(1):3671., 11. Huang Y, Lyu Z, Zhang Y, Liu X, Zhang Y, Liu Y, et al. Cohort profile: design and methods of the Chinese colorectal, breast, lung, liver, and stomach cancer screening trial (C-BLAST). *Cancer biology & medicine.* 2023;20(10):713–20., 9. Graff RE, Cavazos TB, Thai KK, Kachuri L, Rashkin SR, Hoffman JD, et al. Cross-cancer evaluation of polygenic risk scores for 16 cancer types in two large cohorts. *Nat Commun.* 2021;12(1):970., 8. Jiang X, Finucane HK, Schumacher FR, Schmit SL, Tyrer JP, Han Y, et al. Shared heritability and functional enrichment across six solid cancers. *Nat Commun.* 2019;10(1):431., 7. Hanahan D, Weinberg RA. Hallmarks of cancer: the next generation. *Cell.* 2011;144(5):646–74., 6. Fritzsche LG, Gruber SB, Wu Z, Schmidt EM, Zawistowski M, Moser SE, et al. Association of Polygenic Risk Scores for Multiple Cancers in a Phenome-wide Study: Results from The Michigan Genomics Initiative. *American journal of human genetics.* 2018;102(6):1048–61., 5. Huang Y, Zhu M, Ji M, Fan J, Xie J, Wei X, et al. Air Pollution, Genetic Factors, and the Risk of Lung Cancer: A Prospective Study in the UK Biobank. *American journal of respiratory and critical care medicine.* 2021;204(7):817–25., 4. Briggs SEW, Law P, East JE, Wordsworth S, Dunlop M, Houlston R, et al. Integrating genome-wide polygenic risk scores and non-genetic risk to predict colorectal cancer diagnosis using UK Biobank data: population based cohort study. *BMJ (Clinical research ed).* 2022;379:e071707., 3. Yang Y, Tao R, Shu X, Cai Q, Wen W, Gu K, et al. Incorporating Polygenic Risk Scores and Nongenetic Risk Factors for Breast Cancer Risk Prediction Among Asian Women. *JAMA Netw Open.* 2022;5(3):e2149030., 2. Jin G, Lv J, Yang M, Wang M, Zhu M, Wang T, et al. Genetic risk, incident gastric cancer, and healthy lifestyle: a meta-analysis of genome-wide association studies and prospective cohort study. *Lancet Oncol.* 2020;21(10):1378–86., 1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin.* 2021;71(3):209–49.
- Speaker:** Y. Huang  
**Theme:** 1. Prevention, screening & early detection  
**Topic:** Epidemiology
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- 000740 | Long-term risks of progression and mortality associated with gastric cancer following initial endoscopy diagnosis: A multicentre population-based cohort study**
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- He S. \* (1); Chen W. (1)  
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- Background:** Endoscopy surveillance is recommended for low-grade intraepithelial neoplasia (LGD) and severe gastric atrophy (GA) and/or intestinal metaplasia (IM) every 1 year and 3 years, respectively, but high-quality evidence is limited. The progression risk towards gastric cancer (GC) and the GC risk duration of negative endoscopy findings also remain unclear.
- Aim:** This study aimed to assess long-term GC incidence and mortality of each lesion after a single endoscopy screening.
- Methods:** We included individuals at high risk of GC aged 40–69 years who underwent baseline endoscopy screening in 2012–2018 at nine centres in rural China and had a baseline diagnosis of negative endoscopy findings (including normal gastric mucosa and nonatrophic gastritis), GA and/or IM (classified as mild-moderate and severe level), and LGD. Participants were followed up for GC incidence and mortality until December 31, 2022. We used Kaplan–Meier curves to calculate cumulative incidence and mortality rates of GC, and Cox regression analysis to estimate hazard ratios (HRs) and corresponding 95% confidence intervals (CIs) for associations between baseline endoscopy diagnosis and the risk of GC incidence and mortality. GC incidence and mortality after a single endoscopy screening were further compared with those of the rural China residents by the standardized incidence ratio (SIR) and standardized mortality ratio (SMR).
- Results:** A total of 51,496 participants (40,383 with negative endoscopy findings, 8041 with mild-moderate GA and/or IM, 1203 with severe GA and/or IM, and 1869 with LGD) were included; 186 GC cases and 77 GC deaths were identified during a median follow-up of 7.36 years. The cumulative GC incidence at 10 years was 0.39% (0.31–0.47) in the group with negative endoscopy findings, 0.79% (0.53–1.04) in the mild-moderate GA and/or IM group, 3.97% (2.41–5.52) in the severe GA and/or IM group, and 2.74% (1.76–3.72) in the LGD group, and the cumulative GC mortality at 10 years was 0.18% (0.13–0.24), 0.39% (0.21–0.58), 0.95% (0.19–1.71), and 0.64%

(0.17–1.11), respectively. Compared with individuals with negative endoscopy findings, the HRs for GC incidence and mortality in the mild-moderate GA and/or IM group were 1.39 (0.90–2.15) and 1.55 (0.85–2.84), in the severe GA and/or IM group were 6.82 (4.24–10.96) and 2.72 (0.98–7.59), and those in the LGD group were 5.86 (3.87–8.87) and 2.42 (1.03–5.69), respectively. The SIR was 4.17 (3.37–5.09) for the group with negative endoscopy findings, 6.75 (4.74–9.34) for the mild-moderate GA and/or IM group, 31.68 (20.53–46.63) for the severe GA and/or IM group, and 22.33 (15.08–31.81) for the moderate dysplasia group, with the SMRs of 3.15 (2.30–4.21), 5.59 (3.37–8.69), 12.02 (4.40–25.64), and 8.10 (3.26–16.41), respectively.

**Conclusion:** Individuals with negative endoscopy findings after a single endoscopy screening had a higher GC risk than the general population for up to 10.94 years. Our results suggest surveillance for high-risk individuals 10 years after baseline endoscopy even with negative diagnosis.

#### References

- He J, Chen W, Li Z, et al. China guideline for the screening, early detection and early treatment of gastric cancer (2022, Beijing)[J]. Chin J Oncol. 2022; 44(07):634–666., Liou JM, Malfertheiner P, Lee YC, et al. Screening and eradication of Helicobacter pylori for gastric cancer prevention: the Taipei global consensus[J]. Gut. 2020;69 (12):2093–2112., Pimentel-Nunes P, Libâo D, Marcos-Pinto R, et al. Management of epithelial precancerous conditions and lesions in the stomach (MAPS II): European Society of Gastrointestinal Endoscopy (ESGE), European Helicobacter and Microbiota Study Group (EHMSG), European Society of Pathology (ESP), and Sociedade Portuguesa de Endoscopia Digestiva (SPED) guideline update 2019 [J]. Endoscopy. 2019 Apr;51(4):365–388.

Speaker: S. He

Theme: 1. Prevention, screening & early detection

Topic: Epidemiology

#### 000741 | ‘Our business’: Developing and implementing a digital social media campaign to improve HPV vaccination rates for Aboriginal and/Torres Strait Islander young people

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(1) Edith Cowan University, Perth, Australia; (2) Curtin University, Bentley, Australia; (3) Aboriginal Health Council of Western Australia, Highgate, Australia; (4) DeeBlanche, Amsterdam, Netherlands

**Background:** Young Aboriginal and Torres Strait Islander (Aboriginal) people do not receive their HPV vaccine dose, resulting in missed opportunities to be protected from HPV-related cancers. Health promotion is a critical way to empower people to take ownership over and control their health with social media platforms becoming an important avenue for delivering health messages, especially for young people. Aboriginal adolescents have strong engagement with social media platforms. A novel way to improve HPV vaccination rates is to co-create health promotion messages with Aboriginal young people to be delivered by local ‘micro-Influencers’ on social media platforms.

**Aim:** This presentation aims to discuss the process of developing the social media campaign for young Aboriginal people called ‘Our Business’.

**Methods:** To develop the ‘Our Business’ brand, we worked with a boutique marketing agency that specialises in developing and rolling out campaign brands for fashion and hospitality, and who have a unique understanding of the social media habits of Generation Z. We also collaborated with our HPV Aboriginal Advisory Group and Aboriginal Content and Strategy Advisor, Nooky (<https://www.wearewarriors.com.au/our-warriors/nooky>), to inform the process of developing the brand. We interviewed young Aboriginal people ( $n = 60$ ) and their families ( $n = 22$ ) to determine their knowledge and understanding of HPV and the vaccine, and how they use social media. This information helped to inform the brand, what health promotion messages were needed to be delivered and which micro-influencers would be ideal to deliver the campaign. We worked with 15 Aboriginal micro-Influencers who created content for the campaign.

**Results:** Our campaign is currently being rolled out to coincide with the HPV vaccination schedule in schools in Perth, Western Australia. As of the 30 March, our Influencers have released 22 content videos on Instagram and TikTok. Within a week of content being released by Influencers, views ranged from 643 to 59,875.

**Conclusion:** To determine the effectiveness of the campaign, we will be investigating the changes in HPV vaccination rates through a controlled interrupted time series analysis. Data from Influencers and ‘Our Business’ social media pages will help to determine the reach and acceptability of our campaign.

Speaker: N. Strobel

Theme: 1. Prevention, screening & early detection

Topic: Using media to achieve public health objectives

#### 000749 | Improving screening service access and utilization: Integrating cervical cancer screening across healthcare service delivery platforms in Kenya

Osiro L. \* (1); Mwenda V. (2); Nthusa B. (2); Bor, J.-P. (2); Genga L. (2); Omondi V. (1); NJIRI P. (1)

(1) Clinton Health Access Initiative, Nairobi, Kenya; (2) Ministry Of Health, Nairobi, Kenya

**Background and context:** Previously, Maternal and Child Health/Family Planning (MCH/FP) and Comprehensive Care (CC) clinics have operated independently, leading to fragmented care delivery and missed opportunities for synergy, resulting in resource utilization inefficiencies and ineffectiveness at Service Delivery Points (SDPs). Only 8% of MCH/FP clinics offered both breast cancer and cervical cancer (CaCx) screening alongside routine services, while 20% of CC clinics provided ART services alongside screening for both cancers. The integration of CaCx screening into existing healthcare services at MCH/FP and CC clinics shows promise in improving efficiency in service delivery and addressing disparities in access and utilization of

care. A collaborative project between the NCCP and CHAI aims to accelerate CaCx screening services by emphasizing the integration of services for enhanced effectiveness.

**Aim:** To explore the potential of integrated services and identify concrete ways healthcare service providers can harness this potential to improve women's health.

**Strategy/tactics:** Implementation targeted over 6000 service providers across 3200 health facilities, working in MCH/FP and CC clinics in 25 focus regions.

**Programme/Policy:** Broadly, policy support enhances integration and facilitates ongoing monitoring evaluation and quality improvement efforts. Lastly, securing sustainable financing initiatives through effective collaboration and partnerships.

**Process:** Training sessions were conducted to integrate CaCx and breast cancer screening into routine services at these SDPs, equipping health facilities with the necessary Health Products and Technologies (HPTs) to facilitate service delivery. In addition, trainings emphasized community awareness, leveraging initiatives of existing routine services at the SDPs e.g., referral, follow-up networks and linkage pathways.

**Outcomes:** Since inception, there has been a profound and remarkable impact on women's access to comprehensive services, including breast and CaCx screenings during a single routine visit. The statistics have increased significantly from 38,433 out of 462,075 (8%) in 2020 to 528,121 out of 660,202 (80%) in 2023. With 6238 service providers trained and deployed across MCH/FP and CC clinics, integrated screening services are now accessible at 3120 sites, representing 97% of the targeted locations.

**What was learned:** They have the potential to revolutionize cancer prevention and early detection in low-resource settings. This multifaceted approach to integrating CaCx screening into existing healthcare services could be a game-changer for women's health access and utilization.

Speaker: L. Osiro

Theme: 1. Prevention, screening & early detection

Topic: Integrating cancer and NCDs into existing services, health systems strengthening, and patient empowerment

#### 000758 | Enhancing access to quality treatment for pre-cancerous lesions in Kenya: The impact of post-training mentorship in thermal ablation and LEEP procedures

Osiro L. \* (1); NJIRI P. (1); Nthusa B. (2); Bor, J.-P. (2); Mwenda V. (2); Omondi V. (1)

(1) Clinton Health Access Initiative, Nairobi, Kenya; (2) Ministry Of Health, Nairobi, Kenya

**Background and context:** Against a backdrop of facility treatment capacity coverage of 2% and PCL treatment rates at 6%, the Ministry of Health (MOH) identified an urgent need to enhance treatment using innovative technologies. The technologies offer promising solutions for managing Pre-Cancerous Lesions (PCLs), providing minimally invasive techniques to eliminate abnormal cervical tissues. The study underscores the crucial role of post-training mentorship and follow-up

in optimizing access and treatment outcomes, a critical aspect that has been largely overlooked.

**Aim:** To focus on the impact of post-training mentorship in thermal Ablation (TA) and Loop Electrosurgical Excision Procedure (LEEP) in treating PCLs.

**Strategy/tactics:** It involved training Service Providers (SPs) and equipping facilities across 25 counties with TA and LEEP devices. While technical knowledge is crucial, the ability to accurately identify lesions, make prompt decisions, offer appropriate treatment options, and provide post-treatment care is equally vital. Mentorship emerged as a cornerstone for success in accessing quality treatment for women.

**Programme/Policy:** PCL lesions must be treated using cryotherapy, thermal Ablation, or LEEP.

**Process:** The mentorship initiatives were executed flawlessly and reached over 2000 service providers in approximately 900 facilities across 25 targeted counties. Master trainers were pivotal in guiding service providers in mentorship centers and focusing on refining and retaining procedural techniques to ensure personalized care. The use of mentorship logbooks, tailored maturity models, and hands-on training sessions enabled the identification of improvement areas and significantly enhanced the effectiveness of the mentorship process.

**Outcomes:** Post-mentorship, SPs' ability to correctly identify PCLs surged from an initial 20% to over 70%. Facilities offering PCL treatment experienced remarkable growth, from a mere 2% (214/3200) to 33% (1064/3200), reflecting a 31% increase in coverage. Similarly, the coverage for women with PCL accessing treatment grew from 6% to 34% after the mentorship phase: mentorship and follow-up promises to amplify these results further.

**What was learned:** Continuous mentorship emerges as a game-changer, enriching skills, ensuring tailored care, and adeptly addressing post-procedure challenges. While TA and LEEP showcase promising safety profiles, potential complications necessitate a prepared healthcare workforce. Embedding mentorship within the training matrix promises superior PCL care, fostering patient well-being and oncological advancements.

Speaker: L. Osiro

Theme: 1. Prevention, screening & early detection

Topic: Integration of new technologies into cancer control strategies

#### 000769 | Delays in the presentation, proper diagnosis and initiation of treatment in Breast Cancer achieves low outcome in India

Mukherjee A. \* (1); Nag B. (1); Mukhopadhyay, S. (1); Das S. (1)

(1) Netaji Subhas Chandra Bose Cancer Hospital, Kolkata, India

**Background:** Worldwide, breast cancer is the commonest cancer. In India, 1 in every 22 women develops breast cancer in her life time and 1 patient in every 8 minutes dies of disease. The incidence and death rate are increasing day by day in India when compared to the western countries. 5 year overall survival is 66% in India whereas it's more

than 85% in North America irrespective of stages. Causes of delay in presentation of breast cancer and high attrition towards the quacks and alternative medicine are hurdles in achieving the expected outcome.

**Aim:** To assess whether the delays in presentation, diagnosis and initiation of treatment, have adverse effect on the low outcome of breast cancer patients in India.

**Methods:** Causes of delay in presentation of breast cancer have been categorised into "Primary Delay" (delay by the patient/family); "Secondary Delay" (delay by family physician or quacks/alternative medicine practitioners); "Tertiary Delay" (delay in a specialist breast care unit) and "Quaternary Delay" (patient hopping from one competent breast cancer specialist to another). We performed a retrospective observational study, based on "Triple Assessment" and pre-structured Questionnaire. All pathologically confirmed breast cancer patients admitted from February, 2022 to January, 2024 in Netaji Subhas Chandra Bose Cancer Hospital, Kolkata, India were included. We excluded Male breast cancer. Chi-square test and Fisher's exact test for categorical variables, and Student's unpaired 't' test and Mann-Whitney's test were used.

**Results:** Data from 198 patients (Mean age  $48.28 \pm 7.33$ ) was analysed. Average delay between onset of the first symptom and histological diagnosis was  $11.33 \pm 5.24$  months. About 51% patients visited the non-modern medical practitioners at least once during their disease. The mean delay in diagnosis ( $8.77 \pm 6.39$  months) was significantly higher ( $p < 0.001$ ) among them. The average delay between the visit to the first doctor and the histological diagnosis was also significantly higher among them ( $19.11 \pm 13.12$  months). Patients with attrition to non-modern medical practitioners also were diagnosed in higher CT stages: cT4b (60%).

**Conclusion:** Factors like lack of awareness, ignorance, social stigma, financial constraints, beliefs like "cutting on a cancer" may cause it to spread, herbal remedies, over-the-counter medications, chiropractic regimens, prayer, and reliance on God to heal the disorder, residence in rural area, fear, embarrassment and shyness about breast as a private organ, false promise by some quacks, Homeopaths, Ayushes and unethical medical practitioners to heal the cancer with alternative medicine only, inability to identify the disease early by untrained doctors, non-adherence to doctor's advice by patients, are significant factors responsible for delayed presentation which lead to advancement of the anatomical staging of the disease. Creating public awareness, proper training and 'continued medical education' for primary care physicians are required.

Speaker: A. Mukherjee

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

## 000772 | Self-perceived risk of cancer in Spain: A quantitative cross-sectional approach

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**Background:** Cancer has emerged as one of the major health concerns in Spain, with increasingly high mortality and incidence figures. This disease is closely associated with easily avoidable risk factors, so the field of prevention has gained importance in recent years.

**Aim:** The main objectives of this study were to identify the variables that influence the most the self-perceived risk of developing cancer among the Spanish population and to explore the main reasons associated with the degree of self-perceived risk.

**Methods:** A telephone survey was conducted in Spain among a representative sample of 4769 men and women aged over 18 years of age between February and September 2020. A questionnaire with an average duration of 15 min was administered, in which questions related to self-perceived cancer risk, knowledge of cancer risk factors, lifestyle habits and attitudes and behaviors in the hypothetical appearance of symptoms were collected. Descriptive and logistic regression analyses have been performed, taking the *Very high or high self-perceived risk of cancer* as dependent variable.

**Results:** There is a considerable degree of awareness in Spain regarding the self-perceived risk of cancer. More than 60% of the participating population believe they have a very high or high risk of being diagnosed at some point in their lives. Having experienced cancer either firsthand or through close family members substantially increased the probability of having a very high or high risk of developing the disease (OR = 3.243 and 3.950, respectively). In addition, other sociodemographic and attitudinal variables have been shown to influence the self-perceived risk of developing cancer.

**Conclusion:** Close experiences with cancer, either one's own or someone else's, have a significant impact on the higher perception of risk of suffering from the disease. In addition, there are other variables related to lifestyle or sociodemographic profile that increase the probability that this perception is higher. It is urgent to propose public policies on prevention to combat cancer disease.

## References

- Vignolo J, Vacarezza M, Álvarez C, Sosa A. Niveles de atención, de prevención y atención primaria de la salud. Archivos de Medicina Interna. 2011 Apr;33(1):7–11., Sanz-Barbero B, Prieto-Flores ME, Otero-García L, Abt-Sacks A, Bernal M, Cambas N. Percepción de los factores de riesgo de cáncer por la población española. Gaceta Sanitaria. 2014 Apr;28(2):137–45. Lee Y. The predictive value of self assessed general, physical, and mental health on functional decline and mortality in older adults. Journal of Epidemiology & Community Health. 2000 Feb 1;54(2):123–9., Alaa H, Azhar Shah S. Perception of Cancer Risk and Its Associated Risk Factors among Young Iraqis living in Baghdad. Asian Pac J Cancer Prev. 2019;20(8):2339–43., Lebrett MB, Crosbie EJ, Yorke J, Hewitt K, Rowlands A, Badrick E, et al. Risk perception and disease knowledge in attendees of a community-based lung cancer screening programme. Lung Cancer. 2022 Jun;168:1–9., Zajac LE, Klein WMP, McCaul KD. Absolute and Comparative Risk Perceptions as Predictors of Cancer Worry: Moderating Effects of Gender and Psychological Distress. Journal of Health Communication. 2006 Feb 1;11(sup001):37–49., Petrova D, Pollán M, Rodríguez-Barranco M, Garrido D, Borrás JM, Sánchez MJ. Anticipated help-seeking for cancer symptoms before and after the coronavirus

pandemic: results from the Onco-barometer population survey in Spain. *Br J Cancer*. 2021 Jun;124(12):2017–25., Petrova D, Pollán M, García-Retamero R, Rodríguez-Barranco M, Catena A, Castillo Portellano L, et al. Cancer awareness in older adults: Results from the Spanish Onco-barometer cross-sectional survey. *International Journal of Nursing Studies*. 2023 Apr 1;140:104466., Sninsky JA, Shore BM, Lupu GV, Crockett SD. Risk Factors for Colorectal Polyps and Cancer. *Gastrointest Endosc Clin N Am*. 2022 Apr;32(2):195–213., Perdana NR, Mochtar CA, Umbas R, Hamid ARA. The Risk Factors of Prostate Cancer and Its Prevention: A Literature Review. *Acta Med Indones*. 2016 Jul;48(3):228–38., Niccoli T, Partridge L. Ageing as a Risk Factor for Disease. *Current Biology*. 2012 Sep 11;22(17):R741–52., Bw W, G K, As P. Geography of non-melanoma skin cancer and ecological associations with environmental risk factors in England. *British journal of cancer* [Internet]. 2013 Sep 7 [cited 2024 Mar 6];109(1). Available from: <https://pubmed.ncbi.nlm.nih.gov/23756856/>, López Salas M, De Haro Gázquez D, Fernández Sánchez B, Amador Muñoz ML. Knowledge, Compliance, and Inequities in Colon Cancer Screening in Spain: An Exploratory Study. *Healthcare*. 2023 Jan;11(18):2475., Issa IA, Noureddine M. Colorectal cancer screening: An updated review of the available options. *World J Gastroenterol*. 2017 Jul 28;23(28):5086–96, Pimple SA, Mishra GA. Global strategies for cervical cancer prevention and screening. *Minerva Ginecol*. 2019 Aug;71(4):313–20., Coleman C. Early Detection and Screening for Breast Cancer. *Semin Oncol Nurs*. 2017 May;33(2):141–55., Lewandowska AM, Lewandowski T, Rudzki M, Rudzki S, Laskowska B. Cancer prevention—review paper. *Ann Agric Environ Med*. 2021 Mar 18;28(1):11–9., Danaei G, Hoorn SV, Lopez AD, Murray CJ, Ezzati M. Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors. *The Lancet*. 2005 Nov 19;366(9499):1784–93., Khan N, Afaq F, Mukhtar H. Lifestyle as risk factor for cancer: evidence from human studies. *Cancer Lett*. 2010 Jul 28;293(2):133–43., Zare Sakhvidi MJ, Lequy E, Goldberg M, Jacquemin B. Air pollution exposure and bladder, kidney and urinary tract cancer risk: A systematic review. *Environ Pollut*. 2020 Dec;267:115328., Huang Y, Zhu M, Ji M, Fan J, Xie J, Wei X, et al. Air Pollution, Genetic Factors, and the Risk of Lung Cancer: A Prospective Study in the UK Biobank. *Am J Respir Crit Care Med*. 2021 Oct 1;204(7):817–25., Pieniak Z, Pérez-Cueto F, Verbeke W. Association of overweight and obesity with interest in healthy eating, subjective health and perceived risk of chronic diseases in three European countries. *Appetite*. 2009 Dec 1;53(3):399–406., Avgerinos KI, Spyrou N, Mantzoros CS, Dalamaga M. Obesity and cancer risk: Emerging biological mechanisms and perspectives. *Metabolism*. 2019 Mar;92:121–35., Kliemann N, Rauber F, Levy RB, Viallon V, Vamos EP, Cordova R, et al. Food processing and cancer risk in Europe: results from the prospective EPIC cohort study. *The Lancet Planetary Health*. 2023 Mar 1;7(3):e219–32., Hendriks HFJ. Alcohol and Human Health: What Is the Evidence? *Annu Rev Food Sci Technol*. 2020 Mar 25;11:1–21., Gandini S, Botteri E, Iodice S, Boniol M, Lowenfels AB, Maisonneuve P, et al. Tobacco smoking and cancer: a meta-analysis. *Int J Cancer*. 2008 Jan 1;122(1):155–64., World Health Organization. Framework and standards for country health information systems

[Internet]. Geneva: World Health Organization; 2012 [cited 2024 Feb 29]. Available from: <https://www.who.int/publications-detail-redirect/9789241595940>, Faury S, Auroret P, Quintard B, Foucaud J. A Systematic Review on Reporting of Methods in National Surveys about Adults' Attitudes to Lifestyle and Environmental Risk Factors for Cancer. *International Journal of Environmental Research and Public Health*. 2023 Jan;20(9):5755., Cancer Today [Internet]. [cited 2024 Mar 6]. Available from: <https://gco.iarc.who.int/today/>, OECD/European Union. *Health at a Glance: Europe 2022. State of Health in the UE Cycle* [Internet]. OECD Publishing. Paris; 2022 [cited 2024 Feb 29]. Available from: <https://doi.org/10.1787/50743b0-en>

Speaker: A. Fernández Marcos

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

#### 000800 | A score-based stratification prediction model for female hepatocellular carcinoma in asymptotic HBsAg carriers based on a multicenter screening cohort in China

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**Background:** Liver cancer is one of the most common malignant tumors in the world and China alone accounts for 53% of all liver cancer deaths worldwide, which shows significant differences between males and females. Currently, several predictive models for hepatocellular carcinoma (HCC) have been developed; however, predictive models based on sex specificity have not yet been established.

**Aim:** To address these gaps, we aimed to construct a score-based HCC prediction model for female hepatitis B surface antigen (HBsAg) carriers.

**Methods:** Participants were recruited from a multicenter, community-based, prospective cohort, from high-risk rural areas in China, including 7084 females aged 35–70 with HBsAg seropositivity for liver cancer screening. Data collection included sociodemographic information, lifestyle factors, and laboratory tests. Univariable logistic regression combined with LASSO regression was used to identify predictive variables for HCC, then the risk scores of each predictor and the score-based prediction models were developed. Model performance was evaluated from discrimination and calibration. 10-fold cross-validation and bootstrap resampling were used for internal validations.

**Results:** After 4 years of follow-up, 6991 female HBsAg-positive individuals were available for final analysis with 145 HCC cases. The HCCF model identified four independent variables: age, α-fetoprotein, albumin, and platelet, achieving an area under the receiver operating characteristic curve (AUC) of 0.80 (95% CI: 0.76–0.84). Incorporating US-detected cirrhosis constituted the HCCF-Enhanced model, yielding an AUC of 0.84 (95% CI: 0.81–0.88). Compared to the screening strategy using AFP test in this cohort, the HCCF model using a cutoff score of 3 and 5 greatly improved the proportion of high-risk individuals identified (HCCF: 41.38%, AFP: 4.10%), sensitivity (HCCF:

84.14%, AFP: 27.59%), and Youden index (HCCF: 0.44, AFP: 0.24), similarly, the HCCF-Enhanced model using a cutoff score of 4, also showed improvements. Compared to existing models, both HCCF models demonstrated superior predictive performance in all aspects, with significant improvements in AUC, net reclassification improvement index, and integrated discrimination improvement index.

**Conclusion:** The female score-based stratification model constructed in this study demonstrates good predictive capability. The recommended high-risk threshold of this score can enhance precise surveillance for HCC and improve screening efficiency.

Speaker: M. Cao

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: programme implementation

**000832 | Increasing timely access to care for breast cancer patients in Ghana: How a National Patient Navigation Program is bridging the gap**

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**Background and context:** Breast cancer (BC) is a major health challenge, especially in low- and middle-income countries. In Ghana, it is the leading cause of cancer-related deaths, with a mortality rate of 47% in 2022. Comprehensive BC management is limited to urban areas, creating access barriers for the majority of the population. Up to 70% of BC cases in Ghanaian women are diagnosed at later stages (III and IV) due to fear and mistrust of the healthcare system.

**Aim:** To enhance access and improve the detection, diagnosis, and comprehensive management of breast cancer through an innovative national BC patient navigation program.

**Strategy/tactics:** A partnership was forged between Embrace Society and Roche Products Ghana to support the establishment of a Breast Cancer Patient Navigation (BCNP) program. Secondary partnerships with public and private clinical institutions were formed to generate insights on the breast cancer patient journey (BCPJ).

**Programme/Policy:** Patient Navigation and data usage for improved BC patient outcomes.

**Process:** Using insights from the BCPJ, we created a patient navigation model to guide patients and caregivers along the BC care continuum. Thirteen navigators, including BC survivors and clinical staff from 10 hospitals nationwide, underwent comprehensive training on patient tracking, advocacy, counseling, and effective team collaboration. Equipped with digital devices, navigators facilitated data collection, communication with patients and caregivers, appointment tracking, psychosocial support provision, and requests for financial assistance to ensure patients start their journey early from diagnosis and stick to treatment.

**Outcomes:** Reliable tracking of patient interactions and outcomes through consistent data collection; Improvement in early detection of

BC cases; Increase in patients starting treatment within 60 days, aligning with WHO Breast Cancer initiative for 2040; Facilitation of collaborations within the healthcare system resulting in increased referrals and access to resources; Better understanding of impact of BC; psychosocial support for BC patients.

**What was learned:** **Funding:** Patient navigation increases BC awareness, attracting increased funding from the government, corporate bodies, and individuals; **Rural Access:** Developing a pipeline between rural and primary healthcare facilities is vital to improving the BCNP model; **Sustainability:** The multi-stakeholder approach of this model requires constant communication and stakeholder engagement for the program to run efficiently; **Replicability:** This BCNP model can be replicated for other cancers in Ghana.

**References**

- Gbenonsi, G., Boucham, M., Belrhiti, Z., Nejjari, C., Huybrechts, I., & Khalis, M. (2021). Health system factors that influence diagnostic and treatment intervals in women with breast cancer in sub-Saharan Africa: a systematic review. *BMC Public Health*, 21, 1–20., Tuck, C. Z., Cooper, R., Aryeetey, R., Gray, L. A., & Akparibo, R. (2023). A critical review and analysis of the context, current burden, and application of policy to improve cancer equity in Ghana. *International Journal for Equity in Health*, 22(1), 254., 1. Schoenhals, S., Mali, M. E., Sutherland, E. K., Sorenson, J., Dedey, F., Nellermoe, J., ... & Brownson, K. E. (2023). Geospatial availability of breast cancer treatment modalities and hypothetical access improvement in Ghana: A nationwide survey. *Plos one*, 18(9), e0291454.

Speaker: A. A. Ninson

Theme: 1. Prevention, screening & early detection

Topic: Access to care

**000841 | Integrating HPV-based cervical cancer screening and HIV testing in an established breast health clinic in Zambia**

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**Background:** Breast and cervical cancers are diagnosed in almost 3 million women every year in the World and are responsible for 1 million annual deaths. The burden of these diseases is particularly heavy in sub-Saharan Africa (SSA) where incidence rates of both are climbing, and mortality rates are among the highest in the world (1). A Breast Health Clinic was established in 2018 at Matero Level One Hospital, a primary care level hospital in Lusaka, Zambia. This clinic focuses on early diagnosis of breast cancer by offering clinical breast examination, breast ultrasound and ultrasound guided biopsy (2). For this study, we integrated HPV-based cervical cancer screening and HIV testing and referral to treatment services, in the established breast

clinic. This created an opportunity to simultaneously detect HIV, cervical cancer precursors, and early-stage breast cancer, in a single visit.

**Aim:** Our objective was to assess the feasibility of the One-Stop Women's clinic offering breast cancer early diagnosis, cervical cancer screening, and HIV testing integrated as a single-visit. Second, to conduct a process evaluation of the clinic to assess the acceptability, feasibility and implementation barriers and facilitators of delivering the services altogether.

**Methods:** Data was collected from patients attending the breast clinic with breast symptoms. Convenience sampling was used to recruit participants in this study. A total of 180 participants were enrolled between October 2021 and March 2022. A questionnaire was used to collect the data from the participants. The patients were assessed for breast with CBE, ultrasound and core biopsy as indicated by the surgeons, and were instructed and given HIV and HPV self-test kits. The specimens were submitted to the laboratory for further assessment, and referral was guided by the results of the tests. Five administration staff at the hospital were interviewed to assess acceptability, feasibility, and implementation barriers.

**Results:** Of the 180 participants, the majority were below the age of 55. HPV results indicate 23.3% of the women were positive. Regarding their HIV status, 18.9% of the participants were found to be positive. Furthermore, 86.7% of the participants had benign breast disease while 13.3% had breast cancer. Our evaluation further revealed that 97.2% of the participants were happy with having HIV and HPV tests as they waited for their breast assessments. Furthermore, 63.9% of the participants were satisfied with the flow of the services offered at the One-Stop Women's Clinic while 33.9% were extremely satisfied. Among the staff interviewed, the three administrators confirmed that the program was well regarded within the hospital because it was efficient in saving hospital resources and respected women's time. The main challenge for sustaining the program was the cost of the HPV test.

**Conclusion:** Provided the HPV test kits are made accessible, the One Stop Women's Clinic is a feasible, efficient, and acceptable way of addressing the early detection of the three top illness affecting women in SSA.

#### References

- 2.Songiso M, Pinder LF, Munalula J, Cabanes A, Rayne S, Kapambwe S, Shibemba A, Parham GP. Minimizing Delays in the Breast Cancer Pathway by Integrating Breast Specialty Care Services at the Primary Health Care Level in Zambia. *JCO Glob Oncol.* 2020 Jun;6:859–865. doi: <https://doi.org/10.1200/GO.20.00083>, 2.6.  
Songiso M, Pinder LF, Munalula J, Cabanes A, Rayne S, Kapambwe S, Shibemba A, Parham GP. Minimizing Delays in the Breast Cancer Pathway by Integrating Breast Specialty Care Services at the Primary Health Care Level in Zambia. *JCO Glob Oncol.* 2020 Jun;6:859–865. doi: <https://doi.org/10.1200/GO.20.00083>

Speaker: M. Songiso

Theme: 1. Prevention, screening & early detection

Topic: Integrating cancer and NCDs into existing services, health systems strengthening, and patient empowerment

#### 000870 | Applying the lens of context to commence population-based prostate cancer screening pilot programme in five regions in the Europe Union

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**Background:** Adequate organizational, legal, and financial frameworks are crucial for establishing effective population based cancer screening programmes. The “Prostate Cancer Awareness and Initiative for Screening in the European Union” (PRAISE-U) project (<https://uroweb.org/praise-u>) is investigating the feasibility of implementing a population-based prostate cancer (PCa) screening programme in five pilot regions in Europe; Lithuania, Poland, Ireland, and in Manresa and Galicia region in Spain.

**Aim:** As part of PRAISE-U, we explored health system readiness and capacity in which the pilot sites will be initiated to inform strategies for implementation.

**Methods:** We utilised a capacity assessment protocol to assess multiple dimensions of readiness and capacity in relation to the broader health system in the pilot sites. Information from a desk review of relevant documents, field visits and interviews with pilot site coordinators were collated and summarised.

**Results:** The site-specific assessment is summarised in Figure 1. This includes (1) Governance, policies, and guidelines; (2) Organisation and funding; (3) Invitation and communication with screening participants; (4) Screening test and diagnosis; (5) Quality assurance and programme evaluation; (6) Data infrastructure. Diverse governance structures, invitation methods, availability of data infrastructure, monitoring mechanism and other factors were noted in the five selected sites. Budget allocation and specific screening policies also varied considerably. While none of the regions offer routine screening, Lithuania has ongoing organised opportunistic program with reimbursement.

**Conclusion:** Our findings underscore the necessity for PRAISE-U to take a flexible approach to tailor region-specific strategies due to the diverse health system capacity within the EU that may influence the screening implementation and outcomes.

#### References

- [1] International Agency for Research on Cancer, France, & Health Service Executive of Ireland, Ireland. (2023). Best practices in cervical screening programmes: Audit of cancers, legal and ethical frameworks, communication, and workforce competencies.

[2] Van Poppel, H., Roobol, M. J., & Chandran, A. (2023). Early Detection of Prostate Cancer in the European Union: Combining Forces with PRAISE-U. *European urology*, 84(6), 519–522. <https://doi.org/10.1016/j.eururo.2023.08.002>

Speaker: A. Chandran

Theme: 1. Prevention, screening & early detection

Topic: Integrating cancer and NCDs into existing services, health systems strengthening, and patient empowerment

#### 000882 | Improving breast cancer early detection in Côte d'Ivoire: Program outcomes

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**Background:** In Côte d'Ivoire >70% of women with breast cancer are diagnosed with Stage III/IV disease. Patients pay for all diagnosis and treatment costs.

**Aim:** We evaluated the effect of provider education, patient navigation and financial support on time from presentation to diagnosis and treatment uptake.

**Methods:** Setting. Five participating primary healthcare centers in Bouaké. Intervention. (1) Breast health training curricula for primary care providers (PCPs), community health workers (CHWs), and patient advocates/cancer survivors (PAs), based on findings from a qualitative assessment. Content included benign breast disease, cancer diagnosis and treatment (PCPs); raising awareness about breast cancer (CHWs); and patient navigation and treatment adherence support (PAs). 36 PCPs, 5 CHWs, and 2 cancer survivors were trained. (2) For indigent patients (almost all patients), the program paid for imaging and pathology diagnosis; for those diagnosed with cancer, costs of blood-work, imaging, and chemotherapy. Participants. Women with breast symptoms presenting to health centers from December 2022 to September 2023. Primary outcome was mean time from presentation to diagnostic resolution.

**Results:** 223 women enrolled in the study. Mean age was 33.7 (st.dev 13.2). 96 (43%) had no formal education, 42 (18.8%) completed primary school/high school, 85 (38.1%) college/university.

Time from noticing symptoms to presenting to healthcare center was <1 month for 96 (43%), 1–3 months for 33 (15%), 3–12 months for 28 (13%), and >12 months for 62 (28%). 71 (31.8%) received treatment; 37 (16.6%) continued surveillance; 90 (43.4%) referred for breast ultrasound; 26 (11.7%) for mammography; 42 (18.8%) for biopsy.

Among 106 (91.4%) who had imaging, mean time from presentation to imaging was 14.5 days (st.dev 15.6 days). Among 42 who had a

breast biopsy, mean time from presentation was 34.5 days (st.dev 27.4) and to biopsy result was 64.7 days (st.dev 33.0 days).

Seventeen (7.6%) patients were diagnosed with breast cancer. Among the 17, mean number of months from noticing symptoms to presentation was 9.7 (st.dev 11.0). Of the 17, 2 (11.7%) had Stage II disease, 6 (35.5%) had Stage III, 6 (35.3%) had Stage IV, and 3 did not complete staging. Nine (52.9%) patients declined treatment despite many discussions with patient advocates and the study team, mainly citing fear of side-effects. After 1.5 years of follow-up, 5 (29.4%) received treatment, 6 (35.3%) died, and one was lost to follow-up.

**Conclusion:** Our program was successful in improving time from presentation to diagnosis. For women diagnosed cancer, impact was limited due to the long time from noticing symptoms to presentation, finances limiting access to treatment, and low treatment acceptance.

Speaker: N. M. Homian

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

#### 000899 | Early detection and social marketing campaigns in Quebec, Canada

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**Background and context:** The Canadian Cancer Society (CCS) is a leading non-profit in Canada, serving over 55 million people and advocating for healthy public policies to prevent cancer. In Quebec, it offers more than 12 prevention programs targeting all age groups, with a focus on underserved populations. Breast cancer is Canada's most diagnosed cancer among women, while colorectal cancer ranks fourth but is the second leading cause of cancer death.

Quebec has a breast cancer screening program, but it hasn't met its mammogram participation goal. Colorectal cancer lacks an organized program, but a stool test is available. Challenges exist, especially with lower participation rates among racialized communities, possibly due to literacy and access barriers, exacerbating healthcare inequities.

**Aim:** Since 2009, CCS has organized two social marketing campaigns aimed at raising awareness among Quebecers on the importance of undergoing these screening tests. The Memo-mamo campaign raises awareness among all women aged 50–74 about breast cancer screening through mammography. The Together, Let's Dethrone Colon Cancer campaign targets all Quebecers aged 50–74 to encourage them to take a colorectal cancer screening test.

**Strategy/tactics:** For over a decade, we've faced challenges that led us to adopt various communication strategies. Our campaigns emphasize awareness through press, social media, and ambassadors. Key messages are translated into multiple languages and promoted in mainstream and racially diverse media.

**Programme/Policy:** To increase the reach of our voice and overcome literacy difficulties, the CCS team developed a website on breast cancer screening, which is available in 6 languages.

**Process:** Our campaign strategy is all about fairness and equity. We follow key steps: setting objectives, understanding our audience, crafting relatable messages, choosing the right platforms, creating impactful content, measuring results, and fostering partnerships. Throughout, we stay attuned to the diverse challenges our audience faces.

**Outcomes:** We've made significant strides in raising awareness about early cancer detection, as evidenced by our annual surveys. For instance, our Memo-mamo campaign focusing on breast cancer detection has been particularly effective. It successfully communicated the importance of mammograms to over three-quarters of respondents and encouraged more than two-thirds of them to undergo screening.

**What was learned:** By attending this conference you will learn more about the social marketing strategies we've employed to raise awareness among Quebecers about early cancer detection. Gain insights into our key message dissemination, initiative effectiveness, and growing outreach over the years. Plus, you will learn about our dedicated efforts to engage ethno-cultural and immigrant communities.

#### References.

Canadian Cancer Society. (n.d.). Memo-mamo. Retrieved April 3, 2024, from <https://www.cancer.ca/detronons>, Canadian Cancer Society. (n.d.). Memo-mamo. Retrieved April 3, 2024, from <https://www.cancer.ca/memo-mamo>, Government of Quebec. (n.d.). Immunochemical Fecal Occult Blood Test (iFOBT)—Colorectal Cancer Screening. Retrieved April 3, 2024, from <https://www.quebec.ca/en/health/advice-and-prevention/screening-and-carrier-testing-offer/colorectal-cancer-screening/immunochemical-fecal-occult-blood-test-ifobt>, Government of Quebec. (n.d.). Colorectal Cancer Screening. Retrieved April 3, 2024, from <https://www.quebec.ca/en/health/advice-and-prevention/screening-and-carrier-testing-offer/colorectal-cancer-screening>, Government of Quebec. (n.d.). Test de RSOSi—Dépistage du cancer colorectal. Retrieved April 3, 2024, from <https://www.quebec.ca/sante/conseils-et-prevention/depistage-et-offre-de-tests-de-porteur/depistage-du-cancer-colorectal/test-de-rsosi>, Government of Quebec. (n.d.). Quebec Breast Cancer Screening Program: Program Evaluation. Retrieved April 3, 2024, from <https://www.quebec.ca/en/health/advice-and-prevention/screening-and-carrier-testing-offer/quebec-breast-cancer-screening-program/program-evaluation>, Canadian Cancer Society. (n.d.). Breast Cancer Statistics. Retrieved April 3, 2024, from <https://cancer.ca/en/cancer-information/cancer-types/breast/statistics>

Speaker: N. Garceau

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

#### 000900 | Tackling breast cancer screening in conservative communities

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**Background and context:** Breast cancer (BC) is the most common cancer in the Middle East and North Africa (MENA), with its

prevalence escalating at an alarming pace<sup>1</sup>. Studies across MENA have revealed a reluctance of women to engage with breast cancer screening programs. Sociocultural barriers emerge as primary deterrents, including factors such as fear, societal stigma, and lack of knowledge and awareness.<sup>2-4</sup>

**Aim:** Improve early detection of breast cancer among women in MENA through encouraging screening by education and raising awareness.

**Strategy/tactics:** The Science Health Education (SHE) Center was established at Dana-Farber Cancer Institute with the vision of reducing cancer burden in MENA through education, raising awareness, and enhancing early detection. Through collaborations with local partners, educational workshops have been conducted in different MENA countries, including Jordan, Morocco, and Iran, with a special focus on women's health.

**Programme/Policy:** The SHE Center launched an initiative called 'SHE Cares' that focuses on women's health and breast cancer specifically in MENA. Through this initiative and in collaboration with local partners, BC-focused educational workshops with engaging discussions will be conducted, targeting women in MENA from different age groups and backgrounds.

**Process:** Our primary objective was to develop an approach that alters women's perceptions of breast cancer screening, using language that is both scientifically accurate and culturally sensitive. We organized an exclusive workshop for women to discuss BC screening within the context of conservative cultures in MENA. These discussions were held under the 'Chatham House rules,' ensuring confidentiality. The workshop was designed to be interactive, allowing women to voice their concerns and ask questions freely. With a diverse team including Western members, we facilitated discussions comparing cultural influences on perceptions of breast cancer screening. Half of the participants were young women under 30, promoting a rich exchange of views across different cultures, backgrounds, and ages.

**Outcomes:** Women were highly engaged and asked numerous questions. The feedback was very positive. All attendees expressed the need to normalize the conversations about BC and women's health within the community. Approaching women in these settings enabled us to address misconceptions and correct false beliefs effectively.

**What was learned:** Younger women showed greater openness to engaging in discussions and adhering to breast cancer screening guidelines. Educational level did not significantly impact attitudes. Many highly educated attendees still held conservative views on women's health topics. Women expressed feeling more comfortable sharing experiences and asking questions in women-only settings.

#### References

1. Sung H, Ferlay J, Siegel RL, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021;71(3):209–249. doi: <https://doi.org/10.3322/caac.21660>
2. Elias N, Bou-Orm IR, Adib SM. Patterns and determinants of mammography screening in Lebanese women. Preventive medicine reports 2017; 5: 187–93.

3. Basu P, Selmouni F, Belakhel L, et al. Breast cancer screening program in Morocco: status of implementation, organization and performance. International journal of cancer 2018; 143(12): 3273–80.
4. Saeed RS, Bakir YY, Ali LM. Are women in Kuwait aware of breast cancer and its diagnostic procedures? Asian Pacific Journal of Cancer Prevention 2014; 15(15): 6307–13.

Speaker: R. Rimawi

Theme: 1. Prevention, screening & early detection

Topic: Education in cancer prevention

**000910 | Feasibility and accuracy of artificial intelligence-assisted sponge cytology for screening of esophageal squamous cell carcinoma and adenocarcinoma of the esophagogastric junction in China**

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**Background:** Esophageal squamous cell carcinoma (ESCC) and adenocarcinoma of the esophagogastric junction (AEJ) remain major health burdens and co-occur geographically worldwide. Screening is the pivotal strategy to relieve the burden of ESCC and AEJ in high-risk areas. However, early detection depends on upper gastrointestinal endoscopy, which is not feasible to implement at a population level.

**Aim:** We aim to evaluate the feasibility and accuracy of artificial intelligence (AI)-assisted sponge cytology tests using a novel cell collection device for ESCC and AEJ screening in Chinese high-risk regions.

**Methods:** Participants aged 50 years or older were recruited in five high-risk regions of ESCC and AEJ. Cells from esophagus and esophagogastric junction were collected using a novel and minimally invasive capsule sponge, and cytology slides were scanned by a trained AI system. The qualitative outcomes (indicating the location of abnormal cells) and quantitative outcomes (counts of total scanned cells and potentially abnormal cells) were reported. A cytological diagnosis was made by consensus. Participants scored acceptability immediately following the procedure on a scale of 0 (least) to 10 (most acceptable). Upper gastrointestinal endoscopy was performed subsequently with biopsy as needed. We trained and validated logistic regression model to predict a composite outcome of high-grade lesions (ESCC, AEJ and high-grade intraepithelial neoplasia), with cytological diagnosis and 10 epidemiological features as the predictive features. Model performance was primarily measured with the area under the receiver operating characteristic curve (AUC). Internal validation of the prediction models was performed using the 1000-bootstrap resample.

**Results:** A total of 1289 participants were enrolled and completed study procedure. No serious adverse events were documented during the cell collection process, and acceptability scores were 10 (74.9%), 9 (13.2%), 8 (5.7%), 7 (2.2%) and 6 (1.2%). 19 (1.5%) participants were diagnosed with high-grade lesions confirmed by endoscopic biopsy. The AUC of the logistic regression model was 0.81 (95% confidence

interval [CI], 0.73–0.90), with a sensitivity of 73.7% and specificity of 72.4% for detecting high-grade lesions. Internal validation by bootstrapping analysis demonstrated an optimism-corrected AUC of 0.72 for the model.

**Conclusion:** We demonstrate the safety, acceptability and feasibility of AI-assisted sponge cytology in high-risk regions, with high accuracy for detecting high-grade lesions. Our results pave the way for innovative etiology and early-detection research.

Speaker: Z. Fan

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

**000928 | Performance of high-risk HPV DNA testing with HPV 16/18 genotyping in the triage of women with NILM cytology: A national multicenter prospective cohort study in China**

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**Background:** Cervical cancer is a major concern globally, particularly in China. While cytology-based testing is fundamental to screening, its limited sensitivity remains a critical concern. High-risk human papillomavirus (HR-HPV), notably types HPV 16 and 18, has emerged as a crucial tool in cervical cancer screening, given its strong association with disease progression.

**Aim:** To evaluate the triage effectiveness of HR-HPV DNA testing with HPV 16/18 genotyping in women with negative cytology for intraepithelial lesions or malignancy (NILM) in a multicenter prospective cohort study in China.

**Methods:** From April 2017 to December 2020, a prospective cervical cancer screening cohort was established in China, consisting of 8403 women aged 30–64 years old with NILM cytology. At baseline, all women were conducted HR-HPV DNA testing using a newly developed Hybribio's 14 HR-HPV with 16/18 genotyping real-time PCR (HBRT-H14) kit. Women with positive HPV 16/18 were referred for colposcopy and biopsied if necessary. Women with positive HR-HPV at baseline without cervical intraepithelial neoplasia grade 2 or worse (CIN2+) lesions would be retested by cytology every 12 months for 2 years or until they were detected for CIN2+. All subjects without CIN2+ were followed up by cytology and HR-HPV DNA testing in the third year. The sensitivity, specificity for the detection of CIN2+ of the HR-HPV DNA testing were calculated. And the 3-year cumulative risk of CIN2+ for different HR-HPV infections in the baseline were estimated.

**Results:** Eligible data were available for 8403 women with an average age of  $45.5 \pm 8.39$  years old. In the baseline, 11.83% (994/8403) were HR-HPV positive, 2.42% (203/8403) were HPV 16/18 positive. During the cumulative 3 years, the sensitivity and specificity for the detection of CIN2+ by baseline HR-HPV positive were 92.41% (95% confidence interval [CI]: 84.40–96.47) and 89.56% (95% CI: 88.80–

90.28), respectively. The corresponding rates were 40.51% (95% CI: 30.37–51.53) and 98.17% (95% CI: 97.81–98.46), respectively, by baseline HPV 16/18 positive. Compared with HR-HPV negative women (0.10, 95% CI: 0.04–0.23), the relative risk for the development of CIN2+ in the cumulative 3 years were 206.30 (95% CI: 87.57–486.10) in the HPV 16/18 positive women (20.92, 95% CI: 15.18–28.07), 94.51 (95% CI: 41.25–216.50) in the HR-HPV positive women (9.58, 95% CI: 7.68–11.89), and 66.41 (95% CI: 28.31–155.80) in the other HR-HPV positive women (6.73, 95% CI: 4.98–9.02).

**Conclusion:** The HR-HPV DNA test of HBRT-H14 kit demonstrated excellent clinical performance in identifying CIN2+ lesions among women with NILM cytology. Its HPV 16/18 genotyping results can provide reference for the risk stratification in cervical cancer screening.

Speaker: H. Wang

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: technological advances

#### 000944 | Increasing screening uptake by going mobile

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**Background and context:** According to the Malaysian National Cancer Registry Report 2012–2016, cancer cases rose 11% from 2007 to 2011, with 63.7% of cancers in Malaysia detected in the stages three and four. Access to healthcare facilities as one of the main reasons for low screening uptake.

**Aim:** Early cancer detection through mobile screening.

**Strategy/tactics:** Majlis Kanser Nasional (MAKNA), Malaysia, introduced their Cancer Screening Unit (CSU) in 2011, providing free mammograms to women in B40 communities and rural communities across Malaysia. It consists of 3 trucks, each with a mammogram machine. To date, the DMMU have conducted 44,106 mammograms.

**Programme/Policy:** From 2011 to 2022, mammogram images taken by MAKNA CSU were stored in a hard drive and given to radiologists back at HQ, with results given to participants via registered mail in 7 days. Those requiring further investigation would be given a referral to the nearest government health facility. 19% of mammogram participants required breast ultrasounds but only 36% of them proceeded to have it done.

**Process:** Since 2023, MAKNA extended their service (and their trucks) to include breast ultrasound. Mammogram images are sent via cloud to radiologists. The results are then explained by a doctor to the participants within 30 min of mammogram done, those requiring breast ultrasounds offered one immediately. Since the start of the breast ultrasound service, 17% of participants required breast ultrasound and 87% proceeded to get one.

MAKNA also introduced iFOBT for colorectal cancer screening in 2023. Women who come for mammogram fall in the age group for iFOBT and already have an interest in cancer screening. They frequently come with husbands of similar age. The cost of IFOBT

screening is minimal (RM5 per IFOBT kit as compared to RM180 per mammogram). Staffing costs and logistic costs are negligible as we utilise existing staff.

A University Malaya study in 2019 found that while 51.4% of participants said they were willing to undergo the iFOBT test, only 7.5% performed the test. From those that underwent the screening, the return rate of the iFOBT kits to healthcare facilities was only 35%. This is because participants were required to bring back the kits to local clinics with fecal samples for testing.

**Outcomes:** The MAKNA CSU iFOBT service has a 58% return rate, as we encourage participants to test their fecal samples at home, and send a picture of it to us via instant messaging service (WhatsApp, SMS, and iMessage). Patients with positive iFOBT tests will be given a referral letter for further tests while those with invalid tests will be given a new kit.

**What was learned:** Breast and colorectal cancers rank #1 and #2 worldwide. There are many breast cancer screening initiatives worldwide. By parcelling together mammogram and iFOBT, we can help detect two cancers instead of just one. By going mobile, we can increase screening uptake, as well as reduce defaulter rates thus reducing the cancer burden in our communities.

Speaker: M. F. Bin Md Taib

Theme: 1. Prevention, screening & early detection

Topic: Access to care

#### 000946 | The MAGPIE study: Multi-cancer genomic risk assessment to target screening in general practice

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**Background:** Polygenic risk scores (PRS) can predict an individual's risk of cancer enabling tailoring of cancer screening. This genomic risk assessment can feasibly be delivered in general practice as a complex intervention, including both risk-appropriate screening recommendations and methods to increasing screening uptake.

**Aim:** Following the MRC framework for complex intervention design, this study aimed to pilot and refine a multi-cancer genomic risk assessment to target screening in general practice.

**Methods:** Patients aged 45–59 were recruited from 3 general practices in Melbourne, Australia, provided a saliva sample and received personalised risk information for melanoma, colorectal and either breast or prostate cancer. Completion of risk-appropriate screening

within 6 months of PRS results was recorded, and psychosocial impact (MICRA score, Cancer Worry Scale) at 1, 2 and 6 months measured.

**Results:** 149 patients were recruited and 143 personalised risk results returned. 32 of 143 participants (22%) were identified at increased risk for at least one cancer based on their family history and a further 28 (20%) due to their PRS. 61% of women (95% CI: 46%–74%) due for breast screening, and 36% of men (95% CI: 20%–57%) eligible for prostate screening completed the appropriate screening test within 6 months of their PRS results. 41% (95%CI: 30%–54%) completed colorectal screening and 62% (95% CI: 43%–78%) completed melanoma screening. The mean MICRA score at 1 month was 13.2 ( $n = 129$ , sd 10.6, possible range 0–100). Cancer-related worry (possible range 4–24) did not increase after risk information (baseline: mean 8.8, SD 2.6; 1 month: mean 8.4, SD 2.4; 2 months: mean 8.4, SD 2.6; 6 months: mean 8.5, SD 2.4).

**Conclusion:** The MAGPIE study shows that a multi-cancer polygenic risk score delivered with decision support material in general practice can identify individuals for tailored cancer screening, without increasing cancer-related worry. Screening uptake after personalised risk information varied by cancer, being higher for breast cancer and melanoma. Results will be used to refine this complex intervention for trialling in an RCT (CASSOWARY) in 2024.

Speaker: S. Saya

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: recruitment and communication

#### 000976 | Natural history of oral human papillomavirus infection among healthy individuals—An ongoing molecular epidemiology study from India

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**Background:** Persistent Human Papillomavirus (HPV) infection is one of the driving factors for head and neck cancer (HNC), predominantly oropharyngeal cancer [1]. The prevalence and dynamics of oral HPV infection in healthy individuals and their contribution to HNC are less evident in Indian studies. Therefore, it becomes imperative to understand the natural history of oral HPV, as this will significantly impact HPV prevention strategies in this region.

**Aim:** To study the prevalence, incidence, persistence, and clearance of oral HPV infection in healthy individuals.

**Methods:** This study employs a rigorous longitudinal cohort design, currently ongoing with the recruitment of 5325 healthy individuals aged 18–70 from the rural and urban areas of Viluppuram district, Tamil Nadu, since December 2020. The baseline recruitment of participants has been completed, and we are conducting follow-up visits at least twice to determine the incidence, persistence, and clearance.

Oral gargle samples were collected at all the visits and screened for HPV DNA using a highly sensitive nested PCR (PGMY/GP) [2]. Sanger sequencing was done for HPV genotyping and compared to the known HPV DNA sequence in the GenBank database using NCBI BLAST. HPV mRNA was analyzed using type-specific E6/E7 primers by reverse transcriptase-PCR (RT-PCR) and validated by droplet digital PCR (ddPCR).

**Results:** Oral HPV DNA was present in 5.5% of healthy individuals. 3.7% of participants who were negative at baseline have acquired a new infection at a median of 18 months. The infection persisted in 9% at a median of 8 months, and none persisted at 16 months. 91% have cleared the infection, and the median time to clearance was 8 months. HPV16 (98.6%) was the most common genotype, followed by HPV18 (1%) and HPV66 (0.4%). HPV16 sequences were clustered with Indian lineages (MW012745; KU961847), HPV18 and 66 with Iran lineages (DQ315392, ON698669). HPV variants were observed in nine samples and deposited in the GenBank database [3]. None of the samples were positive for HPVmRNA by RT-PCR and digital PCR. The key findings are presented in Figure 1.

**Conclusion:** This study's findings are significant, revealing that HPV manifests as a transient and clinically inactive infection in the oral cavity of healthy individuals. The identification of HPV types, predominantly in Indian and Iranian lineages, underscores the importance of regional variations in HPV prevalence. The long-term follow-up of persistent cases could provide valuable insights into their potential oncogenic role, thereby informing more effective HPV prevention strategies. These findings are crucial as they provide a deeper understanding of the natural history of oral HPV infection in healthy individuals.

#### References.

- 1.Bruni L, Albero G, Serrano B, et al: Human papillomavirus and related diseases in India. ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre). Summary report 10 March 2023.
- 2.Winder, D.M., Ball, S.L., Vaughan, K. et al. Sensitive HPV detection in oropharyngeal cancers. *BMC Cancer* 9, 440 (2009). <https://doi.org/10.1186/1471-2407-9-440>.
3. <https://www.ncbi.nlm.nih.gov/popset/?term=2580306276>.

Speaker: N. V. Vani

Theme: 1. Prevention, screening & early detection

Topic: Epidemiology

#### 000980 | Public-private collaboration to strengthen local health system capacities: A program to fight liver cancer in Egypt

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**Background and context:** In Egypt, liver cancer or hepatocellular carcinoma (HCC) is the second most common cancer in men, and the

sixth most common in women.<sup>1</sup> The HCC prevalence rate in the country is above the global average, yet patient outcomes remain below international standards.

Bayer initiated a collaboration with the Egyptian Ministry of Health and Population (MOHP) in 2021 to support access to HCC screening, diagnosis and treatment in the country and contribute to the Presidential initiative of "100 million Healthy Lives" for the management of HCC.

**Aim:** The aim of the program was to improve outcomes of patients with HCC in Egypt, by enabling early screening and optimizing HCC management.

**Strategy/tactics:** To reach our goal, we relied on three work packages:

1. **Strengthen Health System:** establishing coordinated health system structures for managing HCC.
2. **Develop capacities:** strengthening screening & disease management.
3. **Raise patient awareness:** raising patient awareness and providing education on screening and proper disease management.

**Programme/Policy:** Stakeholders: Bayer, Egyptian MOHP, and POTS (Part of the Solution).

**Process:** The program ran from Oct. 2021 until Sep. 2023.

**Outcomes:** Key project results/metrics

- 101 private and public HCC centers across Egypt equipped for disease screening and management.
- 370 Egyptian HCPs trained.
- 3672 Health Care Providers (HCPs) engaged in educational program.
- 22 Egyptian HCPs attended Preceptorship Program (2023).
- 9 national educational workshops and trainings conducted (2021–2022).
- 3000 patients with access to systemic therapy.

The Egyptian MOHP and National Committee for Viral Hepatitis (NCCVH) are also planning a pharmacoeconomic publication aiming to evaluate the economic benefit of National Initiative for Early Detection and Treatment of Liver Cancer in Egypt, programs return on investment, clinical outcomes, and HCC treatment improvement.

**What was learned:** Based on the success of this project in Egypt, there are plans to expand it to other African countries, where trained Egyptian HCPs could design customized and high-quality preceptorship programs for African HCPs.

#### References

1. Rashed, W.M., Mohamed Kandeil, M.A., Mahmoud, M.O. et al. Hepatocellular Carcinoma (HCC) in Egypt: A comprehensive overview. Journal of the Egyptian National Cancer Institute. 32; 52,020.

Speaker: P. Bolot

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

#### 000982 | The intersection of Indigenous advocacy and institutional racism—Bowel cancer screening in Aotearoa New Zealand

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 (1) Hei Āhuru Mōwai Māori Cancer Leadership Aotearoa, Hamilton, New Zealand; (2) Te Whatu Ora Waikato, Hamilton, New Zealand; (3) Te Whatu Ora, Auckland, New Zealand; (4) Moahuia and Associates, Ōtaki, New Zealand

**Background and context:** This advocacy report describes the efforts of Māori, the Indigenous people of New Zealand in lowering the bowel screening age for Māori. It shows the perseverance required to advocate in the face of institutional racism. Over half of Māori with bowel cancer are diagnosed before the age of 60 yrs. In comparison, just under a third of non-Māori are diagnosed before 60.<sup>1</sup>

**Aim:** To extend the lower age range of the bowel screening programme to 50 yrs for Māori.

**Strategy/tactics:** Hei Āhuru Mōwai Māori Cancer Leadership Aotearoa led this advocacy. Tactics included data modelling, evidence and coalition building, development and distribution of key messages and use of the media.

**Programme/Policy:** In the early 2010's the government funded a 4 year pilot of bowel screening. The age for screening in this pilot was 50–74 yrs of age. A National screening programme for bowel cancer was announced in 2016 for those aged 60–74 yrs.

**Process:** In 2016, a Hei Āhuru Mōwai member found that the bowel screening programme would increase inequities between Māori and non-Māori. Lowering the screening age for Māori to 50 yrs could achieve the same health gains, while non-Māori were screened from 60 yrs.<sup>2</sup> These findings were delivered by a coalition via journal papers, presentations, letters, position statements, media stories, and meetings with government ministers. In early 2019, following persistent pressure from Hei Āhuru Mōwai, a Bowel Screening expert meeting was held. The principal recommendation from this meeting was that the bowel screening age should be lowered to 50 yrs of age for Māori.<sup>3</sup>

**Outcomes:** In late 2020, the government announced the decision not to extend the bowel screening age for Māori. Hei Āhuru Mōwai persevered for 2 more years. In 2022, the government committed to bowel screening age extension for Māori and Pacific people to 50 yrs. The change would help to fix issues with the programme, but it would not detect bowel cancer earlier for those that were missed while the issue was being debated. The phased rollout of the age extension commenced mid-2023, and currently only covers 3 regions. In 2023, a new coalition government was voted in, that have embarked on a politically motivated agenda to reduce Māori sovereignty. At present, we are unsure about the risk to the rollout of the national bowel screening programme age extension.

**What was learned:** Our intent is to add to the evidence base of institutional racism in cancer control, as bowel cancer screening is yet another example of its immeasurable consequences.

**References.**

1. McLeod, M; Harris, R; Paine, S.J; Crengle, S; Cormack, D; Scott, N; Robson, B. 2021. Bowel cancer screening age range extension for Māori: what is all the fuss about? *NZMJ*. 134(1535).
2. McLeod M, Kvizhinadze G, Boyd M, Barendregt J, Sarfati D, Wilson N, Blakely T. 2017. Colorectal Cancer Screening: How Health Gains and Cost-Effectiveness Vary by Ethnic Group, the Impact on Health Inequalities, and the Optimal Age Range to Screen. *Cancer Epidemiol Biomarkers Prev*. 26 (9): 1391–1400.
3. Jones, R. 2020. Inequity is not a bug in the system—it's a feature. *E-Tangata*. Available from: <https://e-tangata.co.nz/comment-and-analysis/inequity-is-not-a-bug-in-the-system-its-a-feature/>. (Accessed December 2023).

Speaker: H. Arnet

Theme: 1. Prevention, screening & early detection

Topic: Equity and cancer prevention

**000990 | Getting cancer screening and early detection****behaviours ‘back on track’ post the pandemic**

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**Background and context:** In the state of Victoria, Australia, the impact of COVID-19 was particularly severe, due to wide-spread lockdowns and restrictions throughout 2020 and 2021, including the closure of some breast screening services and elective surgeries. Research demonstrated the ongoing impact on declining health seeking behaviours, health checks and cancer screening, and changes to community perceptions of health service access. There were an estimated 6600 ‘missed’ cancer diagnoses in Victoria during 2020–2022.

**Aim:** To increase awareness of and participation in cancer screening, health checks and early detection behaviours to ensure diagnosis of cancer at the earliest stage.

**Strategy/tactics:** Informed by data and research insights, a communications campaign was delivered between May and December 2023.

**Programme/Policy:** The campaign addressed perceptions of accessing primary care for prevention and early detection, and highlighted the importance of not delaying cancer screening and health checks.

**Process:** The campaign included paid advertising and public relations, and primary care and community engagement, including tailored initiatives for people from culturally and linguistically diverse backgrounds. Evaluation measured campaign reach, recall, understanding and attitudes to early detection and cancer prevention, and previous and current health seeking behaviours.

**Outcomes:** The campaign reached over 1.5 million people. Findings from a population survey ( $n = 3655$ ) estimated prompted campaign recall as 29.5%. The majority of respondents rated the campaign as highly believable, relevant and convincing, and provided a strong argument for seeking further information. More than half felt motivated to

complete screening tests. Those exposed to the campaign were more likely to feel confident about when to see a doctor and to believe that their doctor wants to see them about unexplained symptoms. They were also significantly more likely to have engaged in early detection and health seeking behaviours, such as having a check-up, talking to a GP about an unexplained symptom, discussing screening or symptoms with friends/family, or completing breast screening.

**What was learned:** The pandemic has changed Victorians' threshold for when they seek help from a health care provider, with people focusing on immediate concerns and putting off anything deemed non-essential. It is important that any intervention addresses health system changes post the pandemic, and reinforces that doctors are available, want to see them and they would not be a burden. This campaign achieved significant reach and engagement, however sustained messaging is needed to effectively change perceptions deeply entrenched by the pandemic and to get cancer screening and early detection behaviours ‘back on track’.

Speaker: K. Broun

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: recruitment and communication

**001005 | IARC Handbooks of cancer prevention vol. 20—****Alcohol control**

Lauby-Secretan B. \* (1); Gapstur S. (1); Nethan S. (1); Ahmadi N. (1)

(1) *IARC—International Agency for Research on Cancer, Lyon, France*

**Background:** Alcoholic beverages are carcinogenic to humans, with sufficient evidence for cancers of the oral cavity, pharynx, larynx, oesophagus (collectively referred to upper aerodigestive tract cancers), colorectum, liver, and female breast. Globally, in 2020, more than 740,000 new cancer cases were estimated to be caused by alcohol consumption. There is evidence of a dose-response relationship between alcohol consumption and incidence of upper aerodigestive tract and breast cancers.

The IARC Handbooks Programme provides comprehensive reviews and evaluations of the scientific evidence on primary and secondary cancer prevention interventions and strategies. The Programme convenes Working Groups of international scientific experts who perform a transparent synthesis of the scientific evidence and reach a consensus evaluation according to set criteria. These activities follow a transparent, rigorous and well documented process.

**Aim:** There has never been a formal evaluation of interventions or strategies to reduce alcohol consumption, and hence reduce the alcohol-related cancer burden. The IARC Handbooks Programme has undertaken a 2-part volume on alcohol control. This abstract presents the results from the first part.

**Methods:** The analytical framework for the review of primary prevention interventions involves a two-step process (see Figure). In Volume 20A, the Working Group reviewed and evaluated the epidemiologic and mechanistic evidence that reduction or cessation of alcohol consumption reduces the risk of alcohol-related cancers.

**Results:** The Working Group found sufficient evidence that, compared with continuing consumption, reduction or cessation of alcoholic beverage consumption reduces risk of oral and esophageal cancers, limited evidence for risks of laryngeal, colorectal and breast cancers, and inadequate evidence for pharyngeal and liver cancer risks. The Working Group also found sufficient evidence from mechanistic studies that cessation of alcoholic beverage consumption reduces alcohol-related carcinogenesis, based on strong evidence for immediate elimination of acetaldehyde in the upper aerodigestive tract and colon, reduction in intestinal permeability and microbial translocation, and reduction in DNA damage.

**Conclusion:** Our results strengthen the evidence on the benefits of reduction or cessation of alcoholic beverage consumption in cancer causation and thus indirectly further support alcohol-control initiatives to reduce consumption. The Handbooks Programme is currently preparing the review and evaluation of the evidence that individual and population level interventions lead to a change in alcohol consumption (Volume 20B).

**Speaker:** B. Lauby-Secretan

**Theme:** 1. Prevention, screening & early detection

**Topic:** Alcohol control efforts

embracing healthier alternatives. Women, in particular, have integrated self-breast examination into their monthly routines, alongside adopting safer sexual practices and improving personal hygiene. Our screening camps have successfully identified cancer at its nascent stages, enabling timely interventions and treatment referrals, particularly for economically disadvantaged individuals, resulting in an estimated 1% survival rate improvement, equating to approximately 80 lives saved annually.

**What was learned:** Engagement at our awareness sessions underscores a palpable community interest in health improvement, with attendees expressing a newfound sense of responsibility towards their well-being. Encouragingly, individuals are increasingly receptive to screening initiatives, with women displaying a growing comfort in discussing intimate health concerns. Notably, participants have become ambassadors of our cause, actively propagating awareness within their social circles. Moving forward, concerted efforts from governmental bodies, NGOs, healthcare institutions, and grassroots workers are imperative to sustain and expand these initiatives, advocating for regular screenings and mandating HPV vaccination for the youth across India.

**Speaker:** M. Dhingra

**Theme:** 1. Prevention, screening & early detection

**Topic:** The role of early detection

#### 001031 | From awareness to action-saving lives

Dhingra M. \* (1)

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**Background and context:** In India, the absence of widespread screening programs leaves a significant portion of the population vulnerable to cancer, despite a staggering statistic of 1 in 9 individuals facing the risk of this disease. Critical cancers, such as cervical, breast, and oral, which collectively represent approximately 34% of all cancer cases, suffer from low screening rates. Compounded by a shortage of cancer hospitals and oncologists, with a ratio of just 1 oncologist for every 2000 patients, early detection remains a daunting challenge.

**Aim:** Our objective is to elevate awareness levels and identify precancerous or early-stage malignancies through proactive screening initiatives.

**Strategy/tactics:** We implement targeted awareness campaigns and mobile screening camps aimed at destigmatizing cancer within communities. By engaging directly with the populace, we encourage them to prioritize their health and participate in screening activities.

**Programme/Policy:** The Indian Cancer Society, Delhi Branch, has spearheaded efforts to fill this gap by conducting approximately 80 camps annually, serving 8000–9600 individuals and facilitating mammography for 1000 women over the past 25 years.

**Process:** These camps offer screenings for cervical, breast, oral, prostate, and lung cancers. Moreover, educational sessions cover topics ranging from tobacco and alcohol cessation to self-breast examination and HPV vaccination.

**Outcomes:** The impact of our awareness talks has been profound, catalyzing behavioral changes among attendees. Many have shifted away from harmful habits, such as tobacco and alcohol consumption, while

#### 001080 | Factors shaping breast cancer awareness and timely treatment among women in the Fiji Islands

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**Background:** In low-income countries, including those in the Pacific Islands, barriers to healthcare access contribute to high cancer mortality rates, highlighting the importance of investigating the factors contributing to these trends (Sarfati et al., 2019). For example, in Fiji, many women are diagnosed with breast cancer at advanced stages, with half not seeking treatment (Fiji Women's Rights Movement, 2018). No current studies explore the factors behind Fiji's late-stage breast cancer diagnoses.

**Aim:** This research aimed to understand Fijian women's Knowledge, Attitudes, and Practices (KAP) about breast cancer and identify individual and health-care system related barriers to accessing cancer care services in Fiji.

**Methods:** Guided by a pragmatic paradigm, this research employed a mixed-methods approach. It used a KAP survey to evaluate Fijian 270 women's participation in breast cancer screenings and levels of symptom awareness. Furthermore, to understand more why Fijian women might delay seeking medical care for signs and symptoms of breast cancer, the study conducted qualitative semi-structured interviews. Participants included breast cancer survivors (13), community women (13), healthcare professionals (4), and traditional healers (4).

**Results:** The KAP study indicated that approximately half of the participants were unaware of breast cancer warning signs. Recognition of a lump was common, however subtler symptoms such as nipple retraction and skin pigmentation changes were often missed. Many women associated symptoms of hair-loss with breast cancer, rather than a side effect of chemotherapy, indicating a significant knowledge gap about the illness. The interviews also noted a tendency to favour alternative treatments due to cultural and religious beliefs over conventional care. The interview findings also supported a lack of awareness about breast cancer signs, symptoms, and risk within the community.

**Conclusion:** In conclusion, the research showed how culture affects women's views and actions regarding breast cancer, pointing to the need for culturally tailored interventions. Participant interviews indicated that women typically reach advanced disease stages before seeking help and the study further explained this by identifying socio-economic factors including cultural beliefs, breast cancer awareness, and healthcare system perceptions. Overall, the interplay of factors leading to late-stage cancer diagnoses highlights the complexity of the issue, suggesting that policy development for breast cancer control in Fiji must consider a multi-faceted approach.

#### References.

- Sarfati D, Dyer R, Sam F, et al. (2019). Cancer control in the Pacific: big challenges facing small island states. *Lancet Oncol*, 20, 475–92.  
 Fiji Women's Rights Movement. (2018). Breaking the barriers: Understanding cancer services, screening and treatment available for women in Fiji. ARROW, 1.

Speaker: C. Naidu

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

#### 001093 | Advertising for alcohol on Instagram in Germany

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**Background:** Advertising for alcohol increases the initiation of drinking as well as the volume of alcohol consumed by those already drinking and is associated with problematic alcohol use. In order to protect adolescents and young persons, advertising for alcohol should be banned.<sup>1</sup> In Germany, advertising for alcohol is only banned in cinemas before 6 pm.

**Aim:** This study aims to show the extent of advertising for beer on Instagram. The results of the study will be incorporated into an advocacy campaign to drive forward legislation for a comprehensive ban on tobacco and alcohol advertising in Germany.

**Methods:** Starting in September 2023, we collected posts in German language related to beer on Instagram, using a social media listening tool (Meltwater). The search was restricted to the 32 most popular German beer brands. Search terms were defined and search strategies were created. The posts were categorised and systematically analysed with regard to criteria such as the posting account and the subject of the post.

**Results:** Preliminary results are shown, as the search is still ongoing. In September 2023 we identified 360 posts on beer on Instagram. More

than half of the posts are from commercial accounts such as breweries, shops and restaurants or bars, about one third is from influencers. Most prominent subjects of ads are taste, events (such as Oktoberfest), lifestyle and special offers. Drinking alcohol is portrayed as desirable lifestyle.

**Conclusion:** Our study shows for the first time for Germany the extent of advertising for alcohol on Instagram. Young users of the platform are exposed to advertising for a harmful product. To protect young persons from advertising for alcohol, a comprehensive ban on advertising for alcohol is needed.

#### References

- Babor TF, Casswell S, Graham K, Huckle T, Livingston M, Österberg E, Rehm J, Room R, Rossow I, and Sorapaisarn B. *Alcohol: No Ordinary Commodity Research and public policy*. Third Edition. 2023. Oxford University Press, Oxford, UK.

Speaker: K. Schaller

Theme: 1. Prevention, screening & early detection

Topic: Policy development in cancer prevention

#### 001095 | Effect of an endoscopy screening on upper gastrointestinal cancer mortality: A multicenter cluster randomized clinical trial

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**Background:** Endoscopy screening may reduce upper gastrointestinal cancer mortality in high-risk areas, but there is no proven evidence from randomized controlled trials.

**Aim:** We aimed to evaluate the effect of a one-time endoscopy screening on upper gastrointestinal cancer mortality.

**Methods:** A multicenter cluster randomized trial was conducted in both high-risk and non-high-risk areas of China. The randomization and recruitment took place between 2015 and 2017, and participant follow-up ended on December 31, 2022. A total of 151,118 participants aged 40–69 years were enrolled from 345 villages or communities (i.e., clusters). The intervention is an invitation to receive a one-time endoscopy screening, as opposed to receiving usual-care (unscreened). In non-high-risk areas, participants assessed as low-risk in the screening group were not invited to undergo endoscopy screening. The primary outcome was the risk of death from upper gastrointestinal cancer after a follow-up period of 7.5 years. Prespecified secondary outcomes included the risk of death from esophageal cancer, gastric cancer, all-site cancers, and all-causes.

**Results:** A total of 149,837 participants were included in the analysis, with median (interquartile range) age of 53 (47–60) years. Among high-risk areas, 27,291 participants in 81 clusters were randomized to screening group, 32,972 participants in 82 clusters were randomized to control group. In non-high-risk areas, 48,011 participants from 92 clusters were randomized to the screening group, with 24,619 participants (51.3%) assessed as low-risk and invited to receive usual-care; while 41,563 participants from 90 clusters were randomized to

the control group. Among high-risk areas, 146 (0.59%) died of upper gastrointestinal cancers within 7.5 years in the screening group vs 315 deaths (1.03%) in the control group (risk ratio [RR], 0.57; 95% CI, 0.46–0.72). Among non-high-risk areas, upper gastrointestinal cancer mortality was 0.27% (122 deaths) in the screening group and 0.31% (120 deaths) in the control group (RR, 0.87; 95% CI, 0.67–1.11); per-protocol analysis yielded an RR of 0.78 (0.58–1.05); restricting the screening group to participants who underwent endoscopy resulted in a RR of 0.65 (0.40–1.00).

**Conclusion:** One-time endoscopy screening reduces upper gastrointestinal cancer mortality in high-risk areas and likely in non-high-risk areas. With ongoing longer-term follow-up, endoscopy shows promise as a population-based screening test.

Speaker: C. Xia

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: technological advances

#### 001121 | Ensuring linkage to precancer treatment for women who test HPV positive: Learning in four low-and-middle income countries (LMICs)

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**Background and context:** Linking cervical cancer screening with pre-cancerous treatment is critical for cervical cancer elimination but remains a challenge in LMICs.

**Aim:** Strengthening cervical cancer services using evidence-based approaches is needed to ensure that optimal HPV screening linkage to treatment is guaranteed.

**Strategy/tactics:** To integrate HPV screening, thermal ablation and LLETZ treatment into the care continuum.

**Programme/Policy:** SUCCESS, is funded by Unitaid and implemented by Expertise France, Jhpiego, and UICC to support Ministries of Health in Burkina Faso, Côte d'Ivoire, Guatemala, and the Philippines to initiate this strategy.

**Process:** Interventions include procurement and supply chain strengthening and updating guidelines, training, patient navigation and data systems using e-learning and digital health solutions.

**Outcomes:** From 2020 to December 2023, 182,235 women were screened, 122,830 via HPV test, of which 14,058 (11.9%) were women living with HIV. Total HPV positivity rate was 19.3%. Triage or cervical assessment for treatment was completed for 48.6% of women who tested HPV+, with 3 countries above 50%. Of those eligible for ablation, 97% (5704) received treatment (93.5% with thermal ablation). 34.6% of women referred for, received LLETZ treatment, ranging from 27.7% to 62.3%.

**What was learned:** Linking women who test HPV positive for treatment is feasible in LMICs, especially for ablative treatment. Loss to follow up was observed; counseling and communication interventions for returning for results and treatment were necessary. Where completion was below 50%, return times were impacted most by test availability, lab location, and sample volumes. Delayed results, travel time, and cost impacted return for follow up. Provision of available quality LLETZ services remains a challenge. Recommended actions to improve linkage: counselling must emphasize results and follow up needs; continue strengthening labs to ensure timely results; strengthen mechanisms to actively reach missed women; decentralize referral services; strengthen patient navigation; implement quality assurance interventions that prioritize facilities with high lost-to-follow up.

Speaker: V. Reis

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

#### 001124 | Analysis of German-language social media posts on vaccination against human papillomavirus (HPV)

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**Background:** Social media plays an important role in the dissemination of information in the digital world. The aim of this research project was to describe the content of information about HPV vaccination and to investigate the role of X (former Twitter) in the dissemination of this information.

**Aim:** The project also aimed to provide information about the need for information and suitable communication strategies to increase the HPV vaccination rate in Germany. Based on the project results, communication efforts to increase HPV vaccination rates—and ultimately prevent HPV-related cancers—could be optimised.

**Methods:** With the help of the social media monitoring tool “Meltwater,” German-language posts on HPV vaccination on X were recorded for the period January to December 2022. The survey data was analysed according to characteristics such as place of publication, author, reach, topics and sentiment.

**Results:** A total of 2574 German-language postings on X were recorded, of which Germany or another German-speaking country was known as the author's location for around 55 percent. Approximately 41% of the posts did not specify the location of the author. Around 69% of the posts were written by individuals and 21% by organisations. The posts written by organisations had a greater reach than the posts written by individuals: around 12 million compared to 3.6 million people.

Around a third (29%) of the posts deal with the usefulness and recommendation of HPV vaccination as an effective measure to prevent HPV-related cancers. Many posts emphasize the importance of HPV vaccination as protection against various types of cancer, particularly cervical cancer. It is emphasised that vaccination can help to prevent unnecessary suffering.

Around 17% of posts deal with the costs of the vaccination, often reflecting frustration that access to the HPV vaccination can be limited by financial barriers, even if people want to be vaccinated. Questions on and information seeking about HPV vaccination as well as criticism and opposition to HPV vaccination each account for around 10% of the posts recorded. Questions regarding the HPV vaccination include topics such as places where teenagers can get vaccinated, links between vaccination and infertility, diseases that the vaccination can protect against, and so on. The emotional tenor was neutral in around 41% of posts, negative in 35% and positive in 24%.

**Conclusion:** Communication about HPV vaccination on social media has a good reach, especially for posts from organisations. Organisations working in the field of HPV prevention may use the results of this study to optimize their communication strategy on HPV vaccination on X. Questions raised in some posts about HPV vaccination indicate which communication messages are needed to improve information about HPV vaccination in social media.

#### References

Karafillakis E, Martin S, Simas C, et al. (2021) Methods for Social Media Monitoring Related to Vaccination: Systematic Scoping Review. *JMIR Public Health Surveill* 7: e17149.

Speaker: N. Ouédraogo

Theme: 1. Prevention, screening & early detection

Topic: Delivery of health information

#### 001141 | CanScreen5 workforce and equipment needs estimator: A tool for scaling up resources for early breast cancer detection

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**Background:** Breast cancer is a growing concern in developing countries. Limited resources hinder effective screening programs, leading to late diagnoses and poorer survival rates. User-friendly tools can guide policy decisions and improve program effectiveness.

**Aim:** CanScreen5 Workforce and Equipment Needs Estimator is an innovative decision support tool designed to assess, plan, and allocate resources for breast cancer early detection.

**Methods:** CanScreen5 Workforce and Equipment Needs Estimator combine interactive dashboards using estimated cancer incidence data from Globocan 2022,<sup>1</sup> population data from the UN World Population Prospects (2019 revision),<sup>2</sup> and standards for equipment<sup>3</sup> and workforce<sup>4</sup> needed to provide mammography services. Users can estimate needs for mammography machines, radiologists, and radiographers based on IARC/WHO recommendations<sup>5</sup> or chosen screening strategies. The tool allows comparisons of different scenarios and considers a country's existing equipment productivity. This facilitates data-driven decisions for optimizing resource allocation to scaling up the program with the best fit considering the local context.

**Results:** As an example, an LMIC with 9 million women aged 50–69 and a screening coverage of 27% using CBE. It has 53 mammography machines performing 3000 exams each annually, staffed by 51 radiographers and 62 radiologists. The government is designing the new NCCP, and the target goal is 70% screening coverage with biennial mammography. To achieve that goal, it would need 643 machines, 1287 radiologists, and 643 radiographers. Alternatively, using annual clinical breast exams (CBE) would require 86 machines. While there's a gap of 33 machines, the literature suggests these machines could potentially handle 5000 exams annually. Optimizing machine use could bridge the gap, as the need would be for 51 machines, the number already found in the country. However, increasing the number of radiologists to 103 would be crucial for quality care.

**Conclusion:** CanScreen5 Workforce and Equipment Needs Estimator offer a significant step forward in resource planning for breast cancer screening. By enabling evidence-based decisions for resource allocation, this tool has the potential to substantially improve decision-making on early detection allowing better outcomes for breast cancer patients globally.

#### References

1.Ferlay J, Laversanne M, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2024). Global Cancer Observatory: Cancer Tomorrow (version 1.1). Lyon, France: International Agency for Research on Cancer.

2.United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, archive.

3.United States General Accounting Office. Mammography: Capacity generally exists to deliver services, 2002.

4.European Commission, Directorate-General for Health and Consumers, Karsa, L., Holland, R., Broeders, M. et al., European guidelines for quality assurance in breast cancer screening and diagnosis—Fourth edition, supplements, Karsa, L.(editor), Holland, R.(editor), Broeders, M.(editor), Wolf, C.(editor), Perry, N.(editor), Törnberg, S.(editor), Publications Office, 2013, <https://data.europa.eu/doi/10.2772/13196>.

5.IARC/WHO. Breast cancer screening/IARC Working Group on the Evaluation of Cancer-Preventive Interventions, 2014.—2nd edition.

Speaker: B. Jardim

Theme: 1. Prevention, screening & early detection

Topic: Effective national cancer control planning

#### 001154 | Addressing future reduction in cancer incidence in Iran by controlling opium use prevalence

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**Background:** In 2020, the International Agency for Research on Cancer (IARC) classified opium consumption as carcinogenic to humans based on sufficient evidence for cancers in lung, larynx, and bladder, and limited evidence for cancers in the esophagus, pharynx, pancreas, and stomach.

**Aim:** Investigating the number of cancer cases that could potentially be prevented until 2035 by reducing the prevalence of opium use in Iran, where approximately 42% of the global opium consumption occurs.

**Methods:** The population attributable fraction (PAF) of opium-related cancers was projected using national cancer incidence, age- and gender-specific opium use prevalence, relative cancer risks associated with opium use, and annual percentage changes in cancer incidence rates in Iran. Opium-related cancers were defined based on IARC monographs as cancers of lung, larynx, bladder, esophagus, stomach, pancreas, and pharynx. The number of preventable cancer cases under different opium prevalence scenarios was determined by subtracting attributable cases in each year based on current prevalence from those in alternative scenarios.

**Results:** By 2035, an estimated 3,001,421 new cancer cases are expected to occur in Iran, with 905,208 (30.1%) occurring in opium-related sites. Maintaining the current opium prevalence (5.6%) is projected to cause 110,629 new cancer cases (3.7% of all cancers, 12.2% of opium-related). A 10%, 30%, and 50% reduction in opium prevalence could prevent 8975, 28,032, and 48,782 total incident cancers by 2035 in Iran, respectively. Reducing opium use prevalence by 10%–50% is projected to have the highest impact on lung cancer (prevention of 2902 to 15,592 cases), stomach cancer (prevention of 2404 to 12,593 cases), and bladder cancer (prevention of 1725 to 9520 cases).

**Conclusion:** Our results highlight the significant benefits that can be achieved through effective cancer prevention policies targeting opium use in Iran. Neglecting this risk factor is estimated to pose a significant burden on cancer incidence in the next decade in this population.

Speaker: S. Nemati

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

#### 001166 | Expanding access to cervical cancer screening & treatment using optimal tools & technologies: Implementation learnings from a Unitaid funded multi-country project

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(2) Clinton Health Access Initiative, New Delhi, India

**Background and context:** Cervical cancer develops gradually, with opportunities at multiple points to interrupt disease progression & prevent death from invasive cancer, yet limited access to prevention services drives a highly inequitable burden of disease with >90% of 300,000+ annual deaths from cervical cancer occurring in lower-middle-income-countries (LMICs). Unitaid invested over \$41 million in Clinton Health Access Initiative (CHAI) over 2019–2023 in support of 10 partner Governments—India, Kenya, Malawi, Nigeria, Rwanda, South Africa, Senegal, Uganda, Zambia, Zimbabwe—prove out an

affordable, effective package of tools & delivery models to improve screening & treatment (S&T) rates for cervical cancer prevention, in line with WHO's goal of eliminating this cancer.

**Aim:** To share learnings on introducing & integrating use of optimal tools for S&T & expanding service delivery for cervical cancer secondary prevention services in routine health services typically accessed by women in LMICs under real world settings of Government-funded public health programs.

**Strategy/tactics:** The program worked with partner Governments to map out appropriate delivery models to reach women with secondary prevention services including context-specific demand generation strategies, diversifying channels for accessing services, offering choice of screening methods including HPV testing & self-sampling, expanding treatment modality including use of thermal ablation (TA) devices, and strengthening systems for results return & linkage to care.

**Programme/Policy:** The program supported partner Governments to update cervical cancer national guidelines including inclusion of HPV testing and TA devices, align S&T algorithms with WHO recommendations, create HPV screening annual targets and costed national scale-up plans.

**Process:** The program was implemented under the auspices of Ministry of Health in 10 countries with an effort to institutionalize service delivery innovations, training, supervision and mentorship approaches within MoH-led structures.

**Outcomes:** Integrated service delivery is being offered at >1000 program sites across 10 countries. With introduction of new technologies for S&T, coupled with capacity building and supportive supervision of 9000+ health workers, task shifting has been made possible. With market shaping interventions, significant price reductions for HPV tests and TA devices were achieved. 1.2 million+ women were reached with screening services while achieving >80% treatment completion rate for those found eligible with pre-cancerous lesions.

**What was learned:** Replicable models of integrated service delivery with routine health services and mentorship and supportive supervision of healthcare workers, lessons on integration HPV testing on existing platforms, practical learnings on the use of HPV testing for screening & TA devices for treatment.

Speaker: D. Sarwal

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: programme implementation

#### 001184 | A qualitative study on system issues affecting HPV sampling and precancer treatment access in Burkina Faso, Côte d'Ivoire, Guatemala, and the Philippines

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**Background:** Cervical cancer screening and access to precancer treatment is a major problem especially in low- and middle-income countries, which are disproportionately affected. System issues contribute to disparities in accessing cervical cancer screening and treatment services. SUCCESS project, funded by Unitaid, supported the integration of Human Papilloma Virus (HPV) testing within existing women's health programs in Cote d'Ivoire, Burkina Faso, Guatemala, and the Philippines, 2020–2023. In this study, we explore the perspectives of women and health providers on access to services.

**Aim:** To identify and understand the system challenges that hinder access to HPV screening and precancer treatment services.

**Methods:** 78 in-depth interviews and 39 key informant interviews were conducted among women screened and services providers, respectively. Interviews were audio-recorded, transcribed, and translated prior to analysis in NVivo 14.0. Codebooks were developed and iteratively refined by two qualitative analysts. The transcripts were coded and analyzed to identify themes. We compared themes between countries.

**Results:** Health facilities offered women the option of self-sampling or clinician collection of samples; across countries women chose self-sampling due to ease of the process and perceived accuracy of the test results. Within countries, women and providers largely concurred on healthcare system barriers, logistical difficulties faced by women, and infrastructural deficits. Common to countries, detailed counseling provided by healthcare providers, timely delivery of test results and deliberate scheduling of follow-up care made the process successful. However, challenges lay in staff and equipment shortages, limitations of private screening spaces in the facilities, delays in communication of test results, cost, and transportation to access services. Women who tested HPV positive found multiple difficulties in returning to facilities for ablative treatment for precancer or for treatment of advanced lesions. Providers highlighted the need for additional resources and follow up of women to continue in care.

**Conclusion:** Despite these obstacles, incorporating HPV testing into existing services and addressing laboratory testing capacity holds promise for improving screening and treatment access. A multifaceted approach to address provider, health system, and individual-level barriers is needed to mitigate negative factors and improve women's cervical cancer outcomes in the four countries.

Speaker: E. Sheila

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

#### 001196 | Understanding ethnic variation in cervical screening participation in Scotland

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**Background:** Cervical cancer mortality can be reduced by cervical cancer screening. In Scotland, programmatic cervical screening is in place; until the introduction of HPV testing in 2020, cervical cytology was the primary test. Previous work has shown breast and bowel screening participation in Scotland varies by ethnic group.

**Aim:** To identify important ethnic inequalities in cervical cancer screening participation in Scotland, and explore possible reasons for these.

**Methods:** The 2011 Census database was linked, via the Community Health Index number, with the Scottish Cervical Screening Programme data to generate anonymised individual level information on cervical screening participation rates by self-reported ethnic group in Scotland. The cohort comprised women (aged 20–70) who were living in Scotland in April 2011 and took part in the 2011 Scottish census, and who were invited to participate in the Scottish Cervical Screening Programme between January 2012 and December 2018. All ethnic groups were compared to the population of White Scottish women. Qualitative interviews were carried out with 50 women (South Asian, East European, Chinese, Black African / Caribbean, or White Scottish).

**Results:** Data were analysed for over 680,000 women. We found large variation in participation rates by ethnic group, and by length of residence in the UK, even when accounting for socio-economic status. 68.3% of eligible White Scottish women took part in screening in 2016–2018; this contrasts 71% of Black or Caribbean women, 60.6% of Indian women, 58.2% of Pakistani women, and 55.4% among Gypsy Travellers. Across the minority ethnic groups, women who had migrated as adults described key experiences that were different to those of women raised in the UK, including awareness of screening and understanding of access, going abroad for screening, language difficulties, and concerns about immodesty.

**Conclusion:** This study has provided new information about how women from different ethnic minority groups participate in cervical cancer screening in Scotland; we have a detailed understanding of the patterns of screening uptake, highlighting markedly lower participation in marginalised communities. Addressing inequalities in access to and participation in screening is a priority for screening services in Scotland; findings will inform outreach strategies and culturally sensitive and appropriate interventions.

Speaker: C. Campbell

Theme: 1. Prevention, screening & early detection

Topic: Equity and cancer prevention

#### 001217 | Unveiling the ripple effect: Impact of education and screening programs on breast cancer diagnosis

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**Background and context:** In the realm of breast cancer (BC) diagnosis, early detection stands as a beacon of hope, promising improved clinical outcomes. While international guidelines advocate for regular screening from the age of 40, the reality paints a stark contrast across different regions worldwide. In the Western world, strides have been made towards embracing screening programs, leading to a more favourable landscape for early diagnosis. However, in resource limited countries like India, a glaring gap exists, marked by a deficiency in implementing effective screening initiatives and a reluctance among women to participate.

**Aim:** In this study we compared the BC prevalence between women who participated in screening programs versus women who visited clinic.

**Strategy/tactics:** We delved into a myriad of channels aimed at educating women and creating BC awareness, from screening camps to health talks, seminars and leveraged the reach through newspapers, Radio, TV and social media.

**Programme/Policy:** In essence, our data presents irrefutable evidence of the efficacy of educating women in facilitating early BC diagnosis. There is enough scientific evidence to prove that early diagnosis of BC provides better treatment options, reduces the duration of treatment, reduces cost and offers better outcomes.

**Process:** We collected data through a questionnaire from 1630 individuals who visited clinic or participated in screening camps over years. The data included demographics, reasons for clinic visit, family history etc. For analytical purposes, we categorised individuals into two groups: The Awareness Group (AG), comprising those engaged in screening activities and the Examination Group (EG), consisting of individuals seeking clinical evaluation due to complaints.

**Outcomes:** AG exhibited a significantly higher prevalence of malignant BC (66.4%) compared to EG (57%,  $p = 0.004$ ), highlighting the pivotal role of proactive educative and screening efforts. Furthermore, early-stage diagnosis, a crucial determinant of prognosis, was more prevalent in AG, with 76.9% of AG diagnosed at stages I and II compared to EG's 54.8% ( $p < 0.0001$ ), reinforcing the impact of screening and education for early detection of cancer. Most importantly, metastatic BC was absent amongst the AG while it was 7.2% in EG.

**What was learned:** In light of these findings, it is imperative for policy-makers to consider strategic initiatives aimed at fortifying these activities which can reduce the incidence of late diagnosis of BC in India, can improve the outcomes of the treatment, save lives and resources.

Speaker: J. Thumsi

Theme: 1. Prevention, screening & early detection

Topic: Education and training initiatives

#### 001218 | Empowering women for cancer control: A Manitoba-Northern Sri Lanka collaboration

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**Background and context:** CancerCare Manitoba's (CCMB) (Canada) collaboration with Sri Lanka's Northern Province is reshaping healthcare in a post-conflict region. The on-going collaboration began with establishing a cancer registry and is implementing a cancer control model based on CCMB's successful cancer navigation program.

**Aim:** Cancer prevention and early detection through community awareness, thereby optimizing the utilization of existing healthcare resources.

**Strategy/tactics:** Delivering health services directly to the community by employing trained locals who utilize culturally relevant tools such as drama and music to foster community engagement and promote cancer awareness.

**Programme/Policy:** Dissemination of cancer knowledge within the community by trained community connectors.

**Process:** A feasibility study was conducted across all five districts, where health camps delivered cancer screening services and education directly to the community. These camps were led by oncologists and supported by nursing students as community cancer educators.

**Outcomes:** 11% of health camp participants were referred for further evaluation and treatment at the early detection center and the community feedback highlighted the positive impact of direct delivery of health services.

**What was learned:** The significant engagement of women, 70% of participants, with housewives comprising 23%, has paved the way for a new focus on empowering both women and local community officials to become "community cancer connectors." This strategic shift from utilizing nurses as cancer educators is designed to strengthen the link between communities and healthcare services. These connectors will undergo specific training in cancer awareness and effective communication to effectively mobilize communities, ensure follow up for referrals, and maintain cancer awareness beyond health camps. The inclusion of local community officials ensures sustainability and integration into the existing healthcare system, emphasizing the role of community engagement and women empowerment in cancer control.

Speaker: S. Navaratnam

Theme: 1. Prevention, screening & early detection

Topic: Access to care

#### 001221 | Community level implementation of self-sampling for human papilloma virus (HPV) screening by community health workers

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**Background and context:** Cervical cancer is the second most common cancer among women in Burkina Faso, with an incidence of 11.0%

according to GLOBOCAN 2022. With a view increasing prevention access opportunities and reducing the cervical cancer mortality, SUCCESS, a Unitaid funded project implemented by Expertise France, Jhpiego, and UICC, has supported the Ministry of Health of Burkina Faso to integrate HPV screening, thermal ablation and LLETZ treatment, and implement the simple innovation of HPV self-sampling in health facilities. In 2023, SUCCESS took a further step by introducing home-based self-sampling with support of community health workers (CHWs).

**Aim:** To describe the involvement of CHWs in cervical precancer screening services for women in settings where access to prevention services is particularly limited in Burkina Faso.

**Strategy/tactics:** The community HPV self-collection strategy involved training female CHWs and psycho-social counsellors from the HIV active files; organizing and supervising counseling and vaginal self-collection within households; supporting health workers in delivering results and treating precancerous lesions, as well as finding those lost to follow-up. Community leaders were sensitized to facilitate men's support. This was conducted from June 01 to July 15, 2023.

**Programme/Policy:** SUCCESS is a Unitaid funded project implemented by Expertise France, Jhpiego and UICC that is working to increase prevention access opportunities and reducing the cervical cancer mortality.

**Process:** in 2023, SUCCESS Burkina Faso conducted a small demonstration activity for learning from home-based self-sampling with the support of community health workers (CHWs).

**Outcomes:** In the supported communities, 238 people were sensitized, 83.6% of them women; 70 self-samples were provided of which 8 were women living with HIV; 70 results were returned, with 14 HPV-positive women referred to the health facility and provided VIA and treatment.

**What was learned:** HPV self-sampling at the community level was possible as led by CHWs and as a result of the involvement of community leaders. However, even simple factors as the rainy season affects this community engagement in the outdoors, and the unavailability of women for information sessions was observed. This simple demonstration provides learning for wider study of the feasibility and acceptability of community self-sampling in Burkina Faso and similar settings.

Speaker: C. L. Traoré

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

## 001293 | Survey of awareness and beliefs about cancer (ABC) in Tehran Province, Iran

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(5) University of Kent, Canterbury, United Kingdom; (6) Cancer Institute, Tehran, Iran, Islamic Republic of

**Background:** Knowledge, attitudes, and practices are essential for planning and evaluating cancer control programs. Little is known about these in Iran.

**Aim:** To bridge this gap, we conducted a survey using the Farsi version of the international ABC questionnaire to examine the KAP among the adult population of Tehran Province. By employing the ABC questionnaire in our study, we will be able to provide internationally comparable information.

**Methods:** We conducted a population-based interview survey of adults aged 30–70 using the Farsi version of the Awareness and Beliefs about Cancer questionnaire in the capital province of Tehran, Iran, 2019. We calculated weighted estimates of levels of cancer knowledge, attitudes, and practices to allow for different selection probabilities and nonresponse. We used multivariate logistic regression to understand demographic factors associated with bowel, cervix, and breast screening practices.

**Results:** We interviewed 736 men and 744 women. The mean number of recalled cancer warning signs was less than one; 57.7% could not recall any cancer warning signs. Participants recognized 5.6 out of 11 early cancer warning signs and 8.8 of 13 cancer risk factors. Most (82.7%) did not know that HPV infection was a cancer risk factor. Approximately, half had negative attitudes towards cancer treatment, but over 80% had positive attitudes towards the effectiveness of screening for improving survival. Colorectal, breast, and cervical screening rates were 24%, 42%, and 49%, respectively. Higher socio-economic status increased the odds of screening for cancer. Women aged 60–70 were less likely to report taking up breast and cervical screening than younger women.

**Conclusion:** The Iranian population has poor awareness and negative attitudes about cancer, and participation in screening programs is low. Public awareness and early detection of cancer should be promoted in Iran.

Speaker: P. Akbari

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

## 001331 | Rapid 2-in-1 cancer screening: Advancing women-centered healthcare in Rwanda

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**Background and context:** In Rwanda, the majority of breast and cervical cancers are diagnosed in late stages, leading to poor outcomes. To combat this problem, a robust and streamlined approach is needed, such as the 2-in-1 model. This approach not only reduces costs

associated with separate screenings but also improves survival rates and quality of life through early detection and linkage to care.

**Aim:** This model aims to transition from disease-centered to women-centered care, providing efficient screening for both cervical and breast cancers in Rwanda.

**Strategy/tactics:** The integrated 2-in-1 model combines Breast Cancer Early Detection (BCED) and Cervical Cancer Screening (CxCaS). The screening campaign, in collaboration with Society for Family Health (SFH) Rwanda, community health workers (CHWs) facilitated the mobilization and raising awareness at the community level. BCED involves trained provider performing Clinical Breast Exams (CBE) and ultrasound to identify suspicious masses. CxCaS offers self-sampling HPV tests to eligible women, based on WHO Cervical cancer elimination targets. Thermal ablation, or Loop Electrosurgical Excision Procedure (LEEP) treats precancerous lesions. Suspected cancers are biopsied for pathology confirmation, and women diagnosed with cancer receive treatment tailored to their specific needs, utilizing various modalities.

**Programme/Policy:** Implemented by the Rwandan Ministry of Health alongside international partners and local civil society, the 2-in-1 model has led to policy enhancements that streamline cancer screening and optimize resource allocation at primary care centers.

**Process:** From November 2023 to March 2024, in Kayonza district/Rwanda, the program began with community mobilization and awareness. Women visited local health facilities for simultaneous CBE and HPV self-sampling. Abnormal CBE underwent breast ultrasound while positive HPV test underwent VIA triage to exclude precancerous lesions. Suspicious cases were biopsied. Patient navigators ensured proper and timely linkage to further care even at oncology facilities consultations.

**Outcomes:** The program received 25,842 women for BCED, 273 underwent ultrasound and 18 were confirmed breast cancers. 782 women received treatment for precancerous cervical lesions, and 15 were found with cervical cancer.

**What was learned:** Community health workers are vital in community mobilization and follow up abilities.

Local health center screenings enhance accessibility and outcomes despite their high workload.

Patient navigators are crucial for linkage to care and proper follow up.

Speaker: A. Ndayishimiye

Theme: 1. Prevention, screening & early detection

Topic: Early diagnosis and optimising treatment

#### 001379 | Pae Whakatere—BreastScreen Aotearoa

Scott N.\* (1)

(1) Te Whatu Ora Waikato, Hamilton, New Zealand

**Background and context:** Breast cancer is a major cause of avoidable death for Māori and Pacific communities in Aotearoa New Zealand.<sup>1</sup> Māori and Pacific women have been shown to have a 65% higher mortality from breast cancer than non-Māori and non-Pacific women. Breast cancer incidence is 45% higher for Māori and 26% higher for

Pacific compared with non-Māori, non-Pacific women. Additionally, Māori have the lowest breast screening coverage (61.2%) followed by Pacific women (65.5%) compared with Other (69.5%).<sup>2</sup>

**Aim:** To improve equity in breast cancer screening.

**Strategy/tactics:** The Quality Improvement Review (the review) was commissioned by the Chief Executive of Health New Zealand in 2022. Conducted by an independent panel, it assessed whether arrangements for clinical safety and quality for the BSA programme were fit for achieving the objectives of the programme. The review found evidence of pervasive and systemic factors contributing to low screening coverage and 26 recommendations were made for change or improvement.

**Programme/Policy:** There are a number of projects underway including: touchpoints—engagement with Māori and Pacific women in hospital services, targeted campaigns with large employers and an invitation strategy that includes awareness raising campaigns. Improved access—Additional funding to providers so they can sustainably offer a greater range of fixed screening locations/or mobile units in remote communities, support services and flexibility in operating hours. Co-design work with Maori and Pacific communities.

**Process:** A Pae Whakatere (Governance Group) was implemented to oversee, guide and monitor the implementation of the BSA quality improvement review recommendations in June 2024. The group consists of 9 Māori and Pacific leaders who meet monthly and guide a multimillion-dollar improvement programme for the national breast screening programme.

**Outcomes:** To improve equity in breast cancer screening.

**What was learned:** An effective breast cancer screening program must be part of an integrated service providing early diagnosis and treatment to all women with breast cancer.

Speaker: N. Scott

Theme: 1. Prevention, screening & early detection

Topic: Screening and early detection: recruitment and communication

#### 001410 | Cost-effectiveness of reengaging culturally and linguistically diverse communities to breast screening after COVID 19 restrictions

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(2) BreastScreen Victoria, Carlton, Australia

**Background:** Participation in the National BreastScreen Australia Program varies considerably by language spoken at home. To promote equity in breast cancer screening for Culturally and Linguistically Diverse (CALD) communities during the challenges posed by the COVID-19 pandemic, language-specific initiatives were implemented in Victoria.

**Aim:** This study aims to evaluate the cost-effectiveness of re-engagement SMS reminders for lapsed (overdue) CALD clients compared to no initiative to support ongoing implementation.

**Methods:** A cost-utility analysis was conducted to compare the CALD recruitment intervention with standard SMS reminders in English for breast cancer screening in the North Western and St Vincents regions in Melbourne, Victoria. A Markov microsimulation model simulated the development of breast cancer, estimating the cost per quality adjusted life year (QALY) gained for women aged between 50 and 72 years who were overdue for a breast screen in 2019 or 2020 ( $n = 3294$ ). In-language short message service (SMS) reminders to book a screen were sent to the women. The analysis was conducted over a 50-year time horizon from a healthcare perspective, to estimate the cost per quality-adjusted life year (QALY). Healthcare costs were sourced from Australian studies and are in 2021 Australian dollars.

**Results:** Breast screening response rates increased from 8.2% to 12.7% in 2021 when compared to English SMS response rates. Intervention costs averaged \$1.24 per person. The estimated cost/QALY was \$1831 (95% uncertainty interval: dominated–\$5694). It is estimated that because of the in-language SMS intervention there were 12 more breast cancers and 4 more ductal carcinomas in situ detected and 2 fewer deaths from breast cancer.

**Conclusion:** The CALD initiative to increase breast cancer screening was effective and offers good value for money. In-language activity rollout should be considered in more areas and with more language groups. Introducing these types of initiatives as standard practice at BreastScreen Victoria has the potential to increase equity in breast cancer screening for CALD groups.

Speaker: A. Lal

Theme: 1. Prevention, screening & early detection

Topic: Equity and cancer prevention.

#### 001459 | Global, regional, and national burden of breast cancer and its risk factors, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019

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**Background:** Breast cancer (BC) is a significant public health concern worldwide, with its incidence steadily rising over the past decades. Understanding the trends and determinants of BC burden is crucial for guiding preventive measures, early detection programs, and treatment strategies.

**Aim:** Given the recent increasing trends in BC incidence globally, up-to-date information on the BC burden could guide screening, early detection, and treatment, and help effectively allocate resources. An improved understanding of the burden of BC is required to help design strategies for global intervention. We examined the temporal patterns of the global, regional, and national burden of BC and its risk factors in 204 countries and territories from 1990 to 2019. We also used the age-period-cohort (APC) analysis to evaluate the trends of BC in China.

**Methods:** Data on BC was collected by the Global Burden of Disease (GBD) 2019 database. Age-standardized incidence rates and disability-adjusted life year (DALY) rates for BC were extracted from GBD 2019 and stratified by sex, level of the socio-demographic index (SDI), country, and territory. The association between the burden of BC and socioeconomic development status, as represented by the SDI, was described. We also calculated DALYs attributable to risk factors that had evidence of causation with BC. The age-period-cohort method was used to analyze the temporal trends in the mortality rate of BC by age, period, and cohort. The APC tool can be accessed at <http://analysistools.nci.nih.gov/apc/>.

**Results:** Globally, between 1990 and 2019, women's breast cancer incident cases more than doubled, from 867,621 (95% uncertainty interval [UI] 840,400–894,764) to 1,977,212 (1807615–2,145,215). The global age-standardized incidence rate increased from 40.12 (95% UI 38.78–41.33) per 100,000 to 45.86 (41.91–49.76) per 100,000. The estimated annual percentage change (EAPC) is 0.36% (95% UI 0.31–0.42). At the national level, China had the highest number of incident cases (368,374 [290086–463,335]), and deaths (93,498 [74511–115,420]) in 2019. High SDI countries had the highest age-standardized incidence rate (79.22 [70.83–87.70] per 100,000) in 2019. In APC analysis, the net drift is –0.467 (95% UI –0.745–0.188)/year, indicating that BC mortality in China is gradually decreasing.

**Conclusion:** The number of incident cases and deaths from BC increased globally during the past three decades. BC remains a major cause of cancer mortality and burden across the world, requiring increased primary prevention efforts and, possibly, screening in some high-risk areas. We identified a positive association between socio-economic development status and the burden of BC. Substantial variation exists in age-standardized incidence rates across regions and countries, for reasons that are unclear. China needs to take more preventive measures to further reduce BC mortality.

Speaker: Z. Qu

Theme: 1. Prevention, screening & early detection

Topic: Cancer control planning in low- and middle-income countries

#### Theme 2: Cancer research & progress

##### 000037 | Insights from the U.S. National Cancer Institute's Clinical Trial Search Service

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**Background and context:** Insufficient cancer clinical trial participation rates have long been identified as a challenge facing the cancer research community. To address a participation barrier, the U.S. National Cancer Institute's (NCI) Cancer Information Service (CIS) provides free and client-centered clinical trial information and tailored search results to patients, family members, and other loved ones via

its Clinical Trial Search Service (CTSS). Clinical Trial Specialists follow up with patients at set intervals to address questions or information needs that may result from receipt of clinical trial search results.

**Aim:** NCI's CTSS aims to assess whether the information they send addresses patient needs and to determine how the clinical trials information is used. NCI will attempt to determine patient disposition as well as address barriers to clinical trial enrollment.

**Strategy/tactics:** CTSS contacts clients who consent to follow up approximately 2 weeks after the initial contact, and once more, to determine if the patient has enrolled in a clinical trial, has shared the information with their healthcare team, made another decision, and if they have additional concerns.

**Programme/Policy:** NCI is the largest funder of cancer research in the world. The bulk of NCI's budget supports the extramural program—the investigators and institutions across the country who use federal funds to conduct cancer research. As a core part of its mission, NCI coordinates and supports all phases of clinical trials across 2500 clinical trial sites nationwide, seeking the development of new and improved cancer treatments.

**Process:** After consenting to receive follow up communication from NCI, the caller will receive up to two callbacks that address their use of provided clinical trial information. Data will be collected to report on the findings of this initiative.

**Outcomes:** NCI's CIS performs an average of 1800 clinical trials searches per year. Nearly 70% of those eligible to participate in the callback program agree to participate. Actions taken include: 47% reviewed provided information, 24% shared the information with their healthcare team, 10% contacted the study team, 6% were in communication with the study team, and 1% have started a trial.

**What was learned:** Data show many individuals are reviewing and acting on sent information. If a client is not pursuing a trial, it is usually because they are pursuing standard treatment. Callers continue to engage in callbacks, and the CIS specialists continue to be more adept at helping callers. Collected data can be used to inform strategies to increase clinical trials participation.

Speaker: M. Alleyne

Theme: 2. Cancer research & progress

Topic: Delivery of health information

#### 000123 | Harmonising health: Tuning into Indigenous peoples' cancer experiences and supportive care needs associated with cancer

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**Background:** In Australia, Indigenous populations experience disparities in cancer outcomes when compared to non-Indigenous people, marked by delayed diagnoses, higher mortality rates and sub-optimal

care. Indigenous people's cancer outcomes are impacted by the complex interplay between physical, emotional, social, spiritual, and cultural elements of healthcare, and there is no comprehensive understanding of how these elements can be utilised to harmonise and improve cancer care for Indigenous people.

**Aim:** Peer-reviewed literature was reviewed to collate the experiences and supportive care needs of Indigenous people with cancer in Australia, with the aim of evaluating potential areas where cancer care can be improved for this population.

**Methods:** A qualitative systematic review was conducted, and 91 studies were included, reporting on Indigenous experiences of cancer care and the supportive care needs of Indigenous people. Outcomes were analysed thematically.

**Results:** Six key themes were determined: Culture, family, and community; cancer outcomes and survivorship; psychological distress; geographic diversity and access to health care; cancer education and awareness; and lack of appropriate data. These themes culminated in four key recommendations to improve cancer care for Indigenous populations. These were the provision of co-designed and tailored information; bolstering the Indigenous cancer workforce; cultural training for non-Indigenous healthcare professionals; and the improvement of data collection both for research and in health services.

**Conclusion:** Indigenous culture was a potential facilitator in achieving optimal cancer care. The provision of care and information that respects Indigenous understandings of cancer and acknowledges the priority of family and community should be a standard for all health services, in all geographic locations.

Speaker: M. Varlow

Theme: 2. Cancer research & progress

Topic: Equity and cancer

#### 000224 | Thirty-year trends (1991–2020) in breast cancer incidence rates: Hanoi, Vietnam

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**Background:** Breast cancer is the most common cancer in Vietnam. However, there is a lack of contemporary data examining multi-decade and recent trends in the incidence rates of breast cancer in Vietnam and the factors affecting these trends.

**Aim:** This study provided a 30-year trend in breast cancer incidence rates, focusing on age, period, and cohort effects.

**Methods:** Breast cancer incidence data were obtained from the Hanoi Cancer Registry from 1991 to 2020. This study included 28,298

incident cases of breast cancer. Trend analysis using Joinpoint regression was performed to calculate the average annual percent change (AAPC) in the incidence rates of breast cancer, and a period-cohort analysis was used to evaluate age, period, and cohort-specific effects on breast cancer incidence trends.

**Results:** The age-standardized incidence rate (ASIR) increased from 15.2 in 1991 to 40.6 per 100,000 women in 2020, with an AAPC of 4.1% (95% CI: 2.9–5.4). The AAPC in the incidence rates of breast cancer was significantly different across age groups. Comparing the young population, the elderly population had a higher AAPC, with an AAPC of 2.6% (95% CI: 2.1–3.1) for women aged 40–49 and 6.4% (95% CI: 2.5–10.4) for women aged 70 years and older (all  $p$ -value <0.001). Additionally, compared to the reference period of 2001–2005, the breast cancer incidence rate in 2016–2020 was 1.6 times higher. Cohorts from 1976 to 1980 showed significantly higher ASIRs than women born in earlier cohorts.

**Conclusion:** This study demonstrates increasing trends and age, period, and cohort-specific effects on breast cancer incidence in Hanoi. Our findings provide insights for public health planning and developing targeted breast cancer prevention and control strategies.

#### References

1. Nguyen SM, Deppen S, Nguyen GH, Pham DX, Bui TD, Tran TV. Projecting Cancer Incidence for 2025 in the 2 Largest Populated Cities in Vietnam. *Cancer Control*. 2019;26(1):1073274819865274.
2. Nguyen SM, Deppen S, Nguyen GH, Pham DX, Bui TD, Tran TV. Projecting Cancer Incidence for 2025 in the 2 Largest Populated Cities in Vietnam. *Cancer Control*. 2019;26(1):1073274819865274.
3. Le Van Quang, Pham Xuan Dung, Tran Van Thuan, et al. Population-based cancer registry in Hanoi and Ho Chi Minh City. National Cancer Hospital; 2023. <https://nci.vn/sach/ghi-nhan-ung-thu-quan-the-ha-noi-va-thanh-pho-ho-chi-minh>

Speaker: N. Giang Huong

Theme: 2. Cancer research & progress

Topic: Epidemiology

#### 000317 | The garden of forking paths: Differences in genitourinary cancer epidemiological patterns between GLOBOCAN and GBD

Du T.-Q. \* (1)

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**Background:** The burden of genitourinary cancer is a significant challenge to global public health. Global Cancer Observatory (GLOBOCAN) and Global Burden of Disease (GBD) are currently the two most authoritative online cancer databases in the world. But the differences between the two databases could be a huge potential problem for the reliability of subsequent studies based on them. Additionally, it may result in radically divergent clinical and public health decisions for the same demographic, the same cancer type, and the same region.

**Aim:** This study will provide a comprehensive comparison and analysis of the differences in epidemiologic patterns of genitourinary cancer

between GLOBOCAN 2020 and GBD 2019 and attempt to present our hypotheses on the underlying causes of these differences.

**Methods:** Age-standardized incidence rates (ASIR) and age-standardized mortality rates (ASMR) of prostate, testicular, kidney, and bladder cancer were obtained from GLOBOCAN and GBD. Considering the representativeness and stability of the data, we only included countries with incidence or death number more than 1000 in both GLOBOCAN and GBD in the analysis. The top 5 countries with the greatest and smallest ASIR and ASMR differences between GLOBOCAN and GBD were identified. Systematic search of PubMed and Embase databases was also performed for comparison with the data in GLOBOCAN and GBD.

**Results:** In most countries, the ASIR of prostate (63/92), testicular (15/16), and bladder cancer (36/57), as well as the ASMR of prostate (60/62), kidney (24/26), and bladder cancer (28/29) showed a higher number in GBD than in GLOBOCAN. The countries with the greatest differences in ASIR are Lebanon (2.59 folds), China (4.12 folds), Indonesia (2.83 folds) and Pakistan (2.59 folds) in prostate, testicular, kidney, and bladder cancer, respectively. The countries with the greatest differences in ASMR are Pakistan (4.18 folds), Indonesia (2.80 folds), and Pakistan (3.38 folds) in prostate, kidney, and bladder cancer, respectively. The average ( $\pm$ standard deviation) ASIR ratios for prostate, testicular, kidney, and bladder cancer in countries with more than 1000 cases in both GLOBOCAN and GBD were 1.34 ( $\pm$ 0.30), 1.70 ( $\pm$ 0.78), 1.24 ( $\pm$ 0.32), and 1.30 ( $\pm$ 0.33), respectively. And the average ASMR ratio for prostate, kidney, and bladder cancer were 1.97 ( $\pm$ 0.66), 1.40 ( $\pm$ 0.33), and 1.57 ( $\pm$ 0.41), respectively.

**Conclusion:** The differences of the ASIR of testicular and bladder cancer, as well as the ASMR of prostate, kidney, and bladder cancer were observed between GLOBOCAN and GBD. Part of this comes from the natural differences in data collection and estimation between the two databases. More importantly, a significant number of low- and middle-income countries do not have well-established population-based cancer registries and healthcare administrative systems at the national or district level.

Speaker: T.-Q. Du

Theme: 2. Cancer research & progress

Topic: Epidemiology

#### 000341 | Circ-CADPS promotes liver metastasis of colorectal cancer by targeting miR-503-5p-mediated CCND2 and CCND3 signaling

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**Background:** Recently, more and more studies have found that circRNAs are involved in the development of various tumors. The objective of this study was to investigate the role of circRNAs in liver metastasis of colorectal cancer (CRLM).

**Aim:** To clarify the biological functions of most circRNAs and the underlying mechanisms in pathogenesis and progression including CRLM.

**Methods:** The circRNA expression profiles in four groups of CRLM liver metastases, primary tumor tissues and normal mucosal tissues were analyzed by Microarray. Real-time fluorescence quantitative PCR and Base Scope assay were used to detect the expression level of Circ-CADPS. The effect of Circ-CADPS on the progression of liver metastasis of colorectal cancer was then conducted by *in vitro* and *in vivo* functional experiments. The interaction mechanism between Circ-CADPS and miR-503-5p, cyclin D2 (CCND2) and cyclin D3(CCND3) was confirmed by qRT-PCR, western blot, IHC, double luciferase reporter assay, RNA pull-down assay and RNA immunoprecipitation assay.

**Results:** Circ-CADPS was significantly upregulated in both CRLM liver metastases and primary tumor tissues, and was more significantly upregulated in liver metastases, suggesting poor prognosis in patients with CRLM. Circ-CADPS can promote the proliferation and metastasis of colorectal cancer cells *in vitro* and *in vivo*. Mechanism analysis indicated that Circ-CADPS may act as a ceRNA (competitive endogenous RNA) of miR-503-5p to regulate CCND2 and CCND3, promoting the proliferation of colorectal cancer cells and liver metastasis.

**Conclusion:** Circ-CADPS binds to miR-503-5p through sponge adsorption, thereby up-regulating the expression of CCND2 and CCND3 and promoting CRLM. Our study suggests Circ-CADPS may be a potential new biomarker for the diagnosis and treatment of CRLM.

Speaker: W. Zhang

Theme: 2. Cancer research & progress

Topic: Advances in cancer aetiology

rhabdomyosarcoma (RMS). CRs submitted patient-level, depersonalized datasets with Tier 1 or Tier 2 staging information. Online training followed by quality assurance tests were used for standardization. Chi-square tests compared stage distribution between geographical areas defined in previous EUROCARE studies. Multivariable logistic models estimated Odds Ratios for metastatic stage at diagnosis compared to Central Europe (Austria, Belgium, France, Germany, Switzerland, and the Netherlands). 3-year overall survival by tumour type and stage were analysed using Kaplan-Meier methods.

**Results:** CRs from Australia, Brazil, Canada, Japan and 23 European countries participated. Analysis of 10,939 cases received showed stage completeness of 95% (tier1) and 89% (tier 2), 93% overall. The numbers of cases and proportions with metastases at diagnosis were NB ( $n = 3005$ , 48% (38%(M) + 10%(MS)); WT ( $n = 2245$ , 17%); MB ( $n = 1518$ , 31%(M1-M4); OS ( $n = 1606$ , 23%); ES ( $n = 1123$ , 32%); RMS ( $n = 1442$ , 27%). Stage distribution by area was statistically different for NB, WT, OS, and RMS, but not ES or MB. Not all CRs had access to optimal information to reconstruct stage or to discuss ambiguous cases with clinicians.

3 year overall survival for all cases were 95%(WT); 83%(NB); 79% (MB); 75%(OS); 76%(ES); 76%(RMS). For all 6 tumours a gradient was present in 3-year survival by stage; large differences were observed in the 3 sarcomas, with 3 yr survival of 44%, 48% and 53% for metastatic disease for RMS, OS, and ES respectively, compared to 95% for stage 'I' RMS, 83% and 88% respectively for localized OS and ES. MB showed the largest gap between M0 (85%) and M4 (25%).

Significant variation in overall survival by area was detected for most of the tumour types. For NB, adjustment by stage at diagnosis had the greatest impact on the significance of this geographic variation.

**Conclusion:** CRs have successfully applied the TG, shared data on stage at diagnosis and reported 3 yr survival by stage at a population-level. Variation in stage at diagnosis contributes to explaining international differences in overall survival for some childhood cancers. The BENCHISTA Project is strengthening collaborative relationships between CRs and clinicians to interpret geographic variations in childhood cancer.

#### References.

- Lopez-Cortes A, Didonè F, Botta L, Hjalgrim LL, Jakab Z, Canete Nieto A, Stiller C, Zeller B, Gatta G, Pritchard-Jones K; BENCHISTA Project Working Group. Cancer data quality and harmonization in Europe: the experience of the BENCHISTA Project—international benchmarking of childhood cancer survival by stage. *Front Oncol*. 2023 Aug 22;13:1232451. doi: <https://doi.org/10.3389/fonc.2023.1232451>. PMID: 37675230; PMCID: PMC1047775. Botta L, Gatta G, Didonè F, Lopez Cortes A, Pritchard-Jones K; BENCHISTA Project Working Group. International benchmarking of childhood cancer survival by stage at diagnosis: The BENCHISTA project protocol. *PLoS One*. 2022 Nov 3;17(11):e0276997. doi: <https://doi.org/10.1371/journal.pone.0276997>. PMID: 36327231; PMCID: PMC9632762.

Speaker: K. Pritchard-Jones

Theme: 2. Cancer research & progress

Topic: Cancer registries and their impact on cancer control planning and evaluation

## 000421 | International benchmarking of childhood cancer survival by tumour stage: First results of the BENCHISTA project

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**Background:** There are international differences in childhood cancer survival. This may be due to variation in tumour stage at diagnosis between countries.

**Aim:** The BENCHISTA project aims to test this hypothesis through use of the international consensus Toronto Stage Guidelines (TG) for childhood cancers by Population Based Cancer Registries (CRs).

**Methods:** Participating CRs collected TG at diagnosis for all incident cases of six paediatric solid tumours diagnosed in a 3-4-year period between 2014 and 2017: neuroblastoma (NB); Wilms tumour (WT); medulloblastoma (MB); osteosarcoma (OS); Ewing sarcoma (ES);

**000459 | Single-cell transcriptomic analysis reveals that the proliferative capacity of tumor-infiltrating B cells determines the indolent fate of papillary thyroid carcinoma**

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**Background:** Given the excellent prognosis and indolent clinical characteristics of most papillary thyroid carcinoma (PTC), active surveillance approach management has become a safe and effective alternative to immediate surgery to mitigate the transition from over-diagnosis to overtreatment of PTC. However, the precise diagnosis and treatment of PTC remains challenging with the lack of knowledge of the indolent mechanism.

**Aim:** To explore the diagnostic and prognostic markers with clinical availability of indolent PTC.

**Methods:** Based on a prospective cohort of low-risk PTC patients who underwent active surveillance management, a total of 11 early-stage PTC primary tumors (4 indolent, 6 progressive, and 1 with Hashimoto's disease) were performed single-cell transcriptome sequencing to identify the distinct cell clusters between difference clinical feature samples. Subsequently, the cell migration, cell proliferation, cell cycle, cell coculture experiments, and multiplex immunofluorescence staining were examined to further confirm the important role of tumor-infiltrating B (TIL-B) cells in the indolent behavior of PTC, in additional 25 samples. Finally, the TCGA database was used to validate the association of the related markers with T-stage and prognosis of in patients with PTCs.

**Results:** The data revealed that there were a certain number of TIL-B cells and exclusive germinal center B (GC-B) cells in indolent PTC. In vitro experiments confirmed that TIL-B cells could directly inhibit the proliferation of PTC cells with concentration dependent characteristics. Both indolent and progressive PTC have recruitment ability for peripheral B cell, but there is a significant difference in the proliferation ability of TIL-B cells between the two groups, which may be caused by the unique GC-B cells in the tumor microenvironment of indolent PTC. Trans activation of the surface membrane protein CD22 in the GC-B cells cluster may be the initiating factor of the TIL-B cells proliferation. Moreover, multiplex immunofluorescence staining showed the formation of specific TIL-B cell aggregation areas and tertiary lymphoid structures within the indolent PTC tumor. Finally, we further validated the potential of GC-B cell specific markers such as LMO2 as diagnostic and prognostic markers for indolent behavior of PTC using TCGA data.

**Conclusion:** Our study provides a comprehensive understanding of heterogeneity of early-stage PTC and the unique immune molecular characteristics of indolent PTC. The proliferation of TIL-B cells promoted by GC-B cells is a significant determinant of the indolent fate of PTC, and the development of GC-B cell markers will mitigate the overtreatment and accelerate the precise diagnosis and of PTC.

Speaker: W. Liu

Theme: 2. Cancer research & progress

Topic: Cancer classification

**000531 | Global burden and trends in colorectal cancer among young adults: analyses of the Cancer Incidence in Five Continents (CI5) Plus**

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**Background:** Previous studies have shown that colorectal cancer incidence is increasing among young adults (ages < 50 years) in multiple high-income Western countries despite decreases in older adults. However, a comprehensive global examination of young-onset colorectal cancer for the most recent years of diagnosis is lacking.

**Aim:** Examine the burden and trends in colorectal cancer incidence in young adults.

**Methods:** The GLOBOCAN 2022 data were used to describe the estimated incidence of colorectal cancer (C18-C20) across 185 countries and 21 regions, as well as to examine its correlation with Human Development Index (HDI). Data from Cancer Incidence in Five Continents plus were used to analyze trends in age-standardized incidence rates across 50 countries or territories through 2017, with initial diagnosis years ranging from 1943 to 2003. Temporal trends were visualized using the Lowess regression and quantified by estimating the latest 10-year average annual percentage change (AAPC) with Joinpoint regression. All analyses were stratified by age (25–49 years, 50–74 years).

**Results:** In 2022, the incidence rate of colorectal cancer in young adults (25–49 years) per 100,000 persons varied up to 20-fold across countries, ranging from less than 1 in Sierra Leone and Belize to 20 in Australia. Incidence rates in young adults showed a strong correlation with HDI ( $\rho = 0.70$ ), albeit somewhat less pronounced than in old adults (50–74 years;  $\rho = 0.85$ ). During the past decade, incidence rates of colorectal cancer in young adults were stable in 26 countries and increased in 24 countries (AAPC, 0.5%–4.6%), 14 of which had stable (Puerto Rico, Norway, Argentina, France, Ireland) or decreasing (England, Canada, Australia, New Zealand, Germany, the United States, Israel, Scotland, Slovenia) trends in old adults. For the 10 countries with increasing trends in both groups, the increase in young compared to old adults was faster in Chile, Japan, Sweden, Finland (AAPC, 0.9%–4.6% vs. 0.3%–2.2%), slower in Thailand, Denmark, Costa Rica (AAPC, 1.4%–3.1% vs. 2.2%–4.0%), and similar in Türkiye, Ecuador, The Netherlands (AAPC, 1.2%–2.2%).

**Conclusion:** Increases in colorectal cancer incidence confined to young adults were found in 14 of the 50 countries studied. This expansion of previous findings now includes France, Israel, and Puerto Rico in diverse geographical areas. Research into risk factors is warranted to identify primary contributors to the rise in colorectal cancer in young adults while continuing surveillance efforts to monitor the trends to inform prevention policy.

Speaker: H. Sung

Theme: 2. Cancer research & progress

Topic: Epidemiology

**000539 | Active surveillance for prostate cancer—The lived experience. A systematic review and metasynthesis**

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**Background:** Prostate Cancer is one of the most prevalent cancers to impact men worldwide.<sup>1</sup> Active surveillance (AS) is accepted as a recommended treatment option for some forms of localised prostate cancer. However, concerns have been raised about the toll this treatment can have on men, highlighted by the approximately 40% of men that cease active surveillance without clinical indication and despite comparable survival outcomes.<sup>2</sup>

**Aim:** The aim of this review is to explore the survivorship needs of men with prostate cancer undergoing AS.

**Methods:** A systematic review and meta-synthesis of qualitative studies was undertaken according to PRISMA guidelines in conjunction with a three-stage thematic synthesis (categorising, distilling, and developing new meaning from the data). Studies were included if they reported the lived experience of men who had commenced AS, without having undergone any previous treatment(s). Studies were excluded if they included participants that had undergone previous treatment for their prostate cancer, addressed clinical needs, as opposed to survivorship needs or reported data on men on watchful waiting, unless data for men on active surveillance was able to be clearly extrapolated.

**Results:** Thirteen studies met the inclusion criteria from 3226 studies, garnered from five databases. Two key themes were identified; confidence in active surveillance as a treatment and impacts of active surveillance on wellbeing. Living with an untreated cancer, ongoing surveillance requirements and feelings of isolation adversely impact wellbeing. To counter, men employ both proactive and avoidant coping strategies. Underpinning men's confidence and wellbeing is a hierarchy of unmet information needs influenced by therapeutic relationships with the treating team and the impact of discordant terminology undermining the required diligence for adherence to a surveillance protocol.

**Conclusion:** There are multiple factors influencing men's lived experience on AS. It is imperative to understand the specific survivorship care needs of this cohort to enable optimal support provision for men on AS and promote adherence to treatment. Further research into understanding men's unmet survivorship needs is essential.

**References**

- 1.Sung, H., et al., Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians, 2021. 71(3): p. 209–249.
- 2.Beckmann, K., et al., Developing a consensus statement for psychosocial support in active surveillance for prostate cancer. BJUI Compass, 2022.

Speaker: R. Briggs

Theme: 2. Cancer research & progress

Topic: Cancer and well-being / physical activity /quality of life

**000556 | Introducing WHIRI; A 10 year journey to develop an Indigenous led cancer care model for Aotearoa New Zealand**

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**Background:** Māori are twice as likely to die after a diagnosis of cancer compared to non-Māori in Aotearoa, New Zealand (AoNZ). Māori receive delayed lower quality treatment, and those with comorbidities are undertreated. Māori require better advanced care coordination. We aimed to develop a model of care where a cancer journey results in positive engagement with the health system, timely access to high quality investigations and care, and well-being gain for individuals and their families. This presentation will include the WHIRI origin story and two cancer studies.

**Aim:** The Cancer WHIRI I team sought to co-design, implement and evaluate a holistic cancer service using WHIRI, an established Māori model of care. This comprehensive, racism-free, wellbeing enhancing model was redesigned for the early part of the secondary care cancer pathway from referral to hospital with a potential diagnosis of cancer through to first treatment. The multisite Cancer WHIRI II study extends the model and will develop and test an implementation toolkit.

**Methods:** WHIRI includes navigation, electronic holistic needs assessment and nurse led case management. The nurse is supported by a general practice doctor with connections to hospital teams, daily clinical reviews and a team responsible for making system changes. Kaupapa Māori methodology involved working in partnership with patients, families, cancer clinicians, Māori navigators, Te Aho o Te Kahu (National Cancer Agency) and Hei Ahuru Mowai—Māori Cancer Leadership AoNZ. The He Pikinga Waiora Māori Implementation Framework was used as a guide. Cancer WHIRI I was piloted at Waikato Hospital and Cancer WHIRI II extends the pathway to completion of treatment with implementation at Waikato and Auckland sites. Auckland accounts for around 1/3 of AoNZ's population and largest Polynesian population in the world.

**Results:** The co-designed Cancer WHIRI model includes patient and family centred care; enhanced relationships; maximised wellbeing and equity gain across multiple spheres; systems level changes; and Māori autonomy/tino rangatiratanga. Analyses will be completed in time for the World Cancer Congress 2024 presentation. Opportunities for implementing the Cancer WHIRI model are being explored on multiple fronts.

**Conclusion:** The Cancer WHIRI model has potential to expand nationally with reach from primary care and cancer screening through to hospital and palliative care. The team aims to drive implementation on a national scale and to also develop international reach.

Speaker: N. Scott

Theme: 2. Cancer research & progress

Topic: Equity and cancer

**000699 | Supporting cancer clinicians and researchers to provide culturally inclusive care to Indigenous Australians: An e-learning resource**

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**Background and context:** Cancer inequities for Indigenous people remain a significant public health issue in Australia. Indigenous Australians experience higher rates of cancer incidence, mortality, and lower survival rates than other Australians. Equity must be at the centre of health services, policies and research if we are to redress the unacceptable association between cancer outcomes, experience and disadvantage. Enablers to improved outcomes include cultural safety, effective communication and access to appropriate resources and tools.

**Aim:** We aimed to develop e-learning modules to provide cancer clinicians and researchers with increased understanding of culturally inclusive clinical and research practices.

**Strategy/tactics:** Three e-learning modules were developed by an expert stakeholder group which included First Nations researchers, guided by adult learning principles. A webinar provided participants with practical examples of implementation. The modules were promoted through cancer professional networks and cancer clinical trials groups to their membership.

**Programme/Policy:** Equity must be at the centre of health services, policies and research if we are to redress the unacceptable association between cancer outcomes, experience and disadvantage.

**Process:** Online education modules developed in collaboration between a Centre of Research Excellence (TACTICS) and The Psycho-oncology Co-operative Research Group (PoCoG).

**Outcomes:** To date, over 2000 participants have completed the modules. Evaluations confirm participants perceive increased knowledge and confidence in working with Indigenous Australians.

**What was learned:** Building workforce skills, knowledge and confidence is crucial to address the disparities in cancer outcomes experienced by Indigenous people. These on-line training modules have demonstrated high uptake and acceptability among clinicians and researchers working across cancer care.

Speaker: G. Garvey

Theme: 2. Cancer research & progress

Topic: Inequities in cancer care

**000821 | Breast cancer in young women in Uruguay: Recent incidence and mortality trends**

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**Background:** Breast cancer (BC) is the leading cause of cancer incidence and mortality among Uruguayan women. Although incidence rates (IR) remained stable, a sustained decrease was observed in mortality rates (MR) including all ages. (1) Some researchers pointed out that the downward trend stopped in MR in recent years for younger women (2).

**Aim:** To explore incidence and mortality time trends for young women in Uruguay, in order to identify differential patterns compared to the general population.

**Methods:** BC mortality data from 1990 to 2020, and BC incidence data from 2002 to 2019 were considered. Age-period-cohort (APC) models and Joinpoint (JP) analysis were performed. APC was conducted using 5-year age groups and 5-year periods (1991–2020 and 2000–2019). JP was performed for: 20–44; 45–69 and 70+ years. The group 20–44 was defined based on the values of the local drifts and the exploratory APC analysis. The second group was selected until the age of termination of screening recommendation. Results are expressed as Estimated Annual Percent of Change (EAPC) and their confidence intervals. JP software (NCI), APC Analysis Tool (NCI) and Epi library of R software were used for calculation.

**Results:** 34,113 BC cases and 19,582 deaths were registered. Stable incidence rates (IR) (EAPC = -0.08% [-.51;.35]) and decreasing mortality rates (MR) (EAPC = -0.91% [-1.14; -0.67]) were confirmed for all age groups included. Incidence rate steadily increased (EAPC = 0.90% [0.29;1.51]) for the youngest women (20–44). Considering the cohort parameters, the risk is stable with a possible increase in risk in recent cohort for women born around 1990 (Rate Ratio (RR) 1.28). Considering the period effect, after a decrease, the risk rises 3% in the last period. Regarding Mortality, rate trends for women aged 20–44, after an initial decline, observed until 2010 (EAPC = -2.07% [-3.00; -1.13]), the MR stabilized after. The local drift showed smoother declines in the younger and elder age groups when compared with women in the intermediate ages, displaying a U shape. Cohort effects confirmed a monotonous decline in RR among women born after 1920, with a possible increase among those born after 1985. Considering all drifts attributable to a period effect, a uniform decline in RR with a possible increase in the most recent period is also appreciated.

**Conclusion:** For young women below the age 45 in Uruguay, breast cancer Incidence rate displayed increasing trends along the study period and Mortality rate stopped declining, shifting the trend observed from 1990 to 2010, contrasting with BC trends in general population.

**References**

Hendrick R, Helvie M, Monticciolo D. Breast Cancer Mortality Rates Have Stopped Declining in U.S. Women Younger than 40 Years. Radiology 2021 Apr;299(1):143-149. doi: <https://doi.org/10.1148/radiol.2021203476>

Gara M, Alonso R, Musetti C, Barrios E. Cancer incidence and mortality in Uruguay: 2013–2017. *Colomb Med*. 53(1). 2022. doi: <https://doi.org/10.25100/cm.v53i1.4966>.

Speaker: R. Alonso

Theme: 2. Cancer research & progress

Topic: Cancer registries and their impact on cancer control planning and evaluation

#### 000858 | The HypoAfrica study: Improving treatment outcomes through radiation oncology quality assurance

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**Background:** The rising cancer incidence and mortality in sub-Saharan Africa warrants an increased focus on adopting evidence-based approaches—such as hypofractionated radiotherapy (HFRT)—that enhance treatment accessibility. HFRT, which delivers fewer fractions of radiotherapy at larger doses per fraction than conventional radiotherapy, substantially increases access to radiotherapy by reducing overall treatment cost and duration for patients while also reducing the burden on limited personnel and infrastructural resources. A multi-center phase II study (HypoAfrica) at four sites in Ethiopia, Nigeria, South Africa, and Tanzania was launched to investigate the feasibility of applying moderate HFRT for the treatment of localized prostate cancer in the African context.

**Aim:** Radiotherapy quality assurance (RQA) has been found to correlate positively with patient survival, and it is even more critical when administering higher intrafraction doses of radiation, as is done with HFRT. The aim of this project is to leverage existing technologies to augment HypoAfrica trial sites' RQA procedures.

**Methods:** RQA procedures implemented included developing a protocol for linear accelerator QA using radiochromic film dosimetry and

FilmQA Pro software, deploying the Virtual EPID Standard Platform Audit (VESPA) for remote radiotherapy credentialing, and measuring the consistency of quality across the trial sites using Klion—an online QA data management tool.

**Results:** Film dosimetry was launched in Tanzania, resulting in quality and resource improvements. The sites passed their external VESPA audits, performing on par with sites across the world that had undergone the audit. The audit results are considered valid for 5 years or until the sites change their accelerator or treatment planning system. Quarterly reviews of the sites' beam outputs, uniformity, and center shifts over time were performed, indicating that the machines' performances were within acceptable limits.

**Conclusion:** Clinical trials such as HypoAfrica are critical towards producing evidence demonstrating the efficacy of cancer treatments in African patients. Digital technologies provide useful tools to monitor trial sites' treatment quality and RQA procedures. As more African facilities continue to invest in oncology services and perform clinical trials, a regional RQA auditing system should be considered.

#### References

Irabor OC, Swanson W, Shaukat F, Wirtz J, Mallum AA, Ngoma T, Elzawawy A, Nguyen P, Incrocci L, Ngwa W. Can the Adoption of Hypofractionation Guidelines Expand Global Radiotherapy Access? An Analysis for Breast and Prostate Radiotherapy. *JCO Glob Oncol*. 2020 Apr;6:667–678. doi: <https://doi.org/10.1200/JGO.19.00261>. PMID: 32343628; PMCID: PMC7193821., Miri N, Lehmann J, Legge K, Vial P, Greer PB. Virtual EPID standard phantom audit (VESPA) for remote IMRT and VMAT credentialing. *Phys Med Biol*. 2017 Jun 7;62(11):4293–4299. doi: <https://doi.org/10.1088/1361-6560/aa63df>. Epub 2017 Mar 1. PMID: 28248642.

Speaker: W. Ngwa

Theme: 2. Cancer research & progress

Topic: Radiotherapy

#### 001016 | The socioeconomic impact of cancer on patients and their relatives: Consensus definition

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**Background:** Cancer treatment advancements have prolonged patients' lives, but both the disease itself and the associated

treatments often result in financial burdens such as out-of-pocket expenses and income loss. Despite global research efforts, no standardized definition exists related to the financial hardship of cancer on patients and their relatives.

**Aim:** Our objective was to describe current terminology around the concept of financial hardship for cancer patients and their relatives and to propose a unified concept and definition that can be used as a standard by other researchers, healthcare practitioners, policymakers, and stakeholders, with a particular focus on Europe.

**Methods:** The Health Economics Working Group of the Organisation of European Cancer Institutes (OECI) established a task force to enhance awareness and expertise about the socioeconomic impact of cancer on patients and their relatives. To reach consensus on a definitive concept and definition, we conducted an analysis of current terminology and definitions related to the financial impact after a cancer diagnosis, drawing from a subset of articles identified in a prior literature review.<sup>1</sup> This analysis informed the development of questionnaires for task force members, experts in cancer care and research, to complete. We employed the Delphi method to gain consensus. The questionnaires addressed various aspects, including the structure of terminology, consideration of connotations and severity levels, integration of framework components,<sup>1</sup> and decisions regarding the inclusion of different groups (e.g., patients, families, and caregivers) and potential confounding factors.

**Results:** Fourteen experts completed the first round of the questionnaire. In the second round, completed by 12 experts, all confirmed the use of a neutral connotation and agreed that “socioeconomic” provided the broadest scope. The final consensus proposed the following term, “the socioeconomic impact,” and definition, “The socioeconomic impact of cancer on patients and their relatives describes the changes in the social and economic components of their quality of life due to cancer, attributable to out-of-pocket expenses, loss of income, or both.”

**Conclusion:** This consensus supports future research and the development of instruments to comprehensively study the socioeconomic impact of cancer from the patients' perspective.

#### References

1. Schlander, M. et al. “The socioeconomic impact of cancer on patients and their relatives: Organisation of European Cancer Institute's task force consensus recommendations on conceptual framework, taxonomy, and research directions.” *The Lancet. Oncology* vol. 25,4 (2024): e152-e163. doi: [https://doi.org/10.1016/S1470-2045\(23\)00636-8](https://doi.org/10.1016/S1470-2045(23)00636-8).

Speaker: R. Eckford

Theme: 2. Cancer research & progress

Topic: Implementing effective research strategies and communicating outcomes

#### 001239 | Socioeconomic inequalities in second primary cancer incidence: A competing risk analysis of women with breast cancer in England between 2000 and 2018

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**Background:** Breast cancer survival has substantially improved due to early detection and advances in treatment, leading to a greater risk of second primary cancer (SPC). In England, data on SPC incidence among women firstly diagnosed with breast cancer are scarce.

**Aim:** We aimed to investigate socioeconomic inequalities in SPC incidence among breast cancer survivors.

**Methods:** We used Data from National Cancer Registration and Analysis Service in England to construct a cohort of all women diagnosed with a first primary breast cancer (PBC) between 2000 and 2018 and aged between 18 and 99 years. Our main exposure was income deprivation, derived from Index of Multiple Deprivation 2015 and based on the Lower Super Output Area of patient's residence at the date of their PBC diagnosis. We followed up these women from 6 months after the PBC diagnosis until a SPC event, death, or 31 December, 2019, whichever came first. PBC survivors may die without a SPC event, and this corresponds to a competing risks situation. We used flexible parametric models and adjusted for age and year of PBC diagnosis, ethnicity, PBC tumour stage, comorbidity and PBC treatments to model the cause-specific hazards for SPC incidence and for death. Directly adjusted cumulative incidences were derived to contrast the risk of SPC incidence by deprivation. Multiple imputation was performed to account for missing data on ethnicity and stage.

**Results:** Among 668,398 included women, 47,399 SPCs and 186,326 deaths occurred during 4,706,701 person-years of follow-up. The crude SPC incidence rate was 11.6 (95% confidence interval [CI]: 11.3, 11.8) per 1000 person-years in the most deprived vs. 9.2 (9.1, 9.4) in the least deprived quintile. In multivariable models, income deprivation was consistently associated with an increased risk of SPC incidence (Cause-Specific Hazard Ratio [CSHR] the most vs. least deprived quintile: 1.29; 95% CI: 1.24, 1.31) and death (CSHR: 1.36; 1.34, 1.49), and there was a clear trend along with increasing deprivation (Figure 1). These estimates translated into an absolute risk difference (the most vs. least deprived quintile) of 1.1% (95% CI: 0.9, 1.3) for SPC incidence and 4.9% (95% CI: 4.7, 5.2) for death at 10 years (Figure 2).

**Conclusion:** Women diagnosed with PBC from deprived areas in England faced a substantially higher risk of SPC than those from less deprived areas, making strategies specifically designed for monitoring, preventing, and identifying SPC at an early stage essential to minimise disparities in SPC among women suffering from breast cancer.

Speaker: S. Ling

Theme: 2. Cancer research & progress

Topic: Equity and cancer

#### 001339 | Communication skills training needs and preferences among oncology providers in Rwanda

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**Background:** International guidelines urge communication skills training (CST) for all oncology providers; however, both patient-provider communication and CST are strongly influenced by cultural context. Research is needed to determine optimal CST approaches in diverse settings.

**Aim:** We aimed to understand the CST needs and preferences among oncology providers at Butaro Hospital and culturally adapt and pilot test a leading CST tool, *Ariadne Labs' Serious Illness Conversation Guide (SICG)*, for the Rwandan context.

**Methods:** We translated SICG to Kinyarwanda and recorded a video of local actors roleplaying SICG. Three focus groups discussions with multidisciplinary oncology providers were conducted. A discussion guide to elicit feedback on SICG was used. The focus groups were audio-recorded and transcribed. Thematic analysis was performed using MAXQDA software. Findings were applied to modify a SICG-based CST for the Rwandan context. We pilot tested this adapted CST among clinical psychologists in Rwanda.

**Results:** A total of 17 oncology providers participated in 3 focus groups, including 6 oncology physicians, 7 nurses, 2 psychologists, and 2 social workers. Participants unanimously reported that “breaking bad news,” that is, disclosure of diagnosis/prognosis, is the most challenging, with emotionally distressing effects on both patients and clinicians. While some were taught communication skills in training, participants believed additional training is needed to respond to real world clinical situations. A combination of CST methods was suggested, with role play, group discussion, and role-modeling preferred over lecturing. SICG was appreciated for giving patients time to express their feelings. However, participants believed it might take too much time, and suggested including only key points. Participants strongly recommended that CST include “self-care techniques” to address clinicians’ burnout and adaptations to local language and culture to make communication natural. A pilot training conducted among 15 oncology psychologists provided more information for the ongoing adaptation.

**Conclusion:** CST is highly needed in Rwanda to address training gaps and alleviate distress resulting from difficult patient-provider communication. SICG was well received. Our findings are being used to further adapt and implement CST for the Rwandan setting. This cultural adaptation approach is potentially generalizable to other clinical settings.

Speaker: P. Uwamahoro

Theme: 2. Cancer research & progress

Topic: Delivery of health information.

#### 001439 | Mentorship as a pathway to generating high quality cancer data for data-driven decision making in sub-Saharan Africa

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**Background:** A cancer registry is a golden resource for countries to monitor progress of several interventions for cancer control. Registries are vital in providing data to inform decision making, research priorities as well as tracking implemented programs. Surprisingly, cancer registries in some Sub-Saharan Africa (SSA) states are not institutionalized, and operate as research projects and therefore receive insufficient or no government support which ultimately, translate to inconsistency in the cancer data which is a recipe of low-quality data. In SSA region, few registries have high quality data, and published under the prestigious cancer incidence in five continents (CI-5 volumes). For these reasons, Nairobi population-based cancer registry at the Kenya Medical Research Institute was inaugurated as the International Agency for Research on Cancer- Global Initiative for Cancer Registry Development (IARC-GICR) Centre for Expertise for SSA region.

**Aim:** The core mandate of the Centre is to conduct trainings, develop and implement mentorship programme, and offer technical support to registries in the region. We share the lessons learned from three cohorts who have gone through the trainings and mentorship program.

**Methods:** The IARC-GICR Center for Expertise for SSA utilized both virtual and onsite training and mentorship modules using predesigned course modules for basic, and advanced cancer registration. Pre- and post-assessment surveys were administered at different stages to track progress and training outcomes.

**Results:** On average, the center has trained over 135 surveillance officers from 37 cancer registries, and 17 countries in Sub-Saharan Africa. Interesting to note the high number of participants, 15 (34%) in cohort one and 168 (52%) in cohort three who have never participated in any cancer registry training apart from the on-the-job trainings. 70% indicated lack of a continuous training /mentorship program in the registries. Furthermore, 30% pointed out lack of regular data cleaning in the registry indication of a glaring gap. Major setback in registry operations is institutionalization of registries, 57% have institutional support to access trainings and capacity building efforts. A significant proportion, 82% were confident that training and mentorship experience will be very much useful in their work and efforts towards attaining quality data.

**Conclusion:** In order to achieve high-quality data for decision making, consistent training and mentorship, institutionalization of registries, and leveraging on existing expertise in the region is inevitable.

Speaker: E. Kiptanui

Theme: 2. Cancer research & progress

Topic: Cancer registries and their impact on cancer control planning and evaluation

### Theme 3: Healthcare systems & policies

#### 000024 | Advancing healthcare professional education: insights from 20 years of the “e-oncología” e-learning platform

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**Background and context:** Established in 1995, the Catalan Institute of Oncology (ICO) has been a pioneer in cancer care in Spain, focusing not only on interdisciplinary patient-centered approaches, research, and innovation but also on training. Given the upward trend in cancer incidence and associated mortality (projected 24% increase in cancer mortality in the EU by 2035), there is a critical need for targeted and adaptable cancer education. In response, ICO launched ‘e-oncología’ in 2004, a pioneering online e-learning platform aiming to transform cancer education.

**Aim:** The primary objective of ‘e-oncología’ is to surpass traditional educational methods and establish strong knowledge networks among institutions, specialists, healthcare professionals, educators, and other disciplines involved in cancer care. The goal is to provide cutting-edge, high-quality education to improve cancer prevention, diagnosis, research, and treatment. Another aim of the initiative is to spread knowledge and foster collaborations in both educational and research aspects of cancer teaching.

**Strategy/tactics:** The ‘e-oncología’ instructional model prioritizes learner-centricity by customizing educational programs to individual profiles and needs. Expert-led coordination ensures program quality, with a dual tutoring approach (proactive for scheduled courses and reactive for flexible ones) maintaining a 70% activity threshold for certification. A Cascade Model, exemplified by ‘Train the Trainers’, enables professionals to tutor local editions. Strategic alliances with ICO and national/international institutions ensure culturally adapted, accessible, and high-quality education. Course accreditation as continuing medical education highlights the commitment to the highest standards of medical education.

**Programme/Policy:** The training programs cover various cancer-related fields in formats ranging from webinars to postgraduate courses. ‘e-oncología’ is economically sustainable through grants, institutional agreements, and educational sponsorships.

**Process:** The pedagogical team oversees the program methodology, supports authors, disseminates information, and participates in conferences. On the other side, the expert team is responsible for coordinating, tutoring, and ensuring scientific rigor.

**Outcomes:** With over 83,000 students worldwide and 2350 h of virtual training, leveraging the expertise of more than 270 experts, ‘e-oncología’ is a key player in advancing cancer education and expanding its global reach.

**What was learned:** The success of ‘e-oncología’ stems from its learner-centric approach, accessibility, strategic partnerships, economic sustainability, and adaptability. The Cascade Model boosts scalability, and the dual tutoring approach ensures engagement. These insights provide replicability potential for similar initiatives.

Speaker: D. Moreno-Alonso

Theme: 3. Healthcare systems & policies

Topic: Global education and training initiatives: building stronger networks

#### 000030 | Inspiration to action: Structured collaboration in advancing medical imaging in the fight against breast and cervical cancer

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**Background and context:** The global cancer burden is predicted to rise by 29–37 million new cancer cases between 2020 and 2040, with the greatest increases estimated in low- and middle-income countries (LMICs) [1]. Breast cancer is the most common cancer worldwide, while cervical cancer remains the fourth-most common cancer in women globally, both disproportionately affecting LMICs [2, 3]. As the epidemic expands, 1 in 5 individuals worldwide can now expect a cancer diagnosis [4]. The value of relevant medical imaging infrastructure is embedded in clinical guidelines but has been understated to date in public health initiatives.

**Aim:** The aim is to report several deliberate victories to date, persistent challenges, and the way forward for broaching continued inequities and insufficiencies in imaging access, focussing upon the importance of earlier detection; and improved point-of-care triage of those with advanced disease, appropriately guided by imaging staging where available.

**Strategy/tactics:** Aligned with the global public health agenda, this paper will examine where medical imaging fits among key quality indicators to improve population-based outcomes for patients afflicted with breast or cervical cancer, including essential image-guided procedures like biopsies. How can we further translate relevant commitments into action, as aligned with Setting Up a Cancer Center: a WHO-IAEA Framework, and knowledge hubs like the IAEA Rays of Hope Anchor Centres [5,6,7]

**Programme/Policy:** This body of work builds upon U.N. Sustainable Development Goal (SDG) 3 for health: inclusive of health systems strengthening; delivering better health and well-being of people across the life course; and advancing universal health coverage.

**Process:** Lessons have been learned while undertaking IAEA in-country work to improve medical imaging infrastructure for cervical and breast cancer, including as linked with the Lancet Oncology Commission on Medical Imaging and Nuclear Medicine, and development of the IMAGINE (IAEA Medical Imaging and Nuclear Medicine Global Resources) database [8].

**Outcomes:** Highlighted herein are where quality imaging modalities fit as essential elements to achieving known quality indicators for cancer management—patient-centred, population-based, sustainable global breast and cervical cancer imaging strategies that can help broach persistent gaps in achieving implementation milestones for

comprehensive cancer care—advanced through prioritized and innovative partnerships—coordinated at all levels including from the grassroots up, emphasizing patient awareness and engagement.

**What was learned:** In Sub-Saharan Africa, few public hospitals can perform mammographically-guided breast biopsies. Imaging is an intermediate step in the patient pathway rather than one which improves survival; this has largely left imaging out of key strategic dialogues, which focus upon either prevention or therapies. Point-of-care ultrasound to evaluate cervical cancer is scarce as is image-guided palliation (nephrostomy and ureteral stents) for advanced cervical cancer. Staging data are likewise flawed since requisite imaging is insufficient in LMICs.

## References

- [1] World Health Organization, “Cancer Tomorrow,” [gco.iarc.fr/tomorrow/en/dataviz/bubbles?sexes=0](https://gco.iarc.fr/tomorrow/en/dataviz/bubbles?sexes=0).
- [2] World Health Organization, “The Global Breast Cancer Initiative,” [www.who.int](https://www.who.int/initiatives/global-breast-cancer-initiative), 2023. <https://www.who.int/initiatives/global-breast-cancer-initiative>
- [3] World Health Organization, “Cervical Cancer,” World Health Organization, Nov. 17, 2023. <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>
- [4] World Health Organization, “WHO launches new campaign to amplify the lived experience of people affected by cancer,” [www.who.int/news/item/18-10-2022-who-launches-new-campaign-to-amplify-the-lived-experience-of-people-affected-by-cancer](https://www.who.int/news/item/18-10-2022-who-launches-new-campaign-to-amplify-the-lived-experience-of-people-affected-by-cancer)
- [5] International Atomic Energy Agency, “Setting Up a Cancer Centre: A WHO–IAEA Framework,” [www.iaea.org](https://www.iaea.org/publications/15052/setting-up-a-cancer-centre-a-who-iaea-framework), 2022. <https://www.iaea.org/publications/15052/setting-up-a-cancer-centre-a-who-iaea-framework>
- [6] International Atomic Energy Agency, “Rays of Hope,” [www.iaea.org](https://www.iaea.org/services/rays-of-hope), Feb. 01, 2022. <https://www.iaea.org/services/rays-of-hope>
- [7] International Atomic Energy Agency, “Rays of Hope Anchor Centres,” [www.iaea.org](https://www.iaea.org/services/rays-of-hope/anchor-centres), Dec. 06, 2022. <https://www.iaea.org/services/rays-of-hope/anchor-centres> (accessed Feb. 06, 2024).
- [8] International Atomic Energy Agency, “IMAGINE—IAEA Medical imAGING and Nuclear mEdicine global resources database” [humanhealth.iaea.org](https://humanhealth.iaea.org/HHW/DBStatistics/IMAGINE.html). <https://humanhealth.iaea.org/HHW/DBStatistics/IMAGINE.html>

Speaker: M. Mikhail-Lette

Theme: 3. Healthcare systems & policies

Topic: Imaging

## 000039 | Advancing LGBTQI+ cancer care in Europe: Co-creating holistic policy recommendations for enhanced patient outcomes using insights from Delphi

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**Background and context:** Cancer within the LGBTQI+ community poses a multifaceted challenge in the realm of public health,

demanding nuanced and comprehensive approaches to address its complexities. While this area has garnered increasing attention in recent years, a pivotal necessity remains to translate discourse into actionable steps that substantively enhance patient outcomes throughout Europe.

**Aim:** This Delphi study endeavors to co-design policy recommendations that embrace a holistic approach, focusing on improving patient outcomes and enhancing the overall quality of life across the entire cancer trajectory among this population.

**Strategy/tactics:** Participants (57) from 12 EU countries<sup>1</sup> included health care professionals, policymakers, LGBTQIA+ activists, researchers, NGOs, psychologists, social workers, oncologists, general physicians, LGBTQIA+ community members and activists and representatives from political and legislative institutions. Four focus group interviews were conducted, each with a specific topic and protocol and expertly facilitated.

**Programme/Policy:** The outcomes of the Delphi study provide a nuanced understanding of the multifaceted issues within LGBTQI+ cancer care, illuminating key areas that demand targeted interventions. The co-created policy recommendations encompass a spectrum of considerations, ranging from healthcare infrastructure improvements to tailored psychological support and legal frameworks.

**Process:** Stakeholders form legislation, health care, social welfare, NGO were asked to share their insights on this topic from 12 European countries. The countries included Belgium, The Netherlands, Spain, Portugal, France, Italy, Greece, Germany, Malta, Croatia, Austria and Hungry.

**Outcomes:** The discussions highlighted key priorities in policy design including healthcare accessibility and infrastructure, societal attitudes, cultural competency training for HCP in oncology, mental health considerations, tailored multi-disciplinary care, accelerating research in the area, community engagement, legal protections and safety in health care, sharing of knowledge and good practices among member states, LGBTQIA+ representation in health care and leadership and legislative implications.

**What was learned:** These co-created policy recommendations encompass a spectrum of considerations, that could offer a comprehensive roadmap for European policymakers to address the unique challenges faced by this community in the context of cancer care. This research represents a crucial step towards fostering an inclusive and equitable healthcare landscape for LGBTQI+ individuals facing cancer across Europe.

## References

- Poynten, Isobel. (2015). Current Policy and Research on Cancer in LGBT Communities Internationally. *Cancer and the LGBT Community: Unique Perspectives from Risk to Survivorship*. 293–312. [https://doi.org/10.1007/978-3-319-15,057-4\\_18](https://doi.org/10.1007/978-3-319-15,057-4_18), Tamargo CL, Quinn GP, Sanchez JA, Schabath MB. Cancer and the LGBTQ Population: Quantitative and Qualitative Results from an Oncology Providers' Survey on Knowledge, Attitudes, and Practice Behaviors. *J Clin Med.* 2017 Oct 7;6(10):93. doi: <https://doi.org/10.3390/jcm6100093>. PMID: 28991160; PMCID: PMC5664008., Europe's beating cancer plan: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_342](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_342),

Rodrigues, T.S., Sant'Ana, R.S.E., Zerbinati, J.P. et al. Approaching sexuality in LGBTQIAP+ patients with cancer: scoping review. *BMC Public Health* 23, 1269 (2023). <https://doi.org/10.1186/s12889-023-16170-0>

Speaker: I. Lone

Theme: 3. Healthcare systems & policies

Topic: Equity and cancer

**000095 | Relationship between governance and cervical cancer control: A multi-country analysis & implications for eliminating cervical cancer in resource-limited settings**

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**Background:** There is growing evidence that the solution to many public health problems requires more than the technical or biomedical resources within the health system. Although cervical cancer (CeCx) control in resource-limited settings is limited by the paucity of a skilled workforce amongst other factors, weak political leadership (Governance), a solution outside the health system, appears to be the missing link that could lead to tremendous progress toward eliminating CeCx globally.

**Aim:** This study sought to explore the relationship between Worldwide Governance Indicators (WGI) and CeCx control metric, using publicly available data.

**Methods:** Data on WGI (1. Voice & Accountability, 2. Political stability & Absence of violence, 3. Government effectiveness, 4. Regulatory quality, 5. Rule of law, and 6. Control of corruption) and CeCx were retrieved from the World Bank Group and the 2020 GLOBOCAN database, respectively. Mortality-Incidence-Ratio (MIR = Mortality/Incidence) of CeCx was computed as a metric of CeCx control. Pearson's correlation was used to analyse the relationship between the WGI and MIR. We run a multiple regression model to determine the predictors CeCx control.

**Results:** Data from 179 countries were analysed. CeCx ranked among the top three cancers in about 55% (98/179) of the countries. Most (50/98, 51%) of these countries with high CeCx incidence were in Africa, characterized by weak WGI. Also, CeCx was among the top three causes of cancer-related mortality in 52% (93/179) of the countries studied. Only five of those countries with high mortality rates (5/93, 0.05%) were in high-income countries characterized by strong WGI while (51/93, 55%) were in Africa. There was a strong negative correlation between WGI and MIR ( $r = -0.72$ ,  $p\text{-value} < 0.001$ ). For every one standard deviation (1 SD) decrease in governance rating, there was a 0.75 SD increase in MIR, which implies poor control. The overall regression model was significant ( $p\text{-value} < 0.001$ ) and explains 54% ( $R^2 = 0.537$ ) of variations in CeCx MIR. Government effectiveness was the strongest predictor of CeCx control.

**Conclusion:** Countries with high MIR were found to have low WGI ratings. This demonstrates the need to strengthen political leadership and governance in developing countries considering their disproportionately high burden of CeCx. Further studies are needed to compare the disparities in WGI and MIR among countries with high burden.

Speaker: N. Tumba

Theme: 3. Healthcare systems & policies

Topic: Role of Governments in cancer control

**000108 | Cancer Council Australia's financial cost of cancer care policy**

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**Background and context:** Australia's universal healthcare system should mean that no one is financially disadvantaged by their cancer diagnosis and treatment, although this is currently not the case. Financial toxicity is the negative patient-level impact of the financial costs of cancer, which can lead to physical and psychological harm, altered decision making and ultimately sub-optimal cancer outcomes.

**Aim:** To address the harm that the cost of cancer can cause.

**Strategy/tactics:** Cancer Council Australia publishes policy to provide direction to government and keep them accountable, and builds advocacy activity to prosecute our policy priorities.

**Programme/Policy:** Cancer Council Australia developed the *Financial Cost of Cancer* policy to identify options that address the impact of both direct and indirect financial costs of cancer, as well as reducing the impact of changing financial circumstances experienced during cancer care.

**Process:** Several literature reviews guided the development of this policy, and the priorities were refined following consultation with individuals and organisations with expertise in the financial costs of cancer, including people with a lived experience of cancer. Policy options underwent external review prior to approval.

**Outcomes:** Four overarching priority areas emerged: (1) Ensuring informed financial consent; (2) Improving the experience of people with cancer who require income support; (3) Enhancing financial support for people living in regional and remote areas to access cancer treatment and care; (4) Increasing access to financial counsellors.

**What was learned:** Multiple actions are needed to influence policy and practise to reduce the financial cost of cancer to individuals. By reducing the financial burden on patients and ensuring that everyone has equitable access to quality cancer care, the cost of cancer will no longer a barrier to optimal care.

**References**

Cancer Council Australia, 2023. Financial Cost of Cancer Policy. Available online: <https://www.cancer.org.au/about-us/policy-and-advocacy/national-cancer-care-policy/financial-cost-of-cancer>

Speaker: M. Varlow

Theme: 3. Healthcare systems & policies

Topic: Cost of cancer

**000147 | Improving childhood cancer medicines access in developing countries: Towards an implementation framework to inform the Global Platform for Access to Childhood Cancer Medicines for Nigeria**

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**Background:** Children and adolescents in developing countries continue to be disproportionately affected by cancer and have significantly lower survival rates (30%) than their counterparts in high-income countries (80%). This disparity is driven by poor access to childhood cancer medicines. The World Health Organization and St. Jude Children's Research Hospital launched the Global Platform for Access to Childhood Cancer Medicines to provide continuous supply of quality childhood cancer medicines to developing countries.

**Aim:** As much movement has not been seen with the platform, this research aimed to develop a stakeholder-informed guidance to support effective implementation of the platform and maximize opportunities to deliver on its intended goals.

**Methods:** This study was guided by the Consolidated Framework for Implementation Research (CFIR). Participants were recruited based on the stakeholder categories framework and included policymakers from the Ministry of Health, Organizations implementing access to medicines programs in Nigeria, Medicines Logistics Providers, and Health professionals and Personnel at service delivery points such as oncologists and pharmacists.

Data collection involved key informant interviews using a pilot-tested semi-structured interview guide. Data analysis was done by thematic content analysis. Ethical approval was obtained from the National Health Research Ethics Committee of Nigeria and the Ethics Review Board of University of Toronto.

**Results:** The findings reveal critical insights spanning five domains of the CFIR framework, each contributing uniquely to understanding the multifaceted issues of childhood cancer medicine access with a view to understanding pathways to implementation of the platform.

**Conclusion:** Successfully implementing the platform could entail a partner-driven approach, integration with existing programs to avoid fragmentation, supporting capacity strengthening at the primary care level, and engaging patients and communities. This information was used to suggest a nuanced implementation framework for the platform in Nigeria and similar settings which could be beneficial for improving access for children who desperately need childhood cancer medicines to survive.

#### References

- Varsi C, Ekstedt M, Gammon D, Ruland CM. Using the Consolidated Framework for Implementation Research to Identify Barriers and Facilitators for the Implementation of an Internet-Based Patient-Provider Communication Service in Five Settings: A Qualitative Study. *J Med Internet Res.* 2015;17(11):e262. doi: <https://doi.org/10.2196/jmir.5091>. Huffstetler HE, Bandara S, Bharali I, et al. The impacts of

donor transitions on health systems in middle-income countries: a scoping review. *Health Policy Plan.* 2022; 37(9):1188–1202. doi: <https://doi.org/10.1093/heapol/czac063>, Foltz A. Donor funding for health reform in Africa: is non-project assistance the right prescription?, *Health Policy and Planning.* 1994; 9(4): 371–384. doi: <https://doi.org/10.1093/heapol/9.4.371>, Adeloye D, David RA, Olaogun AA, et al. Health workforce and governance: the crisis in Nigeria. *Hum Resour Health.* 2017;15(1):32. doi: <https://doi.org/10.1186/s12960-017-0205-4>, Omoleke II, Taleat BA. Contemporary issues and challenges of health sector in Nigeria. *Res. J. of Health Sci.* 2017; 5(4): 210–216. doi: <https://doi.org/10.4314/rejhs.v5i4.5>, Aunger JA, Millar R, Greenhalgh J, et al. Why do some inter-organisational collaborations in healthcare work when others do not? A realist review. *Syst Rev* 2021; 10, 82. <https://doi.org/10.1186/s13643-021-01630-8>, Papadakos J, Giannopoulos E, Forbes L, et al. Reinventing the wheel: The incidence and cost implication of duplication of effort in patient education materials development. *Patient Educ Couns.* 2021;104 (6):1398–1405. doi: <https://doi.org/10.1016/j.pec.2020.11.017>, Makinde OA, Meribole EC, Oyediran KA, et al. Duplication of effort across Development Projects in Nigeria: An example using the Master Health Facility List. *Online J Public Health Inform.* 2018;10(2):e208. doi: <https://doi.org/10.5210/ojphi.v10i2.9104>, Nigerian Cancer Health Fund. <https://globalhealthprogress.org/collaboration/nigeria-cancer-health-fund/>, Cancer Access Partnership. <https://www.alliedagainstcancer.org/access-partnership>, Okoro RN, Muhammad HM, Jamiu MO. Assessment of public hospital drug supply financing through the public-private partnership: pharmacists' perspectives. *Braz. J. Pharm. Sci.* 2021;57: e19164. <https://doi.org/10.1590/s2175-97902020000419164>, Schiller C, Winters M, Hanson HM, et al. A framework for stakeholder identification in concept mapping and health research: a novel process and its application to older adult mobility and the built environment. *BMC Public Health* 2013; 13, 428. <https://doi.org/10.1186/1471-2458-13-428>, Damschroder LJ, Aron DC, Keith RE, et al. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Sci* 2009; 4, 50. <https://doi.org/10.1186/1748-5908-4-50>, Moullin JC, Dickson KS, Stadnick NA, et al. Ten recommendations for using implementation frameworks in research and practice. *Implement Sci Commun* 2020; 1, 42. <https://doi.org/10.1186/s43058-020-00023-7>, Ojo T, Kabasele L, Boyd B, et al. The Role of Implementation Science in Advancing Resource Generation for Health Interventions in Low-and Middle-Income Countries. *Health Serv Insights.* 2021;14: 1178632921999652. doi: <https://doi.org/10.1177/1178632921999652>, Akinyandenu O. (2013). Counterfeit drugs in Nigeria: a threat to public Health. *African Journal of Pharmacy and Pharmacology*7(36):2571–2576, World Bank. Press Release Number 2022/052/AFW. <https://www.worldbank.org/en/news/press-release/2022/03/21/afw-deep-structural-reforms-guided-by-evidence-are-urgently-needed-to-lift-millions-of-nigerians-out-of-poverty>, Kanavos P, Das P, Durairaj V, Laing R, Abegunde DO. (2010). Options for financing and optimizing medicines in resource-poor countries. *World Health Report, Background Paper*, No 34, *World Data Atlas. Nigeria—Out-of-pocket*

expenditure as a share of current health expenditure. <https://knoema.com/atlas/Nigeria/topics/Health/Health-Expenditure/Out-of-pocket-expenditure-as-a-share-of-current-health-expenditure> Accessed 27 July 2022, Olutuase VO, Iwu-Jaja CJ, Akuoko CP. et al. Medicines and vaccines supply chains challenges in Nigeria: a scoping review. BMC Public Health 22, 11 (2022). <https://doi.org/10.1186/s12889-021-12361-9>, Chukwu OA, Chukwu UA, Lemoha C. (2018). Poor performance of medicines logistics and supply chain systems in a developing country: lessons from Nigeria. Journal of Pharmaceutical Health Services Research; 9; 289–291; DOI <https://doi.org/10.1111/jphs.12274>, Azevedo MJ. The State of Health System(s) in Africa: Challenges and Opportunities. Historical Perspectives on the State of Health and Health Systems in Africa, Volume II. 2017:1–73. doi: [https://doi.org/10.1007/978-3-319-32,564-4\\_1](https://doi.org/10.1007/978-3-319-32,564-4_1), Onwujekwe O, Ezumah N, Mbachu C. et al. Exploring the effectiveness of different health financing mechanisms in Nigeria; what needs to change and how can it happen? BMC Health Serv Res 19, 661 (2019). <https://doi.org/10.1186/s12913-019-4512-4>, Ogbonna OB, Nwako NC. Essential Drugs Revolving Fund Scheme in Nigeria; from the Edge of a Precipice towards Sustainability. Journal of Advances in Medical and Pharmaceutical Sciences 2016; 8 (2), 1–8. <https://doi.org/10.9734/JAMPS/2016/25950>, WHO. 2021. WHO and St. Jude to dramatically increase global access to childhood cancer medicines. <https://www.who.int/news/item/13-12-2021-who-and-st-jude-to-dramatically-increase-global-access-to-childhood-cancer-medicines>, World Health Organization. (2020). Assessing national capacity for preventing and controlling noncommunicable diseases: report of the 2019 global survey. World Health Organization. <https://apps.who.int/iris/handle/10665/331452>, WHO. 2021. Childhood Cancer. <https://www.who.int/news-room/fact-sheets/detail/cancer-in-children>, Steliarova-Foucher E, Colombet M, Ries LAG, et al. International incidence of childhood cancer, 2001–10: a population-based registry study. Lancet Oncol. 2017;18(6):719–731.

Speaker: O. A. Chukwu

Theme: 3. Healthcare systems & policies

Topic: Access to care

#### 000148 | Leveraging social media campaigns to support alcohol control for cancer reduction: The #AlcoholTaxKE initiative in Kenya

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**Background and context:** In Kenya, alcohol is a major suspected contributor to Kenya's cancer burden, particularly cancer of the esophagus (1). Recognizing the devastating public health effects of alcohol consumption, Vital Strategies' RESET Alcohol initiative committed to supporting countries (including Kenya) to implement cost-effective policies to reset the alcohol environment, cut harms, and raise revenues for positive social change as outlined in the WHO's SAFER technical package. With the funding from Vital strategies, the #AlcoholTaxKE digital campaign emerged, raising awareness on the

public health benefits of increasing alcohol taxes and petition policy makers to support the new alcohol tax proposals (2, 3).

**Aim:** The initiative aimed to showcase the public health benefits of raising alcohol taxes in Kenya, alongside highlighting the significant impact of social media campaigns as a complementary strategy in alcohol control advocacy.

**Strategy/tactics:** Leveraging X, LinkedIn, and Instagram, we hosted “Wellness Wednesday” alcohol conversations every week. We also capitalized on World Health Day and World Heart Day where we highlighted the health impacts of alcohol and advocated for raising alcohol taxes as a fiscal tool for deterring alcohol consumption.

**Programme/Policy:** The #AlcoholTaxKE initiative primarily targeted the tax regime surrounding alcohol products, advocating for increased taxation to reduce consumption and mitigate alcohol-related harm. Additionally, we advocated and continue to advocate for the allocation of funds from increased taxation towards public health programs, including rehabilitation programs for individuals recovering from alcohol addiction.

**Process:** The #AlcoholTaxKE initiative, backed by Vital Strategies RESET Alcohol Initiative funding, launched in 2022. The funding facilitated various project activities, including running social media campaigns. Ongoing monitoring tracked social media metrics such as reach, impressions, and engagement.

**Outcomes:** #AlcoholTaxKE has achieved active engagement from 521 users, 10,207,337 impressions, 43,205 engagements, and a cumulative audience of 1,359,213. Organizations beyond Kenya, have joined our conversation, amplifying the critical role of social media in mobilizing cross-border voices in support of effective alcohol control measures. We've witnessed the Cabinet Secretary for Interior and National Administration recommend a raft of alcohol taxation proposals, which hopefully, will reflect in the 2024/2025 Finance Bill/Act.

**What was learned:** Through #AlcoholTaxKE, it has been demonstrated that social media campaigns are vital complementary approaches supporting public health and fiscal policy initiatives, offering valuable insights into effective advocacy strategies. We have also learned that strategic messaging and public engagement are crucial in garnering support for alcohol control measures.

#### References

1. Menya, D., Kigen, N., Oduor, M., Maina, S. K., Some, F., Chumba, D., Ayuo, P., Osano, O., Middleton, D. R., Schüz, J., & McCormack, V. A. (2018). Traditional and commercial alcohols and esophageal cancer risk in Kenya. International Journal of Cancer, 144(3), 459–469. <https://doi.org/10.1002/ijc.31804>
2. Elder, R. W., Lawrence, B., Ferguson, A., Naimi, T. S., Brewer, R. D., Chattopadhyay, S. K., Toomey, T. L., & Fielding, J. E. (2010). The Effectiveness of Tax Policy Interventions for Reducing Excessive Alcohol Consumption and Related Harms. American Journal of Preventive Medicine, 38(2), 217–229. <https://doi.org/10.1016/j.amepre.2009.11.005>
3. Sornpaisarn, B., Shield, K. D., Cohen, J. E., Schwartz, R., & Rehm, J. (2015). Can pricing deter adolescents and young adults from starting to drink: An analysis of the effect of alcohol taxation on drinking

initiation among Thai adolescents and young adults. *Journal of Epidemiology and Global Health*, 5(4), S45–S57. <https://doi.org/10.1016/j.jegh.2015.05.004>

Speaker: N. Rose

Theme: 3. Healthcare systems & policies

Topic: Successful communication strategies and leveraging social media

#### 000172 | Assessing global trends and the policy response of the cervical cancer pandemic in 127 countries from 1990 to 2019

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(2) *Tianjin Medical University Cancer Institute & Hospital, Tianjin, China*

**Background:** In the 1990s, countries worldwide gradually realized that cervical cancer threatened women's health, and its disease burden brought heavy social and economic losses; therefore, they formulated national cancer strategies to control cervical cancer. Since 2000, 156 countries have made a detailed elaboration on cancer planning, including cervical cancer prevention and control. However, the disease burden is heavier in some countries than in others, and there are large differences in policy implementation effects.

**Aim:** This study sought to explore the impact of cervical cancer control policies on cervical cancer epidemic trends in 127 countries from 1990 to 2019. The research analyzed the changes in the incidence of cervical cancer in 127 countries from 1990 to 2019 via the WHO geographical region and Human Development Index (HDI) levels and selected national cervical cancer control policies in different countries to analyze the impact of these policies on disease incidence.

**Methods:** The age-standardized incidence and mortality rates of cervical cancer in 127 countries from 1990 to 2019 were selected from the WHO Cancer Today and Global Burden of Disease databases, and the data were divided into WHO geographical region and Human Development Index (HDI) dimensions. A joinpoint regression model was used to analyze the tendency of cervical cancer incidence to change among patients with different HDI levels in different WHO regions. Cervical cancer control policy texts that were used or issued after 2010 were selected from 43 countries, and bibliometric methodology was applied to extract the keywords of the policy in each country.

**Results:** There are important differences in the epidemiological trends of cervical cancer incidence among countries with different HDIs across the six WHO regions. Overall, the trend in the incidence of cervical cancer in countries with ultrahigh and high HDI levels tended to decrease, and vice versa. However, in the African region, cervical cancer incidence and mortality are greater than those in other WHO regions. Based on the quantitative research, this study extracted and summarized 13 core points, including tertiary prevention strategies, financial support, international collaboration and other aspects, from 43 national cancer strategies or plans related to cervical cancer control. The study revealed that policy intervention might be correlated

with changes in the incidence of cervical cancer caused by the epidemic.

**Conclusion:** This study revealed that the differences in cervical cancer epidemic trends among different WHO geographical regions and HDI levels are mainly related to the implementation of tertiary prevention strategies. Therefore, this research suggest that each country should fully implement a cervical cancer control plan and establish a policy appraisal framework to improve its cancer control system.

#### References

- [18] Divine LM, Huh WK. Tertiary prevention of cervical cancer. *Clin Obstet Gynecol*. 2014 Jun; 57(2):316–24. [17] National Cervical Cancer Prevention Program: Strategic Plan 2012–2015. Ministry of Public Health and Sanitation and Ministry of Medical Services, Kenya. 2023. <https://www.iccp-portal.org/map>. Accessed 16 Dec2023. [16] Qatar National Cancer Strategy 2011–2016. 2023. <https://www.iccp-portal.org/map>. Accessed 28 Nov 2023. [15] Ploysawang P, Rojanamatin J, Prapakorn S, et al. National cervical cancer screening in Thailand [J]. *Asian Pacific Journal of Cancer Prevention*. 2021, 22(1): 25–30. [14] Cervical Disease Prevention and Treatment Professional Committee of Hubei Maternal and Child Health Association. Expert Consensus on Standardized Construction of Integrated Outpatient Clinic for Cervical Cancer Prevention and Control in Hubei Provincial Grassroots Maternal and Child Health Hospitals. *Cancer Res Prev Treat*. 2024, 54(1): 1–11. [13] Nigeria National Cancer Control Plan 2018–2022. 2023. <https://www.iccp-portal.org/map>. Accessed 28 Nov 2023. [12] New Zealand Cancer Action Plan 2019–2029. 2023. <https://www.iccp-portal.org/map>. Accessed 28 Nov 2023. [11] Huang LY, Zhao XL, Zhao FH. Trend of cervical cancer incidence, mortality, and progress of prevention strategies. *Journal of Multidisciplinary Cancer Management (Electronic Version)*. 2021, 7(2): 21–25. [10] World Health Organization. WHO global action plan for the prevention and control of noncommunicable diseases 2013–2020. 2023. <https://www.doc88.com/p-9909382036311.html?r=1>. Accessed 28 Nov 2023. [9] Li J, Pang T, Xu DD, et al. Visual analysis of clinical comprehensive evaluation of drugs in China by bibliometric analysis. *Journal of Pharmaceutical Practice and Service*. 2023, 41(8): 509–514 + 518. [8] Wei YP, Gao YY, Wang XH, et al. Evaluation on the Children's Health Care Work in Baiyin from 2006 to 2018—Based on Joinpoint Regression and Entropy Coefficient Method. *Chinese Primary Health Care*. 2021, 35(09): 52–55. [7] Wang FX, Cui CL, Jiang J., et al. Analysis of the trends in the incidence of pulmonary tuberculosis in Suzhou city from 2011 to 2022 based on Jointpoint regression model. *Journal of Southeast University (Medical Science Edition)*. 2023, 42(04): 566–571. [6] Scherzo S, Gillette-Basten S. Measuring inequalities of development at the sub-national level: From the human development index to the human life indicator. *Lops One*. 2020; 15(4): e0232014. [5] Xu T, Yang X, He X et al. The Study on Cervical Cancer Burden in 127 Countries and Its Socioeconomic Influence Factors. *J Epidemiol Glob Health*. 2023 Mar;13(1): 154–161. [4] Bronson M, Kim JJ, Canfell K, et al. Impact of HPV vaccination and cervical screening on cervical cancer elimination: a comparative modelling analysis in 78 low-income and lower-middle-income countries. *Lancet*. 2020;395(10224): 575–90. [3] Sung H, Ferlay J, Elsie RL,

et al. Global Cancer Statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Cain. 2021;71(3): 209–49. [2] World Health Organization. Global strategy to accelerate the elimination of cervical cancer as a public health problem. <https://www.who.int/publications/i/item/9789240014107>, accessed November 15, 2020. [1] Wang R, Pan W, Jin L, et al. Human papillomavirus vaccine against cervical cancer: Opportunity and challenge. Cancer Lett. 2020;28(471):88–102.

**Speaker:** T. Xu

**Theme:** 3. Healthcare systems & policies

**Topic:** Policy development in cancer prevention

#### 000179 | Towards reconciliation: Lessons learned from first nations, Inuit, and Métis cancer care initiatives in Canada

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**Background and context:** The First Nations, Inuit and Métis Strategy Development and Practice Change Implementation Initiative (2017–2023) was a collaborative effort involving 29 organizations, governments and cancer agencies supported by the Canadian Partnership Against Cancer (CPAC) as part of the Canadian Strategy for Cancer Control. CPAC is committed to reconciliation with First Nations, Inuit and Métis peoples, including the implementation of self-determined priorities in cancer care.

**Aim:** CPAC sought to gather and share lessons learned from the Initiative using a developmental evaluation approach. The goal was to understand the progress towards health system outcomes, inform future work, and share lessons learned among partners in service of reconciliation and First Nations, Inuit and Métis self-determination.

**Strategy/tactics:** In collaboration with a First Nations-led evaluation group, the evaluation sought to unify Western and First Nations, Inuit and Métis ways of knowing and doing. Key to the inclusion of an Indigenous perspective is the building of collaborative, open, and trusting relationships with partner organizations as they reflected on their implementation journey. This presentation is a continuation of the rapid-fire presentation from World Cancer Congress 2023 on “Integrating Indigenous Ways of Doing and Knowing with Western Evaluation Approaches.”

**Programme/Policy:** The Initiative focused on developing and implementing self-determined priorities in cancer care for First Nations, Inuit and Métis. Projects were aimed at fostering authentic collaboration, reconciliation, and Indigenous self-determination within cancer care settings, and were tailored according to the unique needs of each jurisdiction.

**Process:** Participatory methods were used in the evaluation, including collective sense-making workshops and engagements with a partner advisory committee. The evaluation was completed in 2023 and a final report created and shared with participants for feedback and

validation. Knowledge products are being developed to share findings and lessons learned.

**Outcomes:** This evaluation demonstrated an innovative approach of engagement through collaborative and ongoing relationship-building with First Nations, Inuit and Métis partners. We are taking lessons learned and integrating them into the work we do.

**What was learned:** This work highlights the importance of creating an ethical space for engagement so that distinct perspectives, cultures, and worldviews can arrive together, interact and engage with mutual respect, kindness, and understanding (Ermine, 2007). The findings also shed light on actions that CPAC could take to advance reconciliation and First Nations, Inuit and Métis self-determination, including building trusting relationships, respecting culture and context, and understanding success through a community-centered, strengths-based approach.

#### References

Canadian Partnership Against Cancer (2024). The Partnership's commitment to reconciliation. Retrieved from: <https://www.partnershipagainstcancer.ca/about-us/who-we-are/first-nations-inuit-metis/reconciliation/#:~:text=%20The%20Partnership%E2%80%99s%20commitment%20to%20reconciliation%20%201,2015%2C%20the%20Partnership%20was%20called%20to...%20More%20>, Canadian Partnership Against Cancer (2019). Canadian Strategy for Cancer Control. Retrieved from: <https://www.partnershipagainstcancer.ca/cancer-strategy/>, Ermine, Willie (2007). The Ethical Space of Engagement. Indigenous Law Journal, 6 (1): 193–203, Hunter Courchene Group (2023). The First Nations, Inuit and Métis Initiative (2018–2022) Final Evaluation Report [Unpublished].

**Speaker:** K. Quiambao

**Theme:** 3. Healthcare systems & policies

**Topic:** Building capacity in monitoring & evaluation

#### 000197 | What is needed to overcome challenges to achieving cervical cancer elimination: An ecological assessment of global social, economic and health system determinants

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**Background:** WHO's 2020 strategy for the elimination of cervical cancer outlines key targets for nations to achieve by 2030 to drive progress towards optimal HPV vaccination, cervical screening, and treatment coverage. While targets provide a focal point for action, for many nations, there are broader challenges which need to be addressed at the health system and policy level before cervical cancer elimination can be achieved. Countries must identify these before implementation and scale-up of programs will be effective.

**Aim:** This study aimed to determine key economic, political, socio-cultural, health system determinants associated with achieving target coverage, and areas of opportunity for policy reform and health system.

**Methods:** An ecological approach was employed, with four conceptual frameworks describing social determinants of health, WHO building blocks, universal health coverage, and cervical cancer elimination analysed to determine core domains for measurement. Publicly available global datasets were searched to identify indicators to measure core domains. Descriptive statistics, Kendall's Tau and Pearson's r measured the strength of associations between indicators and progress towards each of the three WHO elimination targets.

**Results:** Data from 155 countries across 42 indicators were analysed. Indicators measuring equity-focused economic, social, and public policies had large positive associations with higher values reported for country-level screening and treatment coverage, per WHO targets. Assessment of indicators measuring health system performance confirm that core health system capability and availability are needed to sustain activity driving cervical cancer elimination. National cancer control planning had low or no association with achieving target coverage, indicating ineffective translation into practice.

**Conclusion:** Social, economic, cultural, and environmental policies, in conjunction with health system performance, and equitable access to care play an integral role in country capacity to achieve the 2030 elimination targets. These findings indicate that cervical cancer elimination must be placed into a wider context of health system strengthening and service delivery approaches aimed at equitable access to services across the population. Cervical cancer elimination provides nations with an opportunity to drive broader health and cancer control investment and policy reform.

Speaker: A. Hyatt

Theme: 3. Healthcare systems & policies

Topic: Effective national cancer control planning

#### 000205 | The World Cancer Day 2024 Campaign: A case of network advocacy in Brazil

Rodrigues A. (1); Caleffi M. \* (2)

(1) FEMAMA—Federação Brasileira de Instituições Filantrópicas de Apoio à Saúde da Mama, Porto Alegre, Brazil; (2) Moinhos de Vento Hospital, Porto Alegre, Brazil

**Background and context:** In December 2023, the Brazilian government sanctioned Law 14,758/23, instituting the National Policy for Cancer Prevention and Control (PNPCC). As a result of a series of discussions on how we are dealing with cancer in Brazil, the PNPCC represents a social awareness of the alarming numbers of the disease in the country. Although we understand that its processing was quite fast, considering the context of the Brazilian federal legislative system, where bills can be discussed for years, we directed our efforts throughout the World Cancer Day Brazil 2024 campaign to also emphasize the need for speed in the regulatory process of the PNPCC.

**Aim:** This article aims to present the advocacy work carried out over the past years, in monitoring the processes that led to the sanction of the PNPCC and in the articulation carried out by FEMAMA between

government, society, and other cancer support institutions to deliver to Nísia Trindade, Minister of Health in Brazil, on the occasion of the World Cancer Day Brazil 2024 campaign, a plural and representative letter that reinforces the need for an efficient regulation and implementation of the national policy.

**Strategy/tactics:** In an effort to narrow the gap that still exists between what is guaranteed by law and what happens throughout the patient's journey, FEMAMA utilized the most recent data on cancer in Brazil, mobilizing influencers, the press, cancer support institutions, and society in a campaign to demand expedited regulation of the PNPCC, which concluded on June 16, 2023.

**Programme/Policy:** The National Policy for Cancer Prevention and Control (PNPCC) reinforces actions for early detection of the disease, palliative care for pain relief and treatment, psychological support for patients and families, the requirement for multidisciplinary care and patient navigation.

**Process:** Our first step was to seek out the largest non-governmental organizations in the cancer area, convincing them to support a unified movement, considering that this way we would obtain greater support from the media and political leaders in the legislative branch. We then collectively constructed a political document, expressing the main agendas of the movement. Integrated communication actions were then planned, unifying the message that would reach the general public. Finally, we took advantage of a strategic opportunity to deliver our document directly to the Brazilian Minister of Health.

**Outcomes:** More than 9 million people impacted by the campaign on femama's social media profiles. More than 2.3 million people impacted by the campaign through influencer sharing. More than 106.1 thousand views of campaign videos on femama's youtube channel. More than 4,700 society signatures on the letter delivered to the Ministry of Health.

**What was learned:** We learned that it is possible to build integrated advocacy actions, uniting different actors around the same objective. Although there may always be some level of competition between civil society organizations, coming together at strategic moments tends to bring better results when we are discussing public policies at the national level.

Speaker: M. Caleffi

Theme: 3. Healthcare systems & policies

Topic: Community engagement in advocacy

#### 000229 | Partnerships to improve outcomes for children with retinoblastoma in low income settings

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(3) University of Southern Queensland (UniSQ) Ipswich, Ipswich,

Australia; (4) Cancer Council Queensland, Fortitude Valley, Australia;

(5) Kathmandu, Nepal

**Background and context:** Children in low-income countries with retinoblastoma have poorer survival outcomes compared to those in high income countries. Action to reduce this disparity should be a priority for civil society.

**Aim:** To develop a civil society response to the needs of children diagnosed with retinoblastoma in Nepal.

**Strategy/tactics:** Health professionals and volunteers in Nepal and Australia formed an alliance to fund raise to provide customised eye prostheses for children in Nepal treated with enucleation. An Australian incorporated association formed in 2019 to jump start the initiative fund raising through direct solicitation for funds through professional networks and special events. In 2021 an independent sister NGO formed in Nepal to expand on the initial initiative. From this, additional organisations across different sectors were able to connect both in Nepal and Australia deepening impact.

**Programme/Policy:** A slow build from a small dedicated core across Australia and Nepal provided a stable base for growth and entry of new partners. Characteristics for success include authentic values-based connection, collaboration rather than competition across partners, flexibility, shared commitment.

**Process:** Stakeholders included the Tilganga Institute of Ophthalmology; Rotary Australia; Rotary Club of Yala in Nepal, Open Eyes Global in Australia; Open Eyes Nepal in Kathmandu; the Australian Catholic University. Over time activities expanded to broader cancer control actions with community awareness/education and community based screening programs and research initiatives now evolving.

**Outcomes:** The founding NGOs are volunteer led and delivered so costs are minimal. Returns: over 100 Nepalese children have received support including customised eye prostheses; diagnostic imaging; medical treatment. Twenty community based child health workers now trained and equipped to screen for retinoblastoma with program expansion across Nepal in planning. Education on detecting retinoblastoma given to 190 Pediatricians and Interns from three general hospitals and 150 nursing students from two nursing colleges in Kathmandu.

**What was learned:** Civil society initiatives are vulnerable to disruptions such as natural disasters and pandemics, government policy changes, volunteer attrition. From this valuable learning and social capital is lost so robust consortiums are needed. Shared values around human dignity and the common good; respectful interpersonal relationships; flexible organisational systems are essential.

**Speaker:** S. Chambers

**Theme:** 3. Healthcare systems & policies

**Topic:** Cross sector collaboration to make systems change/strengthen systems

#### 000236 | Paternal orphans due to cancer in 2020: The first estimates worldwide, by region, country and cancer type

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International Agency for Research on Cancer, Lyon, France; (4) National Cancer Institute—Shady Grove, Rockville, United States of America; (5) London School of Hygiene and Tropical Medicine, LSHTM, London, United Kingdom

**Background:** Orphans, i.e. children (<18 years) who have lost either or both of their parents, often face numerous health, support and educational disadvantages throughout life. At WCC 2022 press conference, we showed that, in 2020, more than 1 million children lost their mother to cancer worldwide [1]. To complete this picture, we will present the first global estimates of paternal orphans due to cancer.

**Aim:** This study aims to estimate the global number of new paternal orphans due to male deaths from cancer in 2020.

**Methods:** We estimated the number of new paternal orphans due to cancer by combining country- and age-specific male fertility rates with country- and age-specific number of deaths in women in 2020 (GLOBOCAN), while considering country-specific mortality rates experienced by the children (UN World Population Prospects). As fertility rates in men were not immediately available, we used different sources of data to estimate them: civil registrations and vital statistics systems, Demographic and Health Surveys, Multiple Indicator Cluster Surveys, and censuses. We scaled these estimated fertility age-patterns to lead to the same number of births as for the females.

**Results:** In 2020, 5.5 million men died from cancer worldwide. We estimated that these deaths led to 1.41 million new paternal orphans, among which 72% were due to paternal deaths occurring above 45 years old. Most orphans occurred in Asia (52%) and Africa (31%) and were due to deaths from gastrointestinal cancers (38%), of which the majority were liver cancer (14%), followed by lung and trachea cancers (13%) and head and neck cancers (12%). Children were 12 years old on average at paternal death. A strong inverse correlation was present between Human Development Index (HDI) and number of new paternal orphans per 100 male cancer deaths but no clear association with HDI level was seen for the number of orphans per 100,000 children.

**Conclusion:** This study completes the pictures of orphans due to cancer. It helps increase awareness of the intergenerational impact of cancer deaths, highlighting the needs for the reduction in avoidable cancer deaths and research needs for the impacted generation.

#### References

1. Guida et al. (2022). Nat Med. 28(12):2563–72. PMID:36404355.

**Speaker:** F. Guida

**Theme:** 3. Healthcare systems & policies

**Topic:** Cost of cancer

#### 000266 | Global coalition for radiotherapy (GCR) launches emergency response task force

Laird D. \* (1); Price, P. (1); Barney, S. (2); Fleurent B. (3); Linde, T. (4)

(1) Global Coalition for Radiotherapy, London, United Kingdom;

(2) AdvaMed—Advanced Medical Technology Association, Washington, United States of America; (3) Global Coalition for Radiotherapy, Geneva, Switzerland; (4) Elekta Instrument AB Stockholm, Stockholm, Sweden

**Background and context:** Radiotherapy (RT) is a critical treatment modality for 50%–60% of cancer patients and is involved in 40% of curative treatments<sup>1</sup>. In times of emergencies, humanitarian crises and wars, cancer care is often neglected, causing delays in diagnostics and treatments and raising unique challenges, risks, and solutions to deliver quality cancer care.

The Global Coalition for Radiotherapy (GCR) is dedicated to increasing access to RT by enabling collaboration. During the COVID pandemic, the GCR established a RT Task Force, speaking with professionals to learn how they managed their cancer patients' treatment while following COVID protocols. The learnings were then applied to the emergency in Ukraine, as war broke out on February 24th, 2022. Leading the GCR to launch the Emergency Task Force.

**Aim:** The Emergency Task Force's aim was to develop a needs and solutions document to guide the crisis response and facilitate a collaborative network of cancer care professionals who share best practices and lessons and advocate for crisis preparedness.

**Strategy/tactics:** The GCR launched the Emergency Task Force via an online meeting on 15 March 2022 to support Ukraine. 87 members of the RT community joined.

**Programme/Policy:** The Emergency Task Force focused on three strategic areas: intelligence gathering, knowledge and expertise sharing and patient support.

**Process:** Intelligence gathering by coordinating members of the global RT community to gather and consolidate a needs and solutions document. The World Health Organization (WHO) used the input in planning the crisis response from a cancer perspective.

Knowledge and experience sharing in GCR led virtual sessions for physicians and residents to discuss and address cancer care challenges and learn best practices and innovations that can be replicated to support the most effective cancer treatments under crisis circumstances.

Patient support through coordination of individual physicians and nonprofit organisations to gather funding for patient transfers. Also, volunteers coordinated and supported digital training and support for patient data transfers.

**Outcomes:** The GCR Emergency Task Force provided a rapid view of the situation facing Ukraine's healthcare system and cancer patients to inform crisis response teams. In addition, the GCR keeps healthcare professionals engaged, sharing feedback on machine uptimes, supply inventories, and patients, including multimodality protocols needing longer-term follow-up.

**What was learned:** The COVID and Ukraine emergencies showed the economic impact on countries' health systems and the well-being of healthcare professionals, emphasising the importance of having emergency cancer management plans. GCR can advocate for a blueprint document to facilitate decision-makers to consider RT treatment in emergency response plans.

## References

- 1: Baskar, R., Lee, K.A., Yeo, R., Yeoh, K.W. (2012). Cancer and Radiation Therapy: Current Advances and Future Directions. International Journal of Medical Sciences, 9(3), 193–199. <https://doi.org/10.7150/ijms.3635>.

Speaker: D. Laird

Theme: 3. Healthcare systems & policies

Topic: Radiotherapy

## 000290 | Australian Cancer Atlas 2.0: Understanding how the impact of cancer varies by location

Baade P. \* (1); Mengersen, K. (2); Dasgupta, P. (1); Cameron, J. (1); Cramb, S. (3); Saunders, T. (2); Azad, S. (2); Aitken, J. (1)

(1) Cancer Council Queensland, Brisbane, Australia; (2) QUT Gardens Point Campus, Brisbane City, Australia; (3) Queensland University of Technology, Brisbane, Australia

**Background:** It is widely recognized that the impact of cancer exhibits geographical variation, often attributed to disparities in health, socio-economic factors, and lifestyle choices.

In 2018, the award-winning Australian Cancer Atlas ([atlas.cancer.org.au](http://atlas.cancer.org.au)) was launched online, offering a comprehensive depiction of cancer impact, quantified by incidence rates and survival outcomes, at a fine-grained geographical scale throughout Australia. Since its launch, it has been used by more than 65,000 distinct users from over 100 countries. The Atlas has been used to guide policy development, increase advocacy and awareness efforts, and motivate research efforts to understand the reasons behind the observed variation.

**Aim:** To undertake a concerted research program to enhance the Atlas (Atlas 2.0) to include a wider spectrum of cancer types and additional indicators related to cancer screening, risk factors, clinical characteristics, and treatment modalities. In addition, temporal changes in the geographical patterns will be included, and results include both relative and absolute measures of impact.

**Methods:** Spatial and spatio-temporal statistical models within a Bayesian framework were developed and applied to population-based data obtained from cancer registry, hospital admission, Medicare-funded procedures and screening datasets, along with survey data. Substantial enhancements to the interactive digital architecture and user interface was made to visualise the modelled estimates across over 2100 small areas along with their uncertainty.

**Results:** Launched in May 2024, the Australian Cancer Atlas 2.0 revealed substantial geographical disparities in the impact of cancer across Australia, with the magnitude and characteristics of this variation varying by cancer type and indicator. While area-specific trends were generally consistent with the national trend, there was limited evidence that the geographic disparities have changed over time. This presentation will detail development of the Atlas, showcase key features and results, and discuss future priorities and opportunities for collaboration.

**Conclusion:** The Australian Cancer Atlas provides unique insights into the “what” and “where” of geographical variation, crucial for informing the development of interventions and policy. The next step is to understand the “why.”

Speaker: P. Baade

Theme: 3. Healthcare systems & policies

Topic: Epidemiology

**000297 | Hospital-wide multidisciplinary training of the medical personnel through Korea-Côte d'Ivoire cooperation for the sustainable and equitable national cancer control system in Côte d'Ivoire: The National Radiotherapy and Medical Oncology Center Project**

Yoo C. W. \* (1); Kang M. J. (1); Jung S.-Y. (1); Kim B. H. (1);  
Seo H. G. (1)

(1) National Cancer Center, Goyang-si, Korea, Republic of

**Background and context:** Capacity-building initiatives targeting medical personnel in low- and middle-income countries (LMICs) typically entail either sending medical professionals from donor countries to recipient countries or vice versa. In general, the training programs have focused on capacity-building of individual medical professionals within specific disciplines due to practical constraints of local training, resulting in small-scale short-term invitational training. However, it has become evident that the enhancement of healthcare quality necessitates more than just individual capacity-building efforts. As part of “The National Radiotherapy and Medical Oncology Center Project,” the first comprehensive cancer center in Côte d'Ivoire, the National Cancer Center Korea has initiated an unprecedented large-scale long-term training project for medical personnel in Côte d'Ivoire, funded by the Export-Import Bank of Korea's Economic Development Cooperation Fund under the Ministry of Economy and Finance of the Republic of Korea.

**Aim:** The primary objective was to transcend individual capacity-building and foster establishing sustainable and equitable national cancer control system in Côte d'Ivoire.

**Strategy/tactics:** Cancer prevention, diagnosis and treatment strategies were to be disseminated, thereby strengthening Côte d'Ivoire's cancer control capacities which meet global standards.

**Programme/Policy:** The programme was designed to be contextually appropriate through customized multidisciplinary curriculum, step by step approach and long-term mentorship and support system.

**Process:** The program entails unprecedented large-scale invitational training of Ivorian medical personnel in Korea (247 man-months) and dispatching medical staff of National Cancer Center Korea for local training in Côte d'Ivoire (347 man-months) over 3 years after the hospital's opening. Diverse specialities including doctors, nurses, technicians, engineers, pharmacists and administrators are integrated to assure comprehensive capacity building.

**Outcomes:** From May to November 2023, the National Cancer Center Korea conducted invitation training for 51 medical personnel from 21 specialities of Côte d'Ivoire. The training outcomes were validated through both quantitative and qualitative assessments. Particularly, mutual trust and strong networking between the medical personnel from both countries were established, which will guarantee the success of local education initiatives which will be conducted during 3 years after the opening of hospital.

**What was learned:** The positive outcomes observed underscore the importance of not only augmenting knowledge and technical competencies but also nurturing interpersonal relationships in capacity-

building initiatives which are pivotal for fostering enduring and sustainable partnerships. The insights gained from this project, and the proposal of pragmatic operational strategies hold promise for informing future endeavors in the realm of global cancer control, heralding a transition towards more collaborative and sustainable initiatives.

Speaker: C. W. Yoo

Theme: 3. Healthcare systems & policies

Topic: Cancer control planning in low- and middle-income countries

**000422 | Targeting cervical cancer elimination and the global breast cancer initiative in the Americas through telementoring: A PAHO and MD Anderson collaboration**

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**Background and context:** Recently, the World Health Organization (WHO) launched the Global Strategy to Eliminate Cervical Cancer as a public health problem with three ambitious targets to be reached by all countries by 2030. Likewise, they released the Global Breast Cancer Initiative (GBCI), with three aspirational goals. Reaching the goals of these two initiatives will require cross-sectional and multidisciplinary collaborations, public education, and system strengthening. The Pan American Health Organization (PAHO), MD Anderson Cancer Center (MD Anderson), the National Cancer Institute (NCI) and other partners are developing a collaborative approach to support countries in The Americas in reaching these goals.

**Aim:** Develop and implement multi-partner collaborations to support countries with their adoption of best practices towards the Elimination of Cervical Cancer and to improve quality of mammography in The Caribbean as part of the second pillar of the GBCI.

**Strategy/tactics:** We have strengthened collaborations to support and assist countries to reach their elimination targets through implementing Project ECHO® (Extension for Community Healthcare Outcomes); a case-based and evidence-based strategy to increase capacity.

**Programme/Policy:** Two ECHO programs have been developed in The Americas: (1) Project ECHO ELA (Elimination of Cervical Cancer in Latin America); developed in 2019 and implemented in 2020. The program consists of monthly virtual sessions, which include lectures and case-based discussions of programs, all held in Spanish. (2) The

Project ECHO MIMIC (Mammography Quality Improvement in The Caribbean) was developed in 2023 to support clinicians in The Caribbean with mammography quality improvement; all held in English.

**Process:** Both programs follow a collaborative planning process that includes faculty from the region. MD Anderson and the NCI provide content expertise and administrative support, and PAHO engages with their wide network of collaborators in The Americas to disseminate the two programs.

**Outcomes:** Since March 2020, 31 Project ECHO ELA sessions have been held with an average participation of 65 individuals from 21 countries. Discussion topics have included HPV vaccination, screening, and management of women with cervical disease.

Since April 2023, nine Project ECHO MIMIC sessions have been held with an average of 63 participants from 17 countries.

**What was learned:** Multi-sector collaborations are feasible and important to support the WHO goals for cervical and breast cancer elimination targets in The Americas. We continue to grow and evaluate these two programs and to find areas of cross-collaboration such as combined hands-on trainings for breast and cervical cancer prevention.

Speaker: M. Varon

Theme: 3. Healthcare systems & policies

Topic: Cross sector collaboration to make systems change/strengthen systems

#### 000443 | Patient advocacy group's role in representing patients' voice within drug reimbursement process: A case study of pembrolizumab and lenvatinib for endometrial cancer patients in Israel

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**Background and context:** Recently, it was demonstrated that the combination of Pembrolizumab and Lenvatinib (the combination) offers significantly longer progression-free and overall survival rates compared to chemotherapy for patients with advanced endometrial cancer (AEC) with proficient mismatch repair (pMMR) disease.

Since 2021, this combination has been under consideration for reimbursement within the Israeli Health Basket (IHB). In Israel, drug reimbursements are decided by a public committee comprising physicians, Health Maintenance Organizations (HMOs), the Ministry of Health (MOH), the Ministry of Finance, and public representatives. Notably, patient representatives are not part of this committee.

HaBait Shel Bar—Israel Women's Cancer Association (RA), a patients advocacy group (PAG) representing gynecologic cancer patients in Israel, was established in 2022, thus marking the absence of formal patient representation before that time.

In 2023, the committee decided against reimbursing the combination, prompting the need for specific action.

**Aim:** The primary goal of the PAG was to effectively represent the patients' perspective to decision-makers, highlighting the unmet

needs of pMMR AEC patients, with the aim of securing reimbursement for the combination as part of the 2024 IHB.

**Strategy/tactics:** The PAG collaborated with relevant stakeholders to provide impartial and confidential pertinent information, and patient testimonials, to both the MOH and committee members.

**Programme/Policy:** Drugs reimbursement.

**Process:** Joint efforts with the Israeli Society of Gynecology Oncology led to conducting a quality of life study among local patients treated with the combination, and gathering epidemiological data to address the committee's lack of information. Joint letters emphasizing the unmet need were sent too.

Patients' testimonials were recorded and submitted confidentially to decision-makers, and journalists supportive of PAG involvement were briefed to raise public awareness.

**Outcomes:** The committee decided to include the combination in the 2024 IHB.

**What was learned:** This case underscores the importance of understanding decision-makers' information gaps when strategizing advocacy efforts. Collaborating with relevant stakeholders and providing impartial and confidential pertinent information, and patient testimonials, proved effective in demonstrating the unmet needs of patients, potentially serving as a replicable model for future advocacy endeavors.

Effective communication and collaboration with relevant stakeholders, including medical professionals, patient advocacy groups, and the media, can significantly amplify the impact of advocacy efforts.

#### References

- Makker, V., Colombo, N., Herráez, A. C., Santin, A. D., Colombara, E., Miller, D. S., Fujiwara, K., Pignata, S., Baron-Hay, S., Ray-Coquard, I., Shapira-Frommer, R., Ushijima, K., Sakata, J., Yonemori, K., Kim, Y. M., Guerra, E., Şanlı, U. A., McCormack, M., Smith, A. D.,...Lorusso, D. (2022). Lenvatinib plus Pembrolizumab for Advanced Endometrial Cancer. *The New England Journal of Medicine*, 386(5), 437–448. <https://doi.org/10.1056/nejmoa2108330>

Speaker: B. Levy

Theme: 3. Healthcare systems & policies

Topic: The power of patient advocacy

#### 000458 | Enhancing pediatric cancer care quality in cross-cultural less-developed regions: Insights from a mixed-method study in the Qing-Tibetan area of China

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**Background:** Quality of Care (QoC) for pediatric cancer patients in less-developed regions often faces significant challenges due to unique cultural and resource constraints. Targeted interventions are essential to address these issues and improve care standards. This study explores multifaceted strategies aimed at enhancing pediatric cancer care quality in the complex cross-cultural setting of the Qing-Tibetan area in China.

**Aim:** This study aims to evaluate improvements in pediatric cancer care quality metrics, institutional dynamics, healthcare personnel well-being, and training effectiveness in the Qing-Tibetan healthcare context.

**Methods:** A comprehensive institution-based convergent mixed-method study design was meticulously implemented across diverse healthcare settings, including a major city and two Tibetan autonomous counties within Qinghai province. The quantitative arm assessed pediatric cancer care quality metrics and institutional dynamics, while the qualitative component involved in-depth interviews with key stakeholders such as physicians, hospital administrators, NGO representatives, and government officials. A sophisticated mixed-method analytical approach blending inductive and deductive techniques was employed to derive nuanced insights.

**Results:** During the study period from 2019 to 2023, significant advancements were observed in critical healthcare parameters. Disease-free survival rates among pediatric leukemia patients notably increased from 60% to an impressive 88%, accompanied by a substantial reduction in cross-province referrals from 30% to only 5%. NGOs played a pivotal role in providing adaptable training mechanisms for healthcare professionals, although challenges related to administrative collaboration persisted. Exchange programs facilitating knowledge transfer with more developed hospitals enhanced local physician competencies, despite staffing stability challenges in underserved areas. The study identified gaps in robust evaluation mechanisms and administrative authority within NGOs, impacting program effectiveness. Moreover, there was a crucial need for improved patient and caregiver engagement, especially in the culturally complex Qing-Tibetan healthcare landscape. Integrating local religious leaders into healthcare frameworks emerged as a potential strategy to enhance trust and healthcare utilization among communities.

**Conclusion:** This study highlights the intricate interplay of organizational partnerships, cultural sensitivities, and resource allocation in improving pediatric cancer care quality in cross-cultural less-developed regions like the Qing-Tibetan area. Collaborative efforts involving NGOs, healthcare institutions, and community leaders show promise for sustained improvements. Addressing administrative challenges, implementing robust evaluation frameworks, and fostering culturally sensitive healthcare practices are essential for lasting enhancements in pediatric cancer care delivery within such complex environments.

Speaker: Q. Wang

Theme: 3. Healthcare systems & policies

Topic: Quality of cancer care

#### 000466 | Fundraising to bridge the socioeconomic divide in access and affordability for high-quality cancer care

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**Background and context:** India has taken a significant step towards universal health coverage with implementation of a national insurance scheme. However, the rising burden of cancer, incomplete coverage through government schemes, and a largely unregulated and diversified healthcare system contributes to significant catastrophic health expenditure and impoverishment. Thus, there is a need to strengthen the public health care infrastructure and provide financial support to supplement government schemes. We describe our experience and outcomes of establishing a dedicated fundraising cell.

**Aim:** Establishing a dedicated fundraising cell and implementation of an effective strategy to garner financial support from corporates and philanthropists, to improve infrastructure in a tertiary level cancer centre and provide high-quality timely care for patients with cancer.

**Strategy/tactics:** We set up a 3-member Fundraising cell in September 2019 to collate the demand (funds for infrastructure and patient support) from end-user departments based on the needs assessment, relative value and potential impact. We generated a priority list along with specific project proposals for each of these demands with milestone-based budgeting.

**Programme/Policy:** We designed a coordinated approach to match end-user requirements, donor preferences and objectives, and other criteria including financial grant or direct in-kind donations, grant duration and utilization timelines.

**Process:** The fundraising cell facilitated legal agreements, disbursement of grants, purchasing, timely grant utilization reports and third party audits. Unique aspects include monthly “Donor Program” and “Grateful Patient program” to build a corpus for unexpected but urgent critical requirements. We ensured complete transparency and accountability of the entire process with continuous engagement with donors. The effort involved leadership buy-in, and substantial cooperation between healthcare professionals, accounts and purchase departments.

**Outcomes:** A total of 200 million USD were raised over the past 4 years towards support for infrastructure (including equipment), patient treatment, screening, educational and training activities, and cancer research. Most notably, it enabled creation of new treatment facilities to provide cancer care across India. Approximately 40,000 patients were supported annually. We have been able to create a robust donor database of over 600 donors. The average annual costs to run the Fundraising Cell has been 108,000 USD.

**What was learned:** Understanding the ever-evolving and dynamic funding needs of the hospital while staying informed of the donor capabilities and their focus areas for support (through ongoing research), has helped the fundraising cell effectively map these two, leading to growth in donations year-on-year. Our experience can be an exemplar for replication in other disease areas and settings, especially in LMICs, where there is a large unmet need due to limited public expenditure on health.

Speaker: S. Rao

Theme: 3. Healthcare systems & policies

Topic: Innovative fundraising models

**000525 | Improving policies to address mental health in cancer for patients and caregivers: A cross-country assessment of the policy landscape**

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**Background and context:** The global cancer burden is growing, resulting in a significant physical and mental impact on patients and caregivers. However, there has been limited policy action to address the mental health burden, with the majority of policy focusing on the physical aspects of cancer. This is despite the significant prevalence of mental health issues in cancer patients with ~40% having a diagnosable mental health condition and the negative impact this can have on cancer outcomes, including increased mortality and reduced quality of life<sup>1</sup>.

**Aim:** The study aims to assess the current policy environment for mental health in cancer by identifying policy gaps, variations, and best practices. The findings informed policy recommendations to improve the holistic patient-journey approach to policy development and address the mental health burden in cancer patients globally.

**Strategy/tactics:** Our approach involved a literature review focused on five countries and regions with diverse healthcare systems, namely: Australia, Canada, the United Kingdom, the United States, and policies at the European Union level.

**Programme/Policy:** We assessed government policies including cancer control plans; academic literature; and grey literature such as blogs and non-peer-reviewed publications.

**Process:** We used a structured framework to assess policies across different areas: policy recognition; innovation process; awareness and education; diagnosis efforts; care provision; access to treatment; and post-treatment care.

**Outcomes:** Our findings reveal significant gaps and variations in policies, most notably a lack of targeted initiatives to address mental health needs throughout the cancer journey. This is reflected in the absence of mental health considerations in cancer plans. Key challenges across the policy environment relate to suboptimal diagnosis efforts, poorly defined referral pathways, and limited access to affordable psychosocial treatment. This creates considerable barriers to timely mental health diagnosis and treatment, negatively impacting patients and caregivers. The study also identifies best practices and areas with greater policy development including increasing awareness and education of the mental health in cancer burden, which provides a foundation for future change.

**What was learned:** The findings informed the development of policy recommendations that center on how to increase mental health in cancer recognition in policymaking and improve diagnosis and access to treatment.

#### References

Caruso R, Breitbart W. (2020). Mental health care in oncology. Contemporary perspective on the psychosocial burden of cancer and evidence-based interventions.

Speaker: M. Thrift-Perry

Theme: 3. Healthcare systems & policies

Topic: Cancer and well-being/physical activity/quality of life

**000536 | Turning the page on breast cancer, a multi-level program addressing breast cancer disparities in Ohio**

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**Background and context:** Turning the Page on Breast Cancer (TPBC) is a multi-level implementation science e-Health quality improvement program tailored to address disparities in breast cancer mortality among Black women in Ohio. The approach is focused on screening, follow-up of abnormal findings, and referrals to genetic counseling and testing. Since November 2020, TPBC has been operating at four levels—community, health center, providers, and patients—within 13 Ohio counties with high rates of breast cancer mortality among Black women.

**Aim:** The program aim is to address disparities in breast cancer mortality and enhance health outcomes associated with breast cancer among Black women.

**Strategy/tactics:** Components of the program include community group partnerships; provider continuing education presentations; a website tailored to Black women in Ohio offering risk assessments, education, and personalized risk information; and access to patient navigators.

**Programme/Policy:** Women are invited to visit the website via Facebook ads and community events. Representatives from the participating centers are asked to complete organizational assessments (OA) and interviews.

**Process:** Data collected reflected clinic service information, referral services, electronic health records (EHR) information, clinic resources/personnel, patient demographic characteristics, perceived barriers to accessing care, and patient communication methods. Data from Qualtrics and Google Analytics (GA) were examined for website activity and geographic access distribution.

**Outcomes:** Nine healthcare centers completed the OA. Patients of larger clinics were referred directly for mammograms or had them on site; patients of smaller clinics initiated and requested their own mammogram referrals, seeking out external clinics. Interviews revealed that financial costs, fear of diagnosis, and limited access to screening sites were common challenges cited as barriers to breast health services. Through a combination of advertising via social media and outreach at community events. Between November 2020 and March 2024, the TPBC website has 8332 unique users. 1166 website visitors

completed the risk assessment, with 122 requesting to be contacted by a patient navigator.

**What was learned:** TPBC shows the benefit of including communities, clinics, and e-Health tools to reach Black women and their providers in Ohio to address cancer disparities.

#### References

Willi L. Tarver, DrPH, MLIS1,2, Ryan D. Baltic, MPH1, Ruvarashe Rumano, MPH1,3, Tasleem J. Padamsee, PhD1,3, Chasity M. Washington, MPH1, Cecilia R. DeGraffinreid, MHS1, Bridget Oppong, MD1, Samilia Obeng-Gyasi, MD MPH1, Daniel G. Stover, MD1, Clara N. Lee, MD1,3, Amanda E. Toland, PhD1,2, Timiya Nolan, PhD\*4, Heather Hampel MS, LGC6,7, and Electra D. Paskett, PhD1,2,7. Turning the Page on Breast Cancer: An e-Health Application to Address Breast Cancer Disparities among Black Women in Ohio. (Anticipated Publication: 2024)., End Breast Cancer Ohio. (2020). Turning the Page on Breast Cancer. Retrieved from: <https://endbreastcancerohio.org>.  
 Padamsee, T. J., Stover, D. G., Tarver, W. L., Washington, C. M., Baltic, R. D., DeGraffinreid, C. R., Whiting, C. R. B., Rumano, R., Lee, C. N., Nolan, T., Oppong, B., Obeng-Gyasi, S., Toland, A. E., Bernardo, B., Hampel, H., & Paskett, E. D. (2023). Turning the Page on Breast Cancer in Ohio: Lessons learned from implementing a multilevel intervention to reduce breast cancer mortality among Black women. *Cancer*, 129 (S19), 3114–3127. <https://doi.org/10.1002/cncr.34845>.

Speaker: E. Paskett

Theme: 3. Healthcare systems & policies

Topic: Equity and cancer

#### 000558 | Development and implementation of multi-disciplinary prostate cancer survivorship care pathways: A participatory research project

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**Background:** Prostate cancer is the second most commonly diagnosed cancer in men globally, and the most frequently diagnosed cancer in men in over 60% of countries worldwide. Men with prostate cancer face a multitude of treatment-related symptoms and heightened psychological distress, both short and long-term. However, prostate cancer survivorship care is often fragmented with best practice models of care largely undefined.

**Aim:** To co-design and implement standardised multi-disciplinary prostate cancer survivorship care pathways, underpinned by the Prostate Cancer Survivorship Essentials Framework [1], for men: (i) newly diagnosed with localised prostate cancer; and (ii) commencing androgen deprivation therapy (ADT).

**Methods:** A five-phase participatory process mapping project comprising: (i) patient journey mapping and data/information gathering; (ii) process identification; (iii) map generation; (iv) process analysis; and (v) implementation. A five-phase participatory process mapping project comprising: (i) patient journey mapping and data/information gathering; (ii) process identification; (iii) map generation; (iv) process analysis; and (v) implementation.

**Results:** Patient journey mapping ( $n = 47$ ) and service engagement ( $n = 332$ ) informed initial process identification. A multi-disciplinary working group ( $n = 9$ ) identified clinical processes for each treatment stream. Survivorship assessment and planning points, routine distress screening, clinical surveillance/review, referrals and clinician checklists were standardised across all pathways. Map generation with concurrent rounds of iterative feedback culminated in service-wide pathway consensus. Seven pathways were developed: pre-treatment (localised prostate cancer), newly diagnosed (surgery, radiation, chemotherapy, active surveillance, watchful waiting) and ADT. A tailorabile prostate cancer survivorship care plan template for all pathways was also developed. A dedicated stakeholder workshop informed the implementation strategy. Pathways were integrated into the practice management system as stand-alone survivorship consultations. Pathways were implemented into the service in March 2023 and delivered as 'opt-out' consultations, with over 370 survivorship consultations undertaken in the first 12-months.

**Conclusion:** In order to facilitate change in prostate cancer survivorship care and outcomes, partnerships across disciplines which foster the delivery of quality prostate cancer survivorship care are critical. This project facilitated a more streamlined approach to, and shared understanding of, the routine integration of survivorship assessment and care planning into multi-disciplinary clinical practice, which is an essential step in the provision of responsive and well-coordinated survivorship care for men with prostate cancer.

#### References.

1.Dunn J et al. <https://doi.org/10.1111/bju.15159>

Speaker: N. Heneka

Theme: 3. Healthcare systems & policies

Topic: Survivorship and rehabilitation

#### 000597 | Indian Cancer Society's Cancer Cure Fund (ICS CCF)—Saving lives through unique philanthropic mutual fund model

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**Background and context:** Limited government funding, unaffordable insurance cover and high cost of cancer treatment for underprivileged patients led to the launch of a philanthropic Mutual Fund(MF) scheme.

**Aim:** The fund focuses on significant and timely financial assistance to cancer patients, aimed at curative treatment and standard of care through the ICS's Cancer Cure Fund (CCF) Project via its empanelled hospitals.

**Strategy/tactics:** In 2011—the HDFC Charity Fund for Cancer Cure was launched, partnered between Indian Cancer Society(ICS) an apex

non-profit organization committed to combat cancer, Tata Memorial Centre(TMC) a leading institution specializing in oncology in India and HDFC Mutual Fund (HDFC MF) a premier asset management company in India.

**Programme/Policy:** The contribution to the mutual fund is capital protected and returned/renewed at the end of a three-year period. The annual dividend (either whole or part) surrendered by the investor is donated to CCF for meeting the cost of cancer treatment for the poor. From 2014, HDFC MF matched the investors donation with an equal contribution as corporate social responsibility(CSR), effectively doubling the donation impact. In 2020, due to COVID-19, the scheme was paused; but relaunched in 2023. HDFC MF investors now contribute 50% or 75% of the dividend income towards the fund.

**Process:** Hospital selection criteria include comprehensive standard of care, underserved location for cost reduction and affordable treatment. ICS Governing Board regularly review these hospitals to ensure compliance with guidelines. Navya a clinically validated AI system, conducts initial screening of the applications recommending those that fulfil 50% chance of survival. Top oncologist review applications that need further evaluation ensuring quality and affordable care, while maintaining a quick turnaround time. Services from Navya, oncologist and the governing board are pro bono. Use of technology and operating guidelines enable standardized processes leading to transparency and accountability in fund utilization.

**Outcomes:** Up to March 2024, CCF has received Rs.277 crore (~USD 33 million)-84 cr. and 134 cr. (~USD 10mil and 16 mil) from HDFC MF and its CSR respectively and the balance from other donors). CCF has successfully funded cancer treatment costs worth Rs.264 crore (~USD 32million) for 14,954 patients across 19 empaneled hospitals Pan India, with a five-year survival rate 50% five-year survival rate [2011–2019; 3550/6763 (52%)].

**What was learned:** The MF model is a sustainable source of funding for philanthropic endeavour. HDFC MF leverages its extensive network of clients- corporates and High Net Worth Individuals, enabling a meaningful contribution to the cause. While CCF's credibility has attracted additional donors to this impactful project. A robust process ensures thorough evaluation, approval, and timely fund disbursal. Continuous monitoring of patients is carried out to minimize lost-to-follow-up. The allocation of funds prioritizes applications with a minimum survival risk, maximizing impact thereby saving lives.

Speaker: A. Rawat

Theme: 3. Healthcare systems & policies

Topic: Innovative fundraising models

## 000671 | The status of government-funded radiotherapy centres in Nigeria

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**Background:** There is lack of information on the strength of work force, equipment and infrastructure in government funded radiotherapy centres in Nigeria necessary for National Cancer Control Programme Plan. For this reason, it was impossible to make strong statements on our National Cancer control programme based on projections without data to support this in our National cancer policy formulation. The research was able to address this gap and point out areas for urgent intervention and the roles funders like NGOs and Cancer Advocacy groups can play in strengthening access to cancer care in Nigeria. The research was a policy paper that will shape National Cancer Control Programme and usher in the much needed improved access to cancer care.

**Aim:** Access to radiotherapy (RT) is now one of the stark examples of global cancer inequities. Over 800,000 new cancer cases require potentially curative or palliative RT services in Africa, arguably less than 15% of these patients currently have access to this important service. For a population of over 200 million, Nigeria requires a minimum of 280 RT machines for the increasing number of cancer cases. Painfully the country has only 8 government-funded radiotherapy machines. This study aimed to evaluate the status of the eight (8) Government funded RT centres in Nigeria regarding RT equipment, workforce and infrastructure to quantify their ability to deliver effective RT to their patients.

**Methods:** A survey addressing ten (10) critical areas was used to assess the eight (8) Government-funded RT centres in Nigeria.

**Results:** Unfortunately, 6 of the 8 centres (75%) surveyed have not treated patients with RT over the last 2 years because they do not have functioning teletherapy machines. Only 2 RT centres have the capability of treating patients using advanced RT techniques. There is no PET-CT scan in any of the Government-funded RT centres. The workforce capacity and infrastructure across the 8 centres are limited. All of the centres lack residency training programmes for medical physicists and radiation therapy technologists (RTTs) resulting in very few well-trained staff.

**Conclusion:** As the Nigeria government plans for the new National Cancer Control Plan, there is an urgent need to scale up access to radiotherapy by upgrading the RT equipment, workforce and infrastructure to meet the current needs of Nigerian cancer patients. While the shortfall is apparent from a variety of radiotherapy-capacity data bases, this detailed analysis provides essential information for an implementation plan involving solutions from within Nigeria and with global partners.

## References

- Datta N, Rogers S, Bodis S: Challenges and opportunities to realize “The 2030 Agenda for Sustainable Development” by the United Nations: Implications for radiation therapy infrastructure in low- and middle-income countries. Int J Radiat Oncol Biol Phys 105:918–933, 2019, Press RH, Shu HKG, Shim H, et al: The use of quantitative imaging in radiation oncology: A quantitative imaging network (QIN) perspective. Int J Radiat Oncol Biol Phys 102:1219–1235, 2018, Lou B, Doken S, Zhuang T, et al: An image-based deep learning framework for individualising radiotherapy dose: A retrospective analysis of outcome prediction. Lancet Digit Health 1:e136-e147, 2019, Anacak Y,

Zubizarreta E, Zaghloul M, et al: The practice of paediatric radiation oncology in low- and middle-income countries: Outcomes of an international atomic energy agency study. Clin Oncol (R Coll Radiol) 33: e211-e220, 2021, Anakwenze Akinfenwa CP, Ibraheem A, Nwankwo K, et al: Emerging use of public-private partnerships in public radiotherapy facilities in Nigeria. JCO Glob Oncol <https://doi.org/10.1200/GO.21.00066>, 2021, Wroe LM, Ige TA, Asogwa OC, et al: Comparative analysis of radiotherapy linear accelerator downtime and failure modes in the UK, Nigeria and Botswana. Clin Oncol (R Coll Radiol) 32:e111-e118, 2020, Fatioregun OA, Bakare O, Ayeni S, et al: 10-Year mortality pattern among cancer patients in Lagos State University Teaching Hospital, Ikeja, Lagos. Front Oncol 10:573036, 2020, Fatunmbi M, Saunders A, Chugani B, et al: Cancer registration in resource-limited environments-experience in Lagos, Nigeria. J Surg Res 235:167–170, 2019, Ige TA, Jenkins A, Burt G, et al: Surveying the challenges to improve linear accelerator-based radiation therapy in Africa: A unique collaborative platform of all 28 African countries offering such treatment. Clin Oncol (R Coll Radiol) 33:e521-e529, 2021, International Atomic Energy Agency (IAEA): Division for Human Health: DIRAC (Dlrectory of RAdiotherapy Centres), 2022. <https://dirac.iaea.org/Query/Countries>, Martin MG, Chidebe RCW, Nwaneri MO, et al: Impact of 10-day Fulbright Specialist Program and Project Pink Blue Education Sessions on medical oncology knowledge among physicians who treat cancer in Nigeria. J Cancer Educ 38:378–382, 2022, Vatnitsky S, Rosenblatt E: Transition From 2-D Radiotherapy to 3-D Conformal and Intensity Modulated Radiotherapy. Vienna, International Atomic Energy Agency, 2008, Barton MB, Gebski V, Manderson C, et al: Radiation therapy: Are we getting value for money? Clin Oncol 7:287–292, 1995, National Population Commission (NPC): National Policy on Population for Sustainable Development. NPC Publication 1st ed., Abuja, Nigeria, 2021. [https://drive.google.com/file/d/1\\_LqDbc249sq\\_bo\\_Cmpa8VSZBmk8fHJSj/view?usp5embed\\_facebook](https://drive.google.com/file/d/1_LqDbc249sq_bo_Cmpa8VSZBmk8fHJSj/view?usp5embed_facebook), Abdel-Wahab M, Bourque JM, Pynda Y, et al: Status of radiotherapy resources in Africa: An International Atomic Energy Agency analysis. Lancet Oncol 14:e168-e175, 2013, Rodin D, Abdel-Wahab M, Lievens Y: Global radiotherapy challenge: Turning data into action. Lancet Glob Health 6:S15-S16, 2018, Federal Ministry of Health: National Cancer Control Plan 2018–2022, 2018. [https://www.iccp-portal.org/system/files/plans/NCCP\\_Final%20%5B1%5D.pdf](https://www.iccp-portal.org/system/files/plans/NCCP_Final%20%5B1%5D.pdf), Federal Ministry of Health: National Cancer Control Programme, 2023. [https://www.health.gov.ng/index.php?option5com\\_content&view5article&id5329&Itemid5551](https://www.health.gov.ng/index.php?option5com_content&view5article&id5329&Itemid5551), Balogun O, Rodin D, Ngwa W, et al: Challenges and prospects for providing radiation oncology services in Africa. Semin Radiat Oncol 27:184–188, 2017, Zubizarreta EH, Fidarova E, Healy B, et al: Need for radiotherapy in low and middle income countries—The silent crisis continues. Clin Oncol (R Coll Radiol) 27:107–114, 2015, Leng J, Ntekim AI, Ibraheem A, et al: Infrastructural challenges lead to delay of curative radiotherapy in Nigeria. JCO Glob Oncol <https://doi.org/10.1200/JGO.19.00286>, 2020, eng J, Ntekim AI, Ibraheem A, et al: Infrastructural challenges lead to delay of curative radiotherapy in Nigeria. JCO Glob Oncol <https://doi.org/10.1200/JGO.19.00286>, 2020, ational Population Commission (NPC): National Policy on Population for Sustainable Development. NPC Publication

1st ed., Abuja, Nigeria, 2021. [https://drive.google.com/file/d/1\\_LqDbc249sq\\_bo\\_Cmpa8VSZBmk8fHJSj/view?usp5embed\\_facebook](https://drive.google.com/file/d/1_LqDbc249sq_bo_Cmpa8VSZBmk8fHJSj/view?usp5embed_facebook), International Agency for Research on Cancer (IARC): The Global Cancer Observatory (GCO): Nigeria, 2020. <https://gco.iarc.fr/today/data/factsheets/populations/566-nigeria-fact-sheets.pdf>, Yennurajalingam S, Amos CE Jr, Weru J, et al: Extension for community healthcare outcomes-palliative care in Africa program: Improving access to quality palliative care. J Glob Oncol 5:1–8, 2019. Speaker: S. C. Aruah Theme: 3. Healthcare systems & policies Topic: Radiotherapy

#### 000783 | Global radiotherapy community develops cancer plan framework for advocacy use

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**Background and context:** According to the International Agency for Research on Cancer (IARC), in 2020 there were 19.3 million new cancer cases, which is expected to increase to 30.2 million by 2040. To address the growing burden of cancer, a national cancer control plan (NCCP) is critical to a country's healthcare system. It is an imperative tool in reducing incidence and lowering mortality rates. Radiotherapy (RT) is a vital treatment modality for 50%–60% of cancer patients and is involved in 40% of curative treatments<sup>1</sup>. However, it is often neglected when developing NCCPs. The Global Coalition for Radiotherapy (GCR) is dedicated to increasing access to RT by enabling collaboration.

**Aim:** The GCR developed a set of RT Essential Standards to advocate for and facilitate the successful implementation of RT in NCCPs to improve cancer care outcomes.

**Strategy/tactics:** The GCR facilitated discussions across five workstreams to create a framework of essential RT standards. Working alongside Radiotherapy UK (RTUK), this was reflected in the RTUK Vision for World-class Radiotherapy in the UK report, highlighting the potential of this global resource.

**Programme/Policy:** The GCR and RTUK brought together a team of international experts, along with industry and not for profit representatives to develop a framework of key components for developing or updating a NCCP and the RT Vision Document.

**Process:** The collaboration was divided into five phases and took place through online webinars.

1. Participants were selected and onboarded.
2. A session was held which focused on identifying issues to be addressed and examining existing RT guidelines.

3. Participants defined five workstreams focusing on key areas to consider for successful RT implementation: Training & Technical Support; Maintenance & Service; Data & Monitoring; Quality & Safety; Advocacy.
4. Each workstream comprised of a group lead, working team members, and invited subject matter experts as needed.
5. Each working group presented its findings in the research process and gathered and implemented feedback.

**Outcomes:** The GCR RT Essential Standards provide the minimal criteria for successfully implementing RT in an NCCP. They are presented similarly to other healthcare plans, making them an easy-to-adapt resource for cancer care stakeholders. The GCR invites the RT community to provide input and adapt them to their local context. The piloting of this resource, as evidenced in the RT UK 10-year Vision Document proves the efficacy of this process.

**What was learned:** Through development, it became apparent that this resource will exist as a living piece of work, requiring global input on a regular basis to ensure inclusiveness across contexts, continued updates in line with international standards and global applicability.

Speaker: D. Laird

Theme: 3. Healthcare systems & policies

Topic: Radiotherapy

#### 000804 | Implementing an electronic tool to link patients to follow-up after abnormal cancer screening in Rwandan public health facilities

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 (2) Partners In Health/Inshuti Mu Buzima, Kigali, Rwanda; (3) Rwanda Biomedical Center, Kigali, Rwanda; (4) Clinton Health Access Initiative, Kigali, Rwanda; (5) Brigham and Women's Hospital, Boston, United States of America

**Background and context:** For cancer early detection programs to succeed at scale, robust electronic systems are needed to link patients to subsequent diagnostics and treatment. In 2015, Rwanda launched the Women's Cancer Early Detection Program (WCEDP), combining cervical cancer screening and breast cancer early detection at public health facilities.

**Aim:** The aim of this initiative was to facilitate care linkage and to evaluate the current program through use of a customized WCEDP electronic medical record (EMR) for use on tablets at rural health centers (HC) and computers at district hospitals.

**Strategy/tactics:** Stakeholders prioritized offline HC data collection and data upload into a central server. They selected OpenMRS, an open-source platform and the Ministry of Health (MoH)'s EMR system

of choice, for computer use, and mUzima, an Android mobile application interoperable with OpenMRS, for tablets.

**Programme/Policy:** The EMR was customized under the alignment of the MoH/Rwanda Biomedical Centre's digital health priorities with input from non-governmental stakeholders.

**Process:** Stakeholders met to develop data entry forms. A new central server and tablets were procured. In 2020, the program was launched in 3 initial districts. We extracted OpenMRS data from these 3 districts to evaluate initial rollout.

**Outcomes:** In 2020, 245 clinicians were trained in the 3 districts, where 20,551 breast and cervical screening encounters were recorded through 2022. Initial challenges included missing data and issues syncing tablet data with the national server. Though reports were developed to facilitate patient tracking, dissemination was gradual due in part to COVID.

**What was learned:** The EMR's successes included multi-stakeholder tool development/customization, rapid rollout in a resource-constrained health system, offline data entry capability, and proof of concept for country-wide synchronization of patient data into a central server. To improve data quality, key fields were made mandatory; data syncing issues were also addressed. Reporting tools and automated SMS are being finalized to address missed visits. Going forward, decentralized end-user support and ongoing data quality monitoring are critical. These lessons may be of value to other countries developing cancer screening information systems.

Speaker: J. M. V. Dusengimana

Theme: 3. Healthcare systems & policies

Topic: Integration of new technologies into cancer control strategies

#### 000863 | Assistance in restoring the work of an oncology clinic in Ukraine

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(1) Medisense (Medical center "KPD medclinic"), Kharkiv, Ukraine

**Background and context:** Our organization—Medisens Clinic®—Ukrainian limited liability company “Medical Center “KPD-Medclinic” was created in 2017, specializes in providing highly qualified care to cancer patients. Unfortunately, the building and medical equipment of our clinic were seriously damaged after a full-scale military invasion of the territory of Ukraine on February 24, 2022. Many team members had to leave the country due to hostilities, and we tragically lost our lead economist to a rocket attack.

We asked for help to cover the costs of reconstruction of the premises, medical equipment, ventilation systems, windows and doors. We received a grant from UICC in July 2022, for which we are eternally grateful.

**Aim:** Our main goal is to maintain a team of highly qualified specialists in order to be as helpful as possible to our patients, especially during times of war in the country.

**Strategy/tactics:** Kharkiv is a front-line city. Frequent lack of electricity, internet and mobile communications greatly complicates

communication. It is incredibly difficult to find workers, transport companies, and decide on logistics.

**Programme/Policy:** One of our exceptional teams is the gynaecological oncology team led by Professor Serhii Kartashov. The gynaecological oncology team diagnoses and treats a variety of cancers, including cervical, uterine, ovarian, sarcomas, fallopian tubes, vulva, and trophoblastic tumors. In addition, they lead scientific and clinical work in the field of reconstructive plastic surgery for vulvar cancer, epigenetic disorders in ovarian cancer and plastic surgery of the uterus after conservative myomectomy with subsequent reproduction.

**Process:** Despite the challenges we have faced, we remain committed to supporting our patients. We provide consultations, referrals to specialized facilities and experts, and explore alternative logistics methods for patients. We began to cooperate with city hospitals in a safer region—the Poltava region and offer surgical care to patients from all regions of Ukraine, including from dangerous conflict zones. A small medical office of the Medisense clinic was opened in the Poltava region, where patients come for face-to-face consultations. In Kharkiv, we rent an operating room and equipment to continue work. In the absence of electricity, we operate thanks to connected generators.

**Outcomes:** The received grant funds were used according to the stated criteria: cleaning the area, preparing for repair and restoration work, protecting window and door openings with wooden structures, transporting surviving equipment, renting a warehouse, guarding the remaining equipment in the building, salary.

**What was learned:** During the project, we conducted 656 consultations, 136 patients with oncological and pre-oncological pathology received surgical treatment.

Our main achievement is that, despite the shelling, blackouts, and lack of Internet, we do not stop our medical mission, we continue to work and give hope to cancer patients.

Speaker: M. Kartashova.

Theme: 3. Healthcare systems & policies

Topic: Other

#### 000887 | From the frontlines: A qualitative exploration of barriers faced by rural community health workers in enabling cancer care in India

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**Background:** Despite advancements in cancer diagnosis and treatment, low- and middle-income countries face numerous barriers that impede early detection and the delivery of high-quality cancer care, resulting in suboptimal outcomes for patients [1]. Community health

workers (CHWs) are grassroots health workers, who bridge the healthcare facilities and the community [2]. Little is known about the barriers faced by community health workers in cancer care provision, especially early detection.

**Aim:** To explore the barriers affecting cancer care delivery from the perspective of community health workers (CHWs) serving rural populations in three states in India (Kerala, Tamil Nadu, Rajasthan), as part of a cancer implementation research project (<https://accesscancer-care.in>).

**Methods:** In total, 5 focus group discussions [FGDs] involving 39 CHWs (Mean age 37.8 [8.1] years) were conducted. We adopted a descriptive qualitative approach to inquire the barriers faced by CHWs. The CHWs were identified through snowballing method by the research team. The FGDs were transcribed verbatim from local language, translated to English, and analyzed using direct manual content analysis by two researchers, and emerging codes were mapped into six major themes.

**Results:** The findings highlight several key themes (Figure 1):

(i) **Program Focus:** CHWs primarily prioritize non-communicable diseases like hypertension and diabetes over cancer, and lacked regular training in cancer early detection. (ii) **Treatment and Referral:** Limited local hospital infrastructure necessitates patient referrals to other districts. CHWs perceived that patients often avoid higher centers due to transportation costs and work loss. (iii) **Acceptability and Accessibility:** Stigma surrounding cancer diagnosis hinders early detection, with patients often traveling over 150 km to reach district hospitals. (iv) **Role of Family Support:** Societal norms and family dynamics influence care-seeking behavior, with male-centric decision-making prevailing. (v) **Rigid Customs and Beliefs:** CHWs remarked low health literacy in the community, with prevalent beliefs attributing cancer to wrath of god. They emphasized the pivotal role of local faith healers in determining health-seeking behaviour. (vi) **Challenges at Higher Centers:** Referrals to government health centers are fraught with numerous barriers. They faced challenges in navigating the community to higher centers, however, found innovative strategies to overcome them.

**Conclusion:** This study highlights the barriers faced by CHWs and impacts on the successful delivery of the programme of early detection and cancer care delivery in India. Addressing these core gaps in the cancer care ecosystem will facilitate equitable access and better outcomes among underserved rural communities across India.

#### References

- [1] Brand, N. R., Qu, L. G., Chao, A., & Ilbawi, A. M. (2019). Delays and Barriers to Cancer Care in Low- and Middle-Income Countries: A Systematic Review. *The oncologist*, 24(12), e1371–e1380. <https://doi.org/10.1634/theoncologist.2019-0057>
- [2] Ahmed S, Chase LE, Wagnild J, Akhter N, Sturridge S, Clarke A, Chowdhary P, Mukami D, Kasim A, Hampshire K. Community health workers and health equity in low- and middle-income countries: systematic review and recommendations for policy and practice. *Int J Equity Health*. 2022 Apr 11;21(1):49. doi: <https://doi.org/10.1186/s12939-021-01615-y>. PMID: 35410258; PMCID: PMC8996551

Speaker: S. Palaniraja

Theme: 3. Healthcare systems & policies

Topic: Improving care delivery

## 000893 | The socioeconomic burden of ovarian cancer in 11 countries: A cost-of-illness study

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**Background:** Globally, more than 900,000 women have been diagnosed with ovarian cancer in the last 5 years—[1] with around 7 out of every 10 women diagnosed in advanced stages.[2] If nothing changes, from 2024 to 2050 it is estimated that the disease will claim more than 8 million lives.[1].

**Aim:** Cost of illness studies are widely used in health economics to increase awareness about the burden of diseases. This study quantifies the socioeconomic burden of ovarian cancer in 11 countries spanning world regions and income levels (Australia, Canada, Colombia, India, Kazakhstan, Kenya, Malawi, Malaysia, Nigeria, United Kingdom, United States). The evidence can be used to drive changes in policy and practice that improve survival and quality of life for ovarian cancer patients and their caregivers.

**Methods:** We built an Excel-based instrument that used a prevalence-based cost-of-illness approach and a societal perspective to estimate the annual burden of ovarian cancer. The instrument leverages data from editions of the World Ovarian Cancer Coalition's Every Woman Study™; contains a microcosting framework to assess the resources and costs of providing care; and uses data from novel systematic reviews and meta-analyses conducted by this study's authors to assess the effect of ovarian cancer on patient labor productivity outcomes and the amount of time that caregivers devote to caring for people living with the disease.

**Results:** In 2023, across 11 countries, we estimated USD 69.9 billion in socioeconomic losses attributable to ovarian cancer. Socioeconomic losses as a percent of GDP ranged from 0.02 percent in Malawi to 0.24 percent in the United Kingdom. Health expenditures to cover treatment in the first 2 years post-diagnosis were 7, 41, and 118 times total health spending per capita in high, upper-middle, and low and lower-middle countries respectively. Patients spent nearly 3700 years of time traveling to—or receiving treatment. Women lost labor productivity equivalent to 2.5 million workdays due to ill-health from ovarian cancer and more than 9400 women living with ovarian cancer or survivors were estimated to be missing from the workforce. Caregivers spent 17,000 person years providing practical support to patients—an average of 33 days per woman living with ovarian cancer.

**Conclusion:** This study identified substantial socioeconomic costs accruing to a range of societal stakeholders. To reduce costs, it is imperative to align behind strategies that can prevent ovarian cancer and diagnose it as quickly as possible, while also strengthening support for the patients, caregivers, and health systems that are confronted by it.

## References

[1] International Agency for Research on Cancer. Data visualization tools for exploring the global cancer burden in 2022. DataViz. 2024. <https://gco.iarc.fr/today/en> (accessed 1 March 2024).

[2] Matz M, Coleman MP, Carreira H, et al. Worldwide comparison of ovarian cancer survival: Histological group and stage at diagnosis (CONCORD-2). *Gynecol Oncol*. 2017;144:396–404.

Speaker: B. Hutchinson

Theme: 3. Healthcare systems & policies

Topic: Cost of cancer

## 000901 | Multisectorial partnerships to strengthen the readiness of the healthcare systems for breast cancer patients: A case study in Asunción, Paraguay

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 (1) Direct Relief, Santa Barbara, United States of America; (2) City Cancer Challenge, Barcelona, Spain; (3) City Cancer Challenge, Rio de Janeiro, Brazil; (4) City Cancer Challenge, Bogotá, Colombia; (5) Direct Relief, Asunción, Paraguay; (6) City Cancer Challenge Foundation, Genève, Switzerland

**Background and context:** Using a multisectoral approach to partnership, Direct Relief (DR) and City Cancer Challenge (C/CAN) have co-developed a breast cancer care program with the Ministry of Health (MoH) Paraguay that comprehensively addresses cancer care. According to the Paraguayan MoH, there are approximately 22,000–29,000 new cancer cases diagnosed annually, representing the leading cause of death nationally. Two-thirds of these patients in Paraguay rely on the MoH system of cancer hospitals to receive care (diagnosis and treatment), all of which is free of charge. Today the Paraguayan MoH can only provide limited access to cancer therapies to the general population due to budget constraints worsened by the financial effects of COVID-19.

**Aim:** To describe the development of the concept and model for a comprehensive breast cancer initiative, which DR started in 2019, inviting collaborators and sponsors to support equitable and quality access to breast cancer diagnostics, and medicines, for women living in LMICs.

**Strategy/tactics:** In late 2021, following an agreement with a private pharmaceutical manufacturer, who committed to providing aid in the form of donated medicines and other financial resources, DR began collaborating with C/CAN and together selected Paraguay as a committed pilot country for the initiative. Over the next 2 years C/CAN implemented in Asunción its unique comprehensive city engagement model, focusing on women with HER2+ breast cancer. This required completion of numerous capacity development interventions at a national level, as well as refurbishment, equipment, and quality and process improvement at four targeted hospitals in Asunción.

**Programme/Policy:** Multisectoral partnership model for a comprehensive breast cancer initiative.

**Process:** In partnership with Paraguay's MoH, DR and C/Can have reinforced the ongoing efforts to strengthen local infrastructure and quality; and the healthcare workforce in Paraguay's leading public cancer treatment institutions.

**Outcomes:** In addition to the Health System Strengthening (HSS) workstream, this model provided training to 112 healthcare workers and helped to develop a Quality Committee that oversees the institutional healthcare processes at the targeted hospitals. In conclusion, this multisectoral partnership will support Paraguay in achieving health outcomes comparable to best results in the surrounding countries.

**What was learned:** Following the implementation phase of this program, this model will transition to other key learning cities, enabling sustainable access to comprehensive cancer care. This model additionally creates the opportunity for HSS that extends beyond breast cancer patients through the development of national cancer registries.

Speaker: M. Sheridan

Theme: 3. Healthcare systems & policies

Topic: Cross sector collaboration to make systems change/strengthen systems

#### 000972 | The role and value of community cancer support centres: Creating the Alliance

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Mateeva, N. (1); Greally, H. (1); Leatham, C. (1)

(1) National Cancer Control Programme, Dublin, Ireland

**Background and context:** The National Cancer Control Programme (NCCP) in Ireland established The Alliance of Community Cancer Support Centres (CCSCs) and Services (The Alliance) in 2022 recognising that community cancer support centres and services fill a substantial gap in cancer care for both patients and families especially in the psychosocial domain.

**Aim:** The aim of The Alliance is to progress community-led cancer support and advocate for the development of integrated pathways between independent CCSCs, acute hospitals, and primary care settings.

**Strategy/tactics:** A number of initiatives to implement and build community cancer support are being used including; needs assessment, developing models of care, coalition building, patient and stakeholder partnership, consultation, and multi-sectoral engagement to utilise existing capacity within the system.

**Programme/Policy:** Working in a partnership model with existing services in statutory, non-statutory sectors and charity organisations is extending the provision of psychosocial services available to Irish cancer patients and their families. This model intends to further integrate and support patient pathways recognising that community services are essential for the provision of support across the cancer continuum but in particular the survivorship period.

**Process:** The NCCP sought to standardise practice and build The Alliance with existing CCSCs by developing Best Practice Guidance and a

Self-assessment and Peer-review Process. Sixteen centres have achieved Full Membership status. A process evaluation was conducted with results informing on-going implementation.

**Outcomes:** The Alliance currently has 36 partners; representing 21 out of 26 counties in Ireland. The centres welcomed over 7000 new clients in 2022 and provided 18 different survivorship programmes. Two networking events were also held to promote collaboration.

CCSCs provide activity statistics, which influence funding granted by the NCCP, monitor the survivorship supports being offered and demonstrate the breadth of services available.

- Members of The Alliance are eligible to deliver NCCP governed survivorship programmes.
- The Alliance devotes resources to develop evidence for potential survivorship interventions and action research is being conducted in CCSCs.
- New client intake and assessment practices in CCSCs have been standardised and referral pathways are being progressed.

**What was learned:** The Alliance aims to build confidence and assurance among the public, healthcare professionals, and the CCSCs that the services being offered are reaching a recognised standard. Working with NGOs in a partnership model has extended the provision of psychosocial services available to Irish cancer patients and their families.

Speaker: L. Mullen

Theme: 3. Healthcare systems & policies

Topic: Improving support outcomes

#### 000991 | Creation of a CDE-based data structure for radiotherapeutic decision-making in breast cancer

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**Background:** As the application of Information Technology (IT) and Artificial Intelligence (AI) is of increasing relevance in oncology and radiation oncology, structured and precise data storage methods are needed. Common Data Elements (CDEs) introduced by the National Institutes of Health (NIH) offer a standardized way to ensure consistent data collection. Despite their advancement in other medical fields, radiation oncology still lacks a comprehensive list of CDEs, which is a critical requirement for structured documentation. A relevant application case is the radiotherapeutic decision-making in breast cancer patients, as it involves a variety of different criteria for complex decision-making.

**Aim:** Aim of the study was to create a CDE-based data structure aligning with UICC TNM Version 8 for radiotherapeutic decision-making in

breast cancer, facilitating the application of IT/AI solutions on a clear data basis. The study was conducted by the International Society for Radiation Oncology Informatics (ISROI).

**Methods:** The study involved identifying relevant criteria used in decision-making related to radiotherapy for breast cancer patients, creating a framework based on corresponding CDEs, and iteratively revising this framework to describe breast cancer situations. The methodology included analyzing Standard Operating Procedures (SOPs), defining corresponding CDEs, structuring these CDEs within a data framework, translating the framework into a machine-readable JSON format, and applying this structure to diverse oncological situations of breast cancer.

**Results:** A total of 31 criteria involved in radiotherapeutic decision-making were identified, resulting in the definition of 46 CDEs. These were structured into a hierarchy within an object-oriented data framework and subsequently translated into a JSON format. This structure was applied to 246 different breast cancer cases, demonstrating the utility of CDEs in clearly presenting complex clinical information for decision-making.

**Conclusion:** The creation of a CDE-based data structure represents a substantial advancement in structuring medical data for radiotherapeutic decision-making in breast cancer. This approach not only enables the precise description of various breast cancer situations but may also support the integration of IT/AI solutions in clinical practice and the sharing of a standardized data framework among healthcare professionals.

Speaker: F. Dennstädt

Theme: 3. Healthcare systems & policies

Topic: Radiotherapy

#### 001001 | Lessons learned from the joint International Atomic Energy Agency (IAEA), International Agency for Research on Cancer (IARC) and World Health Organization (WHO) support to develop National Cancer Control Plans in Low- and Middle-Income Countries

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**Background and context:** The IAEA and WHO assist countries in building and strengthening their cancer control capacity. This support includes guidance to Member States to set priorities for national cancer control; developing, adopting and strengthening diagnostic imaging, nuclear medicine and radiotherapy; procurement of equipment; training; and support in the mobilization of resources to develop and implement National Cancer Control Plans (NCCPs). Since 2020, 13 Member States with Low- and Middle-Income (LMICs) have received support to review or develop a new strategy for cancer control.

**Aim:** To identify the lessons learned from UN agencies support to develop NCCPs in LMICs.

**Strategy/tactics:** With support from UN agencies, NCCPs were developed in Benin, Botswana, Burkina Faso, Burundi, Chad, Ecuador, Guyana, Kenya, Paraguay, Senegal, Sierra Leone, Zambia, and Zimbabwe.

**Programme/Policy:** National Cancer Control Plans are designed to address the cancer burden across the entire cancer continuum: from prevention to screening and early detection, high-quality diagnosis, access to treatment and palliative care, as well as cancer registration and surveillance. These plans must also be well integrated into the six building blocks of health systems: service delivery, health workforce, health information systems, access to essential medicines, financing, and governance.

**Process:** Using semi-structured interviews with these Member States, we propose to review how these NCCPs were developed: were they based on the latest available evidence? Was an assessment of the previous cancer plan conducted? Was a priority-setting exercise conducted? Were national stakeholders consulted? Was the NCCP development process budgeted and funded?

**Outcomes:** Identify experiences from Member States that received support from UN agencies to develop their NCCP. Share selected case studies as examples of best practice.

**What was learned:** The lessons learned from the IAEA-IARC-WHO support to develop NCCPs will inform policies, programmes and practices in cancer control planning and implementation in LMICs with identification of enablers (e.g., engagement of civil society, State and non-State actors, budget allocation, political will) and barriers (e.g., lack of funding, political instability).

Speaker: L. Montel

Theme: 3. Healthcare systems & policies

Topic: Cancer control planning in low- and middle-income countries

#### 001078 | Cancer multidisciplinary team meetings in Benin's public hospitals: Current situation and prospects

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**Background:** Cancer is a major public health problem [1], with a particularly high mortality rate in sub-Saharan Africa [2] due to late diagnosis, limited access to appropriate treatments and non-compliance with best practice recommendations. Multidisciplinary team meetings (MDTM), or tumour boards, have emerged as a crucial strategy for improving the management of cancer patients by facilitating collaborative decision-making [3] and the development of personalised

treatment plans. While these meetings are well established in developed countries [4–6], their availability and organisation in sub-Saharan African countries, including Benin, remain poorly documented [7].

**Aim:** This study aimed to assess the status of MDTMs in Benin's public hospitals, describe their organization and functioning, identify barriers to their implementation, and propose a dedicated technological tool to enhance their accessibility and effectiveness.

**Methods:** This was a descriptive and analytical cross-sectional study conducted between December 2023 and January 2024. First, we obtained an exhaustive list of public hospitals at different levels of the healthcare system in Benin. We then randomly selected a physician in each hospital from among those working in the relevant cancer departments. Second, we developed a virtual MDTM platform.

**Results:** Out of the 40 public hospitals in Benin's health system, 38 were included in our study, two hospitals without cancer care departments were excluded. In terms of resources for cancer diagnosis, most hospitals lacked CT scanners (87%) and pathological anatomy services (92%). Similarly, few hospitals had essential cancer treatment modalities, with 39% offering cancer surgery, 16% providing chemotherapy, and none having radiotherapy. Among 38 public hospitals surveyed, only 6 (16%) organized MDTMs for cancer care. University status (OR = 14.5;  $p = 0.00$ ), the availability of CT scans (OR = 15.5;  $p = 0.01$ ) and chemotherapy services (OR = 10;  $p = 0.02$ ) were significantly correlated with MDTM organization. They were typically held weekly or fortnightly, with surgeons and medical oncologists being the most involved specialists. Challenges to participation included scheduling constraints, and institutional support. Regarding the feasibility of virtual MDTMs, 66% of participants endorsed the idea for improving meeting accessibility. The “eRCP” platform was designed to address these needs, providing an easy-to-use web application for submitting cancer cases, scheduling meetings, discussing cases in real-time with screen sharing capabilities, and ensuring decision traceability through report generation.

**Conclusion:** This study revealed that most public hospitals in Benin lacked resources for cancer diagnosis and treatment, and few (6/38) organized PCRs for patient management. To overcome these challenges, a virtual RCP platform was designed to optimize available resources. Its nationwide deployment could considerably improve cancer care in the country.

## References

- 7-Brandão M, Guisseve A, Bata G, Firmino-Machado J, Alberto M, Ferro J, et al. Survival Impact and Cost-Effectiveness of a Multidisciplinary Tumor Board for Breast Cancer in Mozambique, Sub-Saharan Africa. *Oncologist*. Jun 2021;26(6):e996-1008., 6-Haward RA. The Calman-Hine report: a personal retrospective on the UK's first comprehensive policy on cancer services. *The Lancet Oncology*. Apr 2006;7(4):336-46., Haward RA. The Calman-Hine report: a personal retrospective on the UK's first comprehensive policy on cancer services. *The Lancet Oncology*. Apr 2006;7(4):336-46., 5-Fleissig A, Jenkins V, Catt S, Fallowfield L. Multidisciplinary teams in cancer care: are they effective in the UK? *The Lancet Oncology*. Nov 2006;7(11):935-43., 4-Daubisse-Marliac L, Biboulet M, Delpierre C, Rivera P,

Bauvin É, Grosclaude P. Exhaustivité et qualité des réunions de concertation pluridisciplinaire: l'exemple du cancer du sein dans le département du Tarn. *Bulletin du cancer*. 2012;99(9):815-26., 3-Solé G. Mode d'emploi des Réunions de Concertation Pluridisciplinaire (RCP)-Objectifs et principe de fonctionnement. *médecine/sciences*. 2018;34:23-5., 2-Bray F, Parkin DM, African Cancer Registry Network. Cancer in sub-Saharan Africa in 2020: a review of current estimates of the national burden, data gaps, and future needs. *Lancet Oncol*. Jun 2022;23(6):719-28.

Speaker: F. H. R. Gnangnon

Theme: 3. Healthcare systems & policies

Topic: Interventions for disadvantaged populations

## 001100 | Consolidation of international efforts in providing radiotherapeutic services to the population of the Republic of Moldova and Ukrainian refugees

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**Background and context:** The Institute of Oncology is the only curative-prophylactic and scientific institution in the Republic of Moldova providing complex cancer treatment including radiotherapy. The IAEA's Technical Cooperation Department helped Moldova to acquire two linear accelerators in 2009 and 2022. Before 2022, there were insufficient human and technological resources to meet the needs of Moldova's cancer patients. Since the beginning of the armed conflict in Ukraine, 917 Ukrainian refugees have requested oncological assistance in Moldova.

**Aim:** Development of radiotherapeutic services to increase cancer patients' access to treatment.

**Strategy/tactics:** In April 2022, a WHO expert team determined the need for 8 linear accelerators in Moldova. Existing at that time, 2 linear accelerators were not considered sufficient to cover patients' access to radiotherapy. The crisis regarding refugee patients from Ukraine has worsened the situation. In this context, Ministry of Health and external partners developed a plan by identifying treatment options. Based on the international Tumor Board, a part of the patients was transferred to EU for treatment. The Oncological Institute and two NGOs have signed an agreement that guarantees free treatment for Ukrainian refugees.

**Programme/Policy:** The National Cancer Control Programme was re-evaluated to ensure that radiotherapeutic treatment is available to both national patients and refugees.

**Process:** In 2023, 3D brachytherapy equipment was purchased and installed. A new linear accelerator was also purchased and will be installed in 2024. The USA Government helps in financing the building of a new radiotherapy bunker for two LINACs. Installed in 2022 linear accelerator is currently being modernized in order to employ the IMRT method. The IAEA, ICEC, and other partners offer the Republic

of Moldova invaluable methodological, consultative, and training assistance with regard to strengthening human resources.

**Outcomes:** Due to international support, the number of radiotherapy sessions in 2022 has increased by 25.1% over 2021. The number of primary CT-topometry has increased by 21.9% with continuous evolution in 2023. This demonstrates how international involvement grows access to radiotherapy treatment.

**What was learned:** Consolidating support of international organizations and other external partners, the Republic of Moldova makes a significant progress in continuous development of its human, technical and infrastructure capacities for providing high quality medical care.

Speaker: R. Baltaga

Theme: 3. Healthcare systems & policies

Topic: Access to care

#### 001119 | How a self-assessment mobile app for cancer treatment facilities became a tool for successful collaborations with Ministries of Health and NGOs

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**Background and context:** The American Cancer Society (ACS) is committed to ending cancer as we know it for everyone. As part of this effort, the American Cancer Society (ACS) offers a ChemoSafe Facility Assessment application available free for download on Google and Apple stores. The app functions on mobile phones and tablet devices. The app is designed to assist hospital leaders and health workers in limited resource settings to quickly self-evaluate their occupational safety practices handling chemotherapy drugs and create short- and long-term safety improvement plans. Within the app, users complete a simple self-assessment questionnaire that produces recommendations for improvements based on international guidance. The app has been tested and used in 50+ facilities. One of the bonus outcomes of the app in Sub Saharan Africa was its influence on national coordination and international partner collaboration in Kenya, Ethiopia, and Nigeria.

**Aim:** Process evaluation of collaborative models between cancer centers, ministries of health, and NGOs to scale improvements to the safe handling and administration of chemotherapy drugs.

**Strategy/tactics:** Collection of consultation outcomes, reports, and interviews on how the ChemoSafe facility assessment mobile app was used by ministries and NGOs to streamline safety interventions efforts and conduct cost analysis for improving safe handling of chemotherapy drugs in cancer treatment facilities.

**Programme/Policy:** The unintended outcome ChemoSafe Facility Assessment app was the practical opportunities it created for ministries and NGOs to support coordinated improvements at multiple cancer centers. This occurred at the National Cancer Control Programme (NCCP) in Kenya, the Ministry of Health National Cancer Control Programme in Nigeria, Ministry of Health Ethiopia, and by the Global Cancer Disparities Initiative (GCDI) of Memorial Sloan Kettering Cancer Center at Obafemi Awolowo University Teaching Hospital. The American Cancer Society worked with each of these entities to evaluate their processes and integrate the applications utility into national cancer control planning practices.

**Process:** Process evaluation. Analysis of consultation outcomes, reports, and interviews.

**Outcomes:** The collaborations resulted in scaling and accelerating health professional activities in addressing chemotherapy safety at all of the cancer centers at 27 hospitals, which serve majority of the cancer patients in Kenya, Nigeria, and Ethiopia.

**What was learned:** The collaboration models were successful because of simplified access to shared non-sensitive data that enabled leaders to organize and streamline the ChemoSafe safety intervention concurrently at multiple hospitals.

Speaker: J. Swindell

Theme: 3. Healthcare systems & policies

Topic: Developing platforms for multi-sectoral dialogue

#### 001143 | Developing a National Network of Adolescent and Young Adult (AYA) Cancer Units: An update from the National Cancer Control Programme (NCCP), Republic of Ireland

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**Background and context:** Adolescent Young Adult (AYAs) with cancer are a diverse group as defined not simply by their age and distinct biology of their cancer, but in terms of the challenges they face with regards to adequate access to age-appropriate oncological care, representation on clinical trials, short- and long-term health and psychosocial issues, that include, fertility considerations, transition to survivorship care and psychosocial support.

**Aim:** To improve the standards and quality of cancer care provided to AYAs and at the same time define outcome measures of high-quality care for AYA patients across the proposed AYA cancer network as outlined in the Cancer Strategy [2016–2026].

**Strategy/tactics:** The NCCP launched “The Framework for the Care and Support of Adolescent and Young Adults (AYA) in Ireland [2021–2026]”. <https://www.hse.ie/eng/services/publications/framework-for-the-care-and-support-of-adolescent-and-young-adults-in-ireland.pdf>

**Programme/Policy:** In 2017, these unique and distinct needs of the AYA cancer patients in Ireland were recognised in the National Cancer Strategy [2017–2026] and specific recommendations were made to

address this health disparity.-<https://assets.gov.ie/9315/6f1592a09583421baa87de3a7e9cb619.pdf>

“The Framework for the Care and Support of Adolescent and Young Adults (AYA) in Ireland [2021–2026]”. <https://www.hse.ie/eng/services/publications/framework-for-the-care-and-support-of-adolescent-and-young-adults-in-ireland.pdf>

**Process:** In early 2019, the NCCP appointed a National Clinical Lead for Children, Adolescent and Young Adult Cancer (CAYA) and created and established a CAYA Clinical Leads Group (CLG) to focus on the specific needs and risks of AYA cancer patients with a view to improving the care and outcomes for this population over the lifetime of the Strategy.

**Outcomes:** Significant progress has been made in implementing the Framework throughout 2023.

The network construct was completed and consists of Children's Health Ireland and three AYA designated units based at St. James's Hospital, Cork University Hospital and Galway University Hospital. AYA clinical leads for each site have been nominated and the on-boarding of staff has commenced and will continue.

The strides made in 2023, including the ongoing investment in the three key AYA cancer units at St. James's, Cork University Hospital and Galway University Hospital, and the appointment of key CAYA staff, signify significant progress aligned with the National Cancer Strategy 2017–2026.

**What was learned:** The importance of having a National Cancer Strategy, and AYA Framework to act as a roadmap. National funding to employ approx. 20 additional staff to develop the National AYA Network and the appointment of a National Children Adolescent and Young Adult CLinical lead with additional Cancer Programme Management Support from the NCCP.

Speaker: F. Bonas

Theme: 3. Healthcare systems & policies

Topic: Role of Governments in cancer control

#### 001162 | Advocacy for patients' rights in times of war

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(1) NGO Athena. Women against cancer, Kyiv, Ukraine

**Background and context:** NGO “Athena. Women Against Cancer” (Athena.WAC) was founded in 2017 to advocate for the rights and interests of cancer patients in Ukraine. 2022–2023 was the most difficult period in Athena.WAC work.

**Aim:** Access to treatment for cancer patients during the war.

**Strategy/tactics:** Since the beginning of the full-scale war, we had to rearrange our efforts, as new, unexpected problems and challenges emerged: no access to medical care due to the shutdown of some oncology centers/ shelling/occupation; no information on where to get/continue treatment; lack of drugs, and in a certain period—a total shortage of them; worsening of the cancer patients' mental health.

**Programme/Policy:** Athena.WAC provides monitoring the availability of drugs and their supply to medical centers, as well as public control

in healthcare; participates in working groups to support public procurement of drugs and equipment of the Ministry of Health of Ukraine; initiates legislative changes to the public procurement of drugs that will help eliminate problems and improve patients' access to medicines.

- **Process:** Humanitarian project “Medicines for Cancer Patients”
- “Patient has right” hotline for cancer patients information support
- Campaign “Guaranteed” (supported by USAID) to raise awareness of Ukrainian citizens about free medical services guaranteed by the state
- MedEvac medical evacuation programme (cooperation with the Ministry of Health of Ukraine)
- Project of psychological support for cancer patients and their caregivers
- AthenaLIVE educational platform for patients, caregivers and doctors
- NGS testing for BRCA mutations for patients with breast cancer and molecular tumour profiling for patients with non-small cell lung cancer (UICC Solidarity Fund)
- **Outcomes:** 4000+ cancer patients provided with drugs; 5000+ hotline and 2600+ online consultations; 500+ cancer patients applications for MedEvac; 349 online sessions by oncology psychologists; 40 online events with an audience +95,000 viewers; free testing for 80 patients with breast cancer and 50 with NSCLC

**What was learned:** Despite the constant shelling by the Russian Federation, losses among our staff, blackouts, lack of access to the Internet and communication, we implemented changes in the healthcare system and improved patients' access to medical services and drugs. 2023—Lung Cancer Europe award for the best advocacy initiatives in protecting the rights of patients with lung cancer.

#### References

- <https://www.lungcancereurope.eu/2023/10/16/best-advocacy-initiative-athena-women-against-cancer/>, <https://www.brusselstimes.com/288874/ukrainian-cancer-patients-receive-life-saving-treatment-in-belgium/>, <https://www.athena-wac.com/>

Speaker: K. Yesina

Theme: 3. Healthcare systems & policies

Topic: The power of patient advocacy

#### 001165 | Transforming cancer care through capacity building of theranostic facilities in Pakistan—A success story of IAEA-Pakistan collaboration

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**Background and context:** Pakistan is committed to reaching healthcare benchmarks by 2030 through various programs under the umbrella of SDG3. Noncommunicable diseases, including cancer, pose a significant burden on Pakistan's morbidity. Theranostics, an

innovative aspect of nuclear medicine, targets different disease states by applying specific targeted therapy based on precise diagnostic tests. Theranostic is rapidly evolving field which has revolutionized cancer care but Pakistan lacked a theranostic facility till 2017.

**Aim:** The objective of this international collaboration was to develop theranostic capabilities & capacity through the International Atomic Energy Agency's (IAEA) technical cooperation program.

**Strategy/tactics:** PAEC, through its network of 20 cancer hospitals, addresses a significant portion of the country's cancer burden. For the past six decades, Pakistan has collaborated with the IAEA to enhance cancer care through its TC program. The IAEA has supported Pakistan in improving healthcare infrastructure, strengthening cancer control programs, and promoting the safe & effective use of nuclear and radiation technolo. Pakistan has aligned its Technical Cooperation Programme with the IAEA's Medium-Term Strategy.

**Programme/Policy:** IAEA technical cooperation (TC) primary mechanism for transferring nuclear technology to Member States, helping them to address key development priorities. National TC projects are usually designed to address pertinent issues and to either develeop infrastructure or train professionals in newer nuclear modalities.

**Process:** The first theranostic facility in Pakistan was established in 2017 through IAEA's TC program, with the installation of a fully automated theranostic labelling module. Under IAEA TC projects, such as PAK6023, 6024, 6025 and 6027 focused on strengthening cancer diagnosis and treatment facilities, targeted treatments for neuroendocrine tumors, liver and prostate cancer were established. Through these national TC projects, about 2-3 million euros were secured for theranostic infrastructure development and human resource capacity building. Recent collaborative efforts led to the installation of another fully automated theranostic module in the southern region of Pakistan under PAK6027 TC project. Through fellowships & scientific training programs, about 45 doctors, medical physicists, & radiopharmacists have been trained in the field of theranostics under IAEA TC projects. Additionally, scores of other healthcare workers have received training through expert missions.

**Outcomes:** The IAEA's technical cooperation program has bolstered Pakistan's national capacity by introducing targeted cancer treatment.

**What was learned:** These projects have pioneered theranostic facilities in Pakistan but have also expanded existing infrastructure. Through capacity-building efforts by the IAEA, new cancer treatment techniques have been introduced in Pakistan, benefiting hundreds of cancer patients with novel therapies.

Speaker: S. Fatima

Theme: 3. Healthcare systems & policies

Topic: Mobilising international networks

#### 001223 | Gap analysis of radiotherapy utilization in breast cancer patients in Indonesia

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**Background:** Breast cancer, with the highest incidence rate in Indonesia, remains the most common cause of cancer death in women. Radiotherapy, as one of the main pillars of breast cancer treatment, is not widely available in the country with more than 17,000 islands, and resources for investment are limited. To measure optimal utilization of the existing facilities, radiotherapy utilization needs to be calculated for the Indonesian cancer patients' case mix to provide evidence-based information for policy makers to support on-point scale up of radiotherapy services.

**Aim:** This study aims to calculate the optimal radiotherapy utilization rate (RUR) in breast cancer in Indonesia, the actual RUR, and analyze the gap between them.

**Methods:** As part of the International Atomic Energy Agency (IAEA)—Regional Cooperative Agreement (RCA) Regional Office's Research Project “Closing the Gap in Radiotherapy Access in RCA Government Parties”, Indonesia initiated the study and conducted gap analysis of radiotherapy utilization rate (RUR) in the country as phase 1 of the 3-year study, with support of global health economics' experts in the field. Data were collected from all radiotherapy centers in the country which were operational in 2019, including 10 types of cancer with highest incidence reports, which were then matched with radiotherapy-treated patients from departments of radiation oncology's data. Optimal and actual radiotherapy utilization was calculated for those most common cancer, including breast cancer.

**Results:** The 10 most common types of cancer are Colon, Rectum, Cervix, Ovary, Nasopharynx, Prostate, Leukaemia, Lymphoma, Breast, and Lung Cancer. Data from 17 major radiotherapy centers was analyzed for those 10 cancers, and it was found that the optimal RUR is 62.32% (52.11–69.26%). For breast cancer itself, the optimal RUR is found to be 66.33% (50.7–78.2%). However, the actual RUR calculated from this study was only 26.16% for 10 common cancers, and 35.64% for breast cancer. This finding highlights the significant gap in radiotherapy utilization even in cancer centers or hospitals equipped with radiotherapy facilities.

**Conclusion:** Considering the low availability of radiotherapy machines compared to the actual needs of radiotherapy for all cancer cases in Indonesia, under-utilization of radiotherapy facilities need to be taken into account seriously while formulating strategic policy in cancer control. Inadequate radiotherapy utilization needs to be tackled by multi-sectoral approach in Indonesia, highlighting lack of cancer awareness and multidisciplinary accommodation for radiotherapy referral system, before further investment is made to build new facilities. A closer look to women's inequitable access to cancer care in Indonesia is also needed for further exploration.

Speaker: T. B. M. Permata

Theme: 3. Healthcare systems & policies

Topic: Radiotherapy

#### 001228 | Building multidisciplinary tumor board capacity at a major tanzanian tertiary hospital: Lessons from the Tanzanian comprehensive cancer project

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**Background and context:** Tanzania faces a significant cancer burden, with 40,464 new cases and 26,945 related deaths reported in 2020 [1]. In response, the TZ government issued updated National Cancer Treatment Guidelines in 2020 to highlight key action areas. One key area is the expansion of multidisciplinary tumor board (MTB) use in national cancer care.[2] Given that there are only 2 institutions in TZ with operating MTBs—Aga Khan Health Services, Tanzania (AKHST) and Muhimbili National Hospital—there is a critical need for capacity building in this area. This report focuses on AKHST's strategies and efforts to develop increased MTB capacity from 2020 to 2023 through support from the Tanzania Comprehensive Cancer Project (TCCP).

**Aim:** To strengthen MTB capacity at a major Tanzanian tertiary hospital fielding complex referrals from throughout TZ, in order to expand its ability to deliver high-quality cost-effective cancer care and foster multidisciplinary professional development and collaboration in oncology.

**Strategy/tactics:** Strategies were tailored towards expanding both hard and soft capacities of the AKHST MTB.

**Programme/Policy:** In line with national guidelines for improving cancer treatment, TCCP directed capacity building efforts to strengthen the AKHST MTB through financial and administrative support.

**Process:** From 2020 to 2021, a full-time cancer registrar was hired to organize MTB meetings, liaise with involved departments, document minutes, and prepare case reports ahead of meetings to enhance participation. Attendance barriers were tackled by providing free lunch and virtual attendance options. To address decreased frequency and attendance between 2021 and 2022 due to organizational restructuring and the Covid-19 pandemic, CPD credits were offered for attendance. To improve participation and attendance between 2022 and 2023, AKHST leadership began emphasizing MTB participation by personally requesting all department heads to refer cancer cases and associated doctors to the MTB. In 2023, the CEO's office sent out MTB invitations and included attendance as a KPI evaluated during annual employment review.

**Outcomes:** In 2020, the MTB held 48 meetings with 308 total specialists and reviewed 59 cases. Initially, joint MTB meetings were conducted across AKH's Kisumu and AKH Dar es Salaam campuses, however, campus-specific MTB meetings were held separately beginning in 2021. This change, alongside Covid-19 pandemic challenges, caused the meeting frequency to drop to 19, with just 101 attendees and 48 cases reviewed that year. In 2022, despite a similarly low meeting frequency of 21, participation notably increased to 166 attendees reviewing 72 total cases. In 2023, the MTB reached its peak with 51 meetings, 473 participants, and 99 cases reviewed, marking a 68% increase in annual patient cases reviewed since 2020.

**What was learned:** Prior to TCCP intervention in 2020, the AKHST MTB had low attendance and case review volume since being established in 2018. The last 4 years of building its MTB capacity have

emphasized the necessity of adequate administrative support and addressing attendance barriers. Formally recognizing MTB participation as an employee performance metric and professional development opportunity (via CPD) was found to be crucial for capacity building.

## References

- [1] GLOBOCAN, 2020, Global Cancer Observatory Report for United Republic of Tanzania <https://gco.iarc.who.int/media/globocan/factsheets/populations/834-tanzania-united-republic-of-fact-sheet.pdf>
- [2] Nyagabona, S. K., Luhar, R., Ndumbalo, J., Mvungi, N., Ngoma, M., Meena, S., ... & DeBoer, R. J. (2021). Views from multidisciplinary oncology clinicians on strengthening cancer care delivery systems in Tanzania. *The oncologist*, 26(7), e1197-e1204.

Speaker: A. Chittibabu

Theme: 3. Healthcare systems & policies

Topic: Role of NGOs and civil societies in cancer control

## 001231 | Using time-driven activity-based costing approach to estimate the cost of cancer care in a low resource setting

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**Background and context:** Prioritizing cost-effective cancer interventions in a fair manner could reduce the financial burden on patients, health system, and societal level. In the absence of costing and economic evaluation studies in limited resource settings, decision makers lack information to allocate scarce resources for cancer care including its integration into country's health benefit package.

**Aim:** We estimated the cost of delivering cancer intervention in tertiary hospitals of Nepal for five major cancers namely breast, cervical, esophagus, gastric and lung.

**Strategy/tactics:** We utilized Time-driven activity-based costing (TDABC) approach to estimate the cost of delivering cancer intervention. TDABC is an innovative approach which closely estimates the cost of cancer services including screening and early detection treatment, and management of complications.

**Programme/Policy:** The evidence on cost associated with cancer interventions will be discussed with Nepal's Ministry of Health and Population, Health Insurance Board, and cancer stakeholders. It will also be dealt during priority setting of cancer interventions so as to inform cost-effective interventions in the health system context of Nepal. This exercise is a part of the 'Priority setting for universal health coverage' project in Nepal.

**Process:** We first identified cancer interventions and actions from the universal health coverage compendium package developed by the World Health Organization (WHO). We then mapped the facility inventory, observed patient journeys, interviewed providers and patients, and estimated the resource utilization (human resources, equipment, consumables, and indirect costs) while delivering cancer care to the patients.

**Outcomes:** TDABC approach provides data on unit cost of delivering a cancer intervention for a patient affected with a specific cancer. It also helps to map resources based on patient's journey of care seeking and identify inefficiencies in health system such as long waiting time and redundant steps.

**What was learned:** Although data intensive, the TDABC approach provides valuable information on the unit cost of providing cancer interventions which could be utilized to allocate resources for cancer care and designing health benefit packages for people affected by cancer. Similar approach can be used by other countries who aim to expand access to cancer interventions for people living with cancer.

Speaker: P. Khanal

Theme: 3. Healthcare systems & policies

Topic: Integrating cancer and NCDs into existing services, health systems strengthening, and patient empowerment

**001234 | The impact of the COVID-19 pandemic on cancer diagnosis and stage: A population-based study from the International Cancer Benchmarking Partnership**

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**Background:** The year 2020 was marked with the COVID-19 global pandemic that was responsible for over 4.4 million deaths. Overwhelmed health systems and hospitals, in addition to multiple national or regional lockdowns have affected services across the cancer continuum. The implementation of lockdown and effect on services varied between countries and within countries.

**Aim:** This study seeks to assess the incidence and stage distribution of major cancer types before and during the COVID-19 pandemic across seven countries involved in the International Cancer Benchmarking Partnership.

**Methods:** Population-level data of almost 1 million patients with cancer were collected from population-based cancer registries from 18 jurisdictions in Australia, Canada, Denmark, Ireland, New Zealand, Norway, and the UK. Overall number of cases and age-standardised incidence rates for 7 cancer sites (colon, rectum, lung, prostate, breast, melanoma of skin and ovary) for 2020 were predicted by applying the estimated annual percentage change in rates during 2015–2019 to 2019 cases using 2020 mid-year population estimates. Monthly proportion of cases during 2015–2019 were calculated and applied to estimate the predicted cases and rates and compared with the observed cases and rates for 2020. Stage distribution during the first 4 months of lockdown and all of 2020 were compared with previous years (2017–2018) and percentage change was calculated.

**Results:** Largest reductions in incidence were observed for breast cancer although varied across countries, decreasing from 190.6 per 100,000 to 151.2 per 100,000 in Ireland and 171.7 to 164.4 in New Zealand, in 2015–2019 and 2020 respectively. On contrary, incidence of ovarian cancer remained largely unchanged. While for most cancers decreases in incidence were observed between April to June 2020 for example, a 77% decline in prostate cancer cases in Ireland in April, the largest reductions in lung cancer cases were observed in November (Ireland, 26% decrease and New Zealand, 12% decrease), and in August for melanoma skin (Denmark, 29% decrease). Stage shift was observed, with marked variation across countries and cancer types, especially for lung cancer where stage IV cases proportionally increased in 2020 versus 2015/19.

**Conclusion:** The pandemic has largest impact during the first 4 months when societal lockdowns were in place in all countries. Large reductions in breast and CRC cancer were likely linked to temporary halts in screening services, and reductions in melanoma reflected disruptions in access to general health care. Investigations of the long-term impact on cancer patients are warranted. Benchmarking the impact of the COVID-19 pandemic on cancer diagnoses provides important information for government and policy-makers to minimise the impact of future pandemics.

Speaker: I. Soerjomataram

Theme: 3. Healthcare systems & policies

Topic: Covid and cancer

**001243 | Estimates of radiotherapy needs for Brazil and its major regions based on clinical and epidemiological data**

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**Background:** Radiotherapy is one of the three mainstays of cancer treatment, along with chemotherapy and surgery, and is recognized as

a highly effective treatment for improving survival and reducing suffering in cancer patients.<sup>1</sup> The indication for radiotherapy depends on the type of cancer and factors such as the stage of the disease. In recent years, it has been pointed out that the cancer care network in Brazil is not sufficiently structured to allow equitable and timely access to radiotherapy treatment, indicating a lack of equipment.<sup>2–4</sup>

**Aim:** To estimate the need for radiotherapy for Brazil and its major regions, by cancer type and for all, according to the epidemiological scenario and treatment indications calculated from national data.

**Methods:** Incident cases by cancer type, excluding non-melanoma skin, estimated for 2018 and staging data from hospital cancer records (RHC) of Brazilian regions were applied to decision trees for the use of radiotherapy according to clinical protocols previously developed by the Australian Collaboration for Cancer Outcomes Research and Evaluation (CCORE)<sup>5</sup>. A sensitivity analysis was performed to assess the impact of missing data for staging. From the estimated need, the number of external radiotherapy machines required was estimated and compared with the supply of machines in 2018.

**Results:** For Brazil, it was estimated that 53.6% of new cancer cases will require radiotherapy at some point during treatment. Among the Brazilian regions, the highest proportion of cases requiring radiotherapy was observed in the North, probably due to the impact of the high incidence of cervical cancer, which is more often diagnosed at advanced stages. Both the incidence pattern and staging of tumours in Brazil and its major regions showed differences in estimates compared to international staging data, resulting in an underestimate of cases requiring radiotherapy. To ensure coverage of cases requiring radiotherapy in Brazil, the need for 497 equipment was estimated. The comparison of the need for equipment with the availability of equipment in 2018 showed a deficit in all regions of Brazil, with the North being the region with the largest deficit for the SUS coverage network.

**Conclusion:** Given the dynamic nature of Brazil's cancer epidemiology<sup>6</sup>, characterized by changes in risk factors and treatment patterns, it is essential to continually update radiotherapy needs assessments. This will ensure that resource allocation for cancer care in Brazil is based on accurate and current local needs.

## References

- Rodin D, Jaffray D, Atun R, Knaul FM, Gospodarowicz M. The need to expand global access to radiotherapy. Lancet Oncol. 2014;15(4):378–80.
  - Brasil, Tribunal de Contas da União. Relatório de Auditoria Operacional: Política Nacional de Atenção Oncológica. Brasília; 2011.
  - Araújo LP de, Sá NM de, Atty AT de M. Necessidades Atuais de Radioterapia no SUS e Estimativas para o Ano de 2030. Rev Bras Cancerol. 2016;62(1):35–42.
  - Sociedade Brasileira de Radioterapia. Relatório 20–30. 2021. [https://sbradioterapia.com.br/wp-content/uploads/2021/08/Relatorio\\_Projeto\\_RT2030.pdf](https://sbradioterapia.com.br/wp-content/uploads/2021/08/Relatorio_Projeto_RT2030.pdf)
  - Barton M, Jacob S, Shafiq J, Wong K, Thompson S, Hanna T, et al. Review of optimal radiotherapy utilisation rates. Collab Cancer Outcomes Res Eval. 2013;(March):6; 574.
  - Azevedo e Silva G, Jardim BC, Ferreira V de M, Junger WL, Girianelli VR. Mortalidade por câncer nas capitais e no interior do Brasil: uma análise de quatro décadas. Rev Saude Publica. 2020;54:126.
- Speaker:** B. Jardim  
**Theme:** 3. Healthcare systems & policies  
**Topic:** Access to care
- 001256 | Accelerating impacts in cancer outcomes: Insights from the International Cancer Benchmarking Partnership (ICBP)**
- Nweje M. \* (1); Harrison S. (2); Hall H. (3)  
(1) Cancer Research UK, London, United Kingdom; (2) International Cancer Benchmarking Partnership, Cancer Research UK, London, United Kingdom; (3) International Cancer Benchmarking Partnership Cancer Research UK, London, United Kingdom
- Background and context:** The ICBP is an innovative collaboration uniting clinical, policy, research, and data experts.
- Aim:** The ICBP convenes experts from seven high-income countries to assess disparities in cancer survival, incidence, mortality, and stage distribution while identifying factors influencing these variations.
- Strategy/tactics:** The ICBP is achieving its aim by undertaking quality research, translating evidence into insights, building partnerships and networks with stakeholders, and disseminating insights through various knowledge tools to influence change and positively impact cancer outcomes. The epidemiological benchmark, which includes survival, incidence, mortality, and stage, is the core of ICBP's research. Insights from stakeholder consultations and the broader research landscape inform the selection of cancer sites and additional exploratory questions. Research is conducted by externally commissioned research groups and an in-house ICBP research team.
- Programme/Policy:** Countries are selected based on four key eligibility criteria to ensure comparability. The partnership's governance mechanism includes a programme management review group and a programme board comprising senior clinicians, researchers, and representatives of governments or cancer agencies. Together, they provide strategic direction to the partnership, and a programme management team hosted by Cancer Research UK provides day-to-day coordination.
- Process:** Over the past 15 years, ICBP has conducted two research phases and a transition phase spanning eight countries. Across these phases, 11 research modules have assessed factors that may be responsible for observed international variation in survival for nine cancer sites: breast, colon, rectum, lung, ovary, oesophagus, liver, pancreas, and stomach.
- Outcomes:** ICBP has published 71 peer-reviewed articles and, working with experts, positively influenced cancer strategies, clinical practice, and data quality. Exemplars include ICBP's evidence; informing an ovarian cancer audit in Canada, including emergency presentation metrics in Northern Ireland, and supporting the rationale behind Denmark's 3-legged strategy for accelerated cancer referral pathways.

**What was learned:** ICBP's collaborative model offers valuable insights into leveraging cross-border partnerships to accelerate progress in improving cancer outcomes. Cross-country partnerships can drive meaningful change by facilitating knowledge exchange, sharing best practices, and fostering stakeholder engagement. Through strategic collaborations, ICBP exemplifies the transformative potential of international partnerships in addressing disparities and improving cancer outcomes.

Speaker: M. Nweje

Theme: 3. Healthcare systems & policies

Topic: Improving international healthcare systems for early cancer diagnosis and survival

#### 001273 | Strengthening comprehensive cancer program and monitoring in Indonesia by tele-mentoring ECHO

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(1) Dharmais Cancer Hospital, West Jakarta, Indonesia; (2) Ministry of Health of Republic of Indonesia, Jakarta, Indonesia; (3) ECHO India, New Delhi, India

**Background and context:** Dharmais Cancer Hospital, National Cancer Center as a Mentoring for National Cancer Services Networking must implement the same standards of cancer care for all the primary health care and hospitals stratification level. As an archipelagic country with 6.000 inhabited of the 17.508 islands, the distribution of people and health facilities is varied. In Indonesia, hospitals for cancer services are stratified by their location and abilities. There are 12 Regional Hospitals, 38 Main hospitals and 514 middle hospitals. The tele-mentoring ECHO is one of the solutions to reach out more people from more area at the same time and get the best practise information or experiences from the same expert.

**Aim:** Tele-mentoring ECHO is one of the platforms that help Dharmais to provide and to monitor the best cancer care or management for all area in Indonesia.

**Strategy/tactics:** Learn the need and situation of the target area, create the programs that suitable for the needed, Involve community leaders or related professions, Involve Ministry of Health, hospitals or health services according to their strata, Involve primary health care as the first hand that catch up the cancer suspicion.

**Programme/Policy:** Difficult case discussion by multidisciplinary team. Post-training monitoring and evaluation programs (oncology nurses, GP who screen for breast cancer with ultrasound). Breast self-examination activity program by health cadres initiated by the Indonesian Breast Cancer Foundation. Cancer service management capability improvement.

**Process:** Develop concept note, evaluation tools and curriculum. Then invite the participant to join i-ECHO where help us to monitor and evaluate the programs.

**Outcomes:** There are the increase of programs and participants in Indonesia. From the evaluation form we also see the increase of

knowledge. The proportion of satisfaction of participants also increased. This program has been running also by M. Djamil Hospital, Hasan Sadikin Hospital, Sardjito Hospital and Prof. Kandou Hospital.

**What was learned:** From the rural hospital or the Primary Health Care presentation, we learn more of their need and help us to communicate these problems to the Ministry of Health.

Speaker: D. T. Sinulingga

Theme: 3. Healthcare systems & policies

Topic: Building capacity in monitoring & evaluation.

#### 001279 | Childhood malignancy among Syrian population “refugees” in Jordan, 2015–2019

Nimri O. \* (1)

(1) Jordan Center for Disease Control, Amman, Jordan

**Background:** Childhood malignancy is a substantial global health concern. The Syrian crisis has exacerbated the vulnerabilities of children, and cancer. Among the many challenges faced by Syrian refugees, access to adequate healthcare services is paramount, particularly for vulnerable populations such as children, which is a significant burden on affected individuals and healthcare systems.

**Aim:** This paper presents an epidemiological analysis of paediatric cancers among Syrian population and refugees in Jordan over the period 2015–2019, utilizing Jordan cancer registry data, that can be very helpful for developing healthcare policies, targeted interventions and improving healthcare delivery.

**Methods:** This retrospective study utilized data obtained from the population based Jordanian Cancer Registry (JCR) to analyses paediatric cancers among Syrian in Jordan from 2015 to 2019 data. The JCR collects information on cancer diagnoses and treated from hospitals and healthcare facilities across the country. Cases with Syrian nationality and aged 0–15 years at the time of diagnosis were included in this analysis. Data on demographic characteristics, cancer types, and tumour characteristics were extracted and analysed.

**Results:** The analysis included a total of 12,029 non-Jordanians, out of that 1383(11.5%) are Syrians. Paediatric cancer cases were 157 (Male 102(65%), Females 55(35%) among Syrian in Jordan. 44 (28%) cases had known address, 113 (72%) cases are mostly a refugee inhabitant. The median age at diagnosis was 6 years, with 19% of cases being 1 year and below (mode). Most common cancers noticed were Leukaemia (26.2%), Lymphoma (14.6%), CNS & Brain (12.7%), Bones (10.2%), Soft-tissue (7.0%). A 39.5% of cases were advanced stages, and 22.9% unknown while the rest were diagnosed in early stages.

**Conclusion:** The results of this study highlight the epidemiology and burden of paediatric cancers among Syrian “refugees” in Jordan and underscore the importance of addressing the healthcare providers and policymakers as well as the NGOs to allocate resources and targeted interventions to meet the needs of this vulnerable population. The importance of a continued surveillance and monitoring of cancer trends.

**References.**

Dr. Nimri is the Ex.Director,Cancer prevention Dept and PI-Head Cancer Registry in the Ministry of Health. Currently working in the JCDC,Jordan Center of Disease Control. Dr. Nimri is the President of the Jordan Cancer Society too.

Speaker: O. Nimri

Theme: 3. Healthcare systems & policies

Topic: Cancer registries and their impact on cancer control planning and evaluation

**001330 | Addressing disparities: Geographic barriers to cancer care access in rural British Columbia, Canada**

Kulbak O. \* (1); Holmes E. (1); Torchetti T. (1); Burnett L. (2)

(1) Canadian Cancer Society, Toronto, Canada; (2) Canadian Cancer Society, Hamilton, Canada

**Background and context:** People with cancer and their caregivers who need to travel for treatment or medical appointments often incur significant out-of-pocket costs. The burden of travelling can negatively impact how early someone is diagnosed, what treatment they decide on, their finances and quality of life.

**Aim:** In 2023, the Canadian Cancer Society (CCS) created the Cancer Travel and Accommodations Services (CTAAS) program with added funding from the provincial government of British Columbia (BC). As the expansion progressed, there was a need to estimate how many people within the province live a significant distance away from a cancer centre and may need to travel for treatment. The aim was to inform the models and protocols for financial compensation for CTAAS.

**Strategy/tactics:** Population data from Statistics Canada for all 751 census subdivisions (CS) in BC was used to analyze the geographic distribution of cancer care services across the province and assess disparities in access based on distance from each CS to the nearest cancer centre.

**Programme/Policy:** Understanding the travel burden will help to alleviate travel expenses for people undergoing cancer treatment by providing targeted financial aid based on proximity to treatment centres.

**Process:** Using a mapping tool, we plotted each CS, noting their population count, and the cancer centres located in BC. Calculating distances in kilometres from each subdivision to the nearest cancer centre, we grouped each subdivision into seven strata based on distance in kilometres (km): 0–25 km, 25–50 km, 50–100 km, 100–200 km, 200–300 km, 300–400 km and 400+ km. Additionally, we determined the percentage of Registered or Treated Indians, the current database variable to identify First Nations people in Canada, within each stratum. Income distribution for each stratum was estimated using available income data from Statistics Canada.

**Outcomes:** Initial results showed that most of BC's population (69%) lives within 25 km of a cancer centre while 5% of BC's population lives 400+ km away from a cancer centre. We also found that among all of the strata, the largest proportion of First Nations people (11%)

live 400+ km away from a cancer centre. The highest earners were seen in the most urban areas and the most remote areas.

**What was learned:** People living in more remote parts of BC may need to drive substantial distances or fly to treatment. It is important that people living in rural areas can access cancer care without being financially burdened by transportation costs. Using this data, we were able to estimate how many people would benefit from the new transportation program. This model can be replicable for other jurisdictions attempting to estimate the travel burden of people with cancer.

Speaker: O. Kulbak

Theme: 3. Healthcare systems & policies

Topic: Access to care

**001454 | Childhood cancer survivorship care in LMIC—Bridging the gap with model PICASSO (Partnership in Cancer Survivorship Optimisation)**

Dhamankar V. \* (1); Phad P. (1); Revathi R. (1); Gawde B. (1);

Kurkure P. (1)

(1) Indian Cancer Society, Mumbai, India

**Background and context:** Cancer Survivorship models developed in high-income countries for long term follow up care are not always suitable for LMIC. Models developed by not-for-profit organizations in collaboration with health care providers have given the opportunity to scale up at a faster rate and improve the depth of services. Indian Cancer Society (ICS) is a not-for-profit organization. ICS has developed a holistic module for survivorship care based on collaboration of After Completion of therapy (ACT) clinic at Tata Memorial Hospital & UGAM- Childhood cancer survivors (CCS) support group at ICS.

**Aim:** Objective is to facilitate Pediatric Cancer Unit (PCU) to start ACT Clinic for holistic care of CCS and standardize the survivorship care in India.

**Strategy/tactics:** High Volume Pediatric cancer units are identified and approached through a survey. Interested units partner with ICS, MOU is signed with defined roles and responsibilities. Survivorship needs are assessed and channeled through various funding programs, advocated at various national & international platforms to create awareness.

**Programme/Policy:** Survivorship as an essential component of cancer control program.

**Process:** Identified partner Hospital provides the infrastructure for ACT clinic.ICS provides technical assistance to PCU &survivors. CCS (>2 years post treatment & disease free) are registered in ACT Clinic, Hospital paediatric oncologist monitors late effects and clinical psychologist assesses psychosocial concerns. Survivorship care plan (SCP) is outlined and therapeutic interventions for Medical & psychosocial issues are implemented. Psychosocial intervention includes psychological testing& counselling, career counselling, support group memberships. Financial support provided for education & vocational courses and late effects treatment.

**Outcomes:** 2901 CCS registered in 13 ACT clinics in India. Medical & psychosocial evaluation is done for all as per set guidelines. 395 received scholarships for education. 100/395 survivors have achieved educational milestones. 73 received financial aid for Late effects interventions such as Growth hormone replacement, hearing aid, dental issues Infertility, prosthesis revision, neurorehabilitation. Mobile App developed to connect with survivors community and share important information and advocacy.

**What was learned:** A comprehensive model through Hospital partnership with Not for Profit Organization can be replicated in LMICs where healthcare system is not geared to deliver survivorship care optimally. Research, clinical guidelines can emerge through this approach.

#### References.

Childhood cancer survivorship and late effects: The landscape in India in 2020, Pediatric Blood and cancer Volume 67, Issue 9 September 2020, Models of Care for Survivors of Childhood Cancer From Across the Globe: Advancing Survivorship Care in the Next Decade, J Clin Oncol. 2018 Jul 20;36(21):2223-2230.

Speaker: V. Dhamankar

Theme: 3. Healthcare systems & policies

Topic: Survivorship and rehabilitation

### Theme 4: Cancer treatment & palliative care

#### 000061 | Cancer therapy-related cardiac dysfunction (CTRCD) after radiation therapy for breast cancer: Results of the French BACCARAT study

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**Background:** Radiation therapy (RT) for breast cancer (BC) can result in a broad spectrum of cardiotoxicity including subtle cardiac dysfunction that can occur early after treatment. In 2022, the first European Society of Cardiology (ESC) guidelines in cardio-oncology defined asymptomatic cancer therapy-related cardiac dysfunction (CTRCD), combining both information on left ventricle ejection fraction (LVEF) and global longitudinal strain (GLS) decrease from baseline. This newly defined event has never been studied in a population of BC patients treated with RT.

**Aim:** To evaluate early to mid-term asymptomatic CTRCD occurrence and to analyze the association with radiation-induced cardiac exposure.

**Methods:** The prospective monocentric BACCARAT study included BC patients treated with RT without chemotherapy, aged 40–

75 years. Conventional and 2D Speckle tracking echocardiography was performed before RT and 6 and 24 months after RT. The present analysis included all patients with LVEF and GLS measurements available for the three-time points. Asymptomatic CTRCD, as defined in the latest ESC guidelines in cardio-oncology, combines information on LVEF and GLS decrease from baseline occurring either 6 or 24 months after RT. Whole heart, left ventricle (LV), coronary arteries doses, and dose-volume parameters were considered to evaluate the impact of cardiac exposure on CTRCD.

**Results:** The study included 72 BC (of 59 left-sided BC) patients with a mean age of  $58 \pm 8.2$  years. A total of 32 (44%) patients developed any grade CTRCD during follow-up: 22 (31%) developed early dysfunction, and 14 (19%) developed midterm dysfunction with or without previous early dysfunction only in left BC patients. The cardiac doses were generally higher among patients with CTRCD rather than non-CTRCD. Significant dose-response relationships were observed between the risk of CTRCD and cardiac exposure, in particular LV exposure (OR for V2 LV dose = 1.03 (1.00–1.06)  $p = 0.01$  and circumflex CX artery's mean dose OR = 2.44 (1.26–4.74)  $p = 0.008$ , D2 OR = 1.79 (1.13–2.85)  $p = 0.01$  and V2 OR = 1.02 (1.01–1.04)  $p = 0.01$ ). The results for the CX artery exposure were robust and significant after adjustment for classic cardiac risk factors and analyses according to the CTRCD grade; however, it did not remain significant for LV.

**Conclusion:** Our study suggests an association between specific cardiac structures and CTRCD.

2 years after breast cancer, RT using echocardiography, considering classic cardiac risk factors. However, given the limited number of patients, further research is needed to improve understanding the early mechanisms of radiation-induced CTRCD.

Speaker: M. K. F. Honaryar

Theme: 4. Cancer treatment & palliative care

Topic: Radiotherapy

#### 000178 | What is holding us back from integrating palliative care and oncology?

Bradley N. \* (1); McConnell T. (1); Blair, C. (1); O'Halloran, P. (1); Prue, G. (1); Lynn, F. (1); Wong, G. (2); Roberts, N. (3); Banks, E. (4); Reid J. (1)

(1) Queen's University Belfast, Belfast, United Kingdom; (2) University of Oxford, Oxford, United Kingdom; (3) Bodleian Library, Oxford, United Kingdom; (4) National Cancer Research Institute, London, United Kingdom

**Background:** Existing evidence demonstrates the benefits of integrated palliative care for people with cancer, for improved symptom burden, quality of life for patient and caregiver, and appropriate healthcare resource use. The integration of palliative care and oncology is recommended by international guidelines and has the potential to reduce suffering—however it is not yet common practice. There are many approaches to integration, but it is unclear what works, for

whom, and in what contexts, to achieve the best possible outcomes for patients, families, and healthcare systems.

**Aim:** To explain how and why integrated palliative care in oncology works, for whom, and in what contexts; and to develop guidance to optimise the implementation of integrated palliative care and oncology.

**Methods:** Realist synthesis is a theory-driven approach to understanding complex interventions or phenomena, through explaining the interactions between context and mechanisms in leading to outcomes. This method involves five iterative stages: (1) locating existing theories; (2) searching for evidence; (3) article selection; (4) extracting and organising data; (5) synthesising evidence and drawing conclusions. We are collaborating at each stage with an international stakeholder group, comprising clinicians, nurses, allied health professionals, health service management, and patient representatives. Stakeholder engagement ensures that implications are relevant to current practice and our findings are communicated in ways that meet the needs of key audiences.

**Results:** There are benefits to integrating palliative care but challenges to implementing this in practice, include: misunderstandings of palliative care, poor collaboration between disciplines, ambiguous responsibilities for palliative care provision, the number of relevant care settings to coordinate, and unmet informational needs of patients and caregivers. Our findings present strategies to overcome these challenges and achieve efficient service delivery.

**Conclusion:** Through the synthesis of international evidence, this project contributes clarity on how integrated palliative care and cancer care can be achieved in practice. This is a vital first step in a programme of research, which is to find and test solutions to this enduring problem. Interventions towards integration should be tailored to the context in which they are delivered, recognising the variation in healthcare settings, infrastructure, and staff competencies.

Speaker: N. Bradley

Theme: 4. Cancer treatment & palliative care

Topic: Palliative care's role in cancer control

#### 000189 | Prevalence and predisposing factors and management of Head and Neck Lymphedema in patients following treatment for Head and Neck Cancer in India (HeNLy-1)

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(1) Tata Memorial Hospital, Mumbai, India

**Background:** Patients who have head and neck cancer often receive multimodality cancer treatment related to locally advanced disease which increases the risk of late toxicities/effects. One such commonly neglected late effect is head and neck lymphedema (HNL) which may have an impact on the patient's quality of life. This may be external (e.g., face and neck) and/or internal (e.g., larynx and pharynx). There is a lack of data regarding head and neck lymphedema (HNL) from India.

**Aim:** To assess the prevalence of secondary lymphedema after treatment for head and neck cancer and identify its

predisposing factors along with the impact of HNL on the patient's quality of life.

**Methods:** This prospective study was approved by our institute's ethics committee and was registered with the Clinical Trials Registry of India (CTRI). All patients 18 years and above who were disease-free at the time of assessment, at least 6 months from treatment completion and had received some part of their at our institute were included in the study. Patients with recurrence/second primary and unwillingness to participate were excluded. The study methodology is given in the figure below. The severity of external lymphedema was rated using the MDACC HNL rating system. The internal lymphedema severity was rated based on Patterson's scale. Subsequently, the patients were served the University of Washington quality of life questionnaire. Patients with HNL 1b and above were offered Complete Decongestive Therapy.

**Results:** A total of 831 patients were screened out of which 421 were enrolled for the study. The median age of the patients was 47 years. The majority were male patients ( $n = 368.87\%$ ). Most of these patients had used tobacco ( $n = 326.77\%$ ). The oral cavity was the most common subsite ( $n = 333.79\%$ ) and the majority had advanced disease ( $n = 262.62\%$ ). The median duration from treatment completion in the cohort was 19 months. Most of the patients had received multimodality treatment ( $n = 290.68\%$ ). Overall, HN Lymphedema was present in 190 patients (45%), either internal or external lymphedema or both. Most of the patients had only 1a type of HNL. Swallowing was reported as the most significant problem in 58 (14%) patients followed by chewing ( $n = 34.8.1\%$ ), Saliva (related issues) ( $n = 34.8.1\%$ ), mood-related ( $n = 34.8.1\%$ ) as in the questionaire. Patients who had oral cavity primary, advanced stage disease and received multimodality treatment were more prone to have HNL and QoL related issues.

**Conclusion:** In our cohort of patients, 45% of the patients had HNL. Swallowing issues followed by chewing and xerostomia were commonly reported. Patients with internal lymphedema reported these issues more often.

#### References.

Deng J., Murphy B.A., Dietrich M.S. Impact of secondary lymphedema after head and neck cancer treatment on symptoms, functional status, and quality of life. Head Neck. 2013; 35:1026–1035. Deng J., Ridner S.H., Dietrich M.S. Prevalence of secondary lymphedema in patients with head and neck cancer. J Pain Symptom Manage. 2012; 43:244–252.

Speaker: S. Thiagarajan

Theme: 4. Cancer treatment & palliative care

Topic: Survivorship and rehabilitation

#### 000221 | Adverse association of allostatic load with overall survival in men with newly diagnosed metastatic prostate cancer

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**Background:** Allostatic load (AL), a physiologic measure of chronic stress (trauma, abuse, environment) and daily experiences (circadian disruption, lack of exercise, smoking, alcohol consumption, unhealthy diet), is derived using a composite score of cardiovascular, renal, endocrine, and immune biomarkers. Adverse social determinants of health are associated with higher AL which may contribute to cancer initiation and progression.<sup>1</sup>

**Aim:** (1) To examine the association of AL on overall survival (OS) in a novel population, and (2) to identify potential therapeutic targets to improve overall survival (OS) in men with metastatic prostate cancer (MPC).

**Methods:** We conducted a retrospective cohort study of men with newly diagnosed MPC evaluated at our cancer center (2015–2022), collecting demographic and clinical data from the electronic health record. AL was calculated applying the criterion and scoring of Obeng-Gyasi et al.<sup>1</sup> (range 0–9 points) using laboratory values ±60 days of initial MPC diagnosis. Patients were followed until death or censored at last known follow-up date. Data collection concluded in December 2024 for these analyses. The Kaplan-Meier method was used estimate OS and time until death for those with ‘High’ versus ‘Low’ AL, with high defined as AL above the median of 3 points. Cox proportional hazards regression analyses evaluated the association between AL and OS adjusting for covariates.

**Results:** A diverse cohort of 126 men were diagnosed with MPC during this time (56% non-Hispanic White, 30% non-Hispanic Black, and 12% Hispanic). The average man was 70 ( $\pm 9.8$ ) years of age with a high prevalence of co-morbid conditions (39% obesity, 63% hypertension, 25% diabetes, and 59% tobacco use.) Blood glucose and serum albumin were the most frequent contributors to AL. Higher AL was associated with lower OS (Figure 1, log-rank  $p$ -value = 0.0371; unadjusted HR (95% CI): 1.78 (1.03, 3.07]). In the multivariable model, AL remained significantly associated with increased hazard of death [HR (95% CI): 1.25 (1.02, 1.53) per AL point increase,  $p$  = 0.03], adjusting for age, race, smoking status, payer, and treatment.

**Conclusion:** Our findings support the importance of assessing AL in men with newly diagnosed MPC and optimizing improved management of chronic stressors, specifically hyperglycemia and hypoalbuminemia. Future studies are needed to corroborate these findings and to explore if AL has implications for treatment response in a globally representative cohort of men with MPC.

#### References

- Obeng-Gyasi S, Li Y, Carson WE, et al. Association of Allostatic Load With Overall Mortality Among Patients With Metastatic Non-Small Cell Lung Cancer. *JAMA Netw Open*. Jul 1 2022;5(7):e2221626. doi:[10.1001/jamanetworkopen.2022.21626](https://doi.org/10.1001/jamanetworkopen.2022.21626)

Speaker: P. Sheean

Theme: 4. Cancer treatment & palliative care

Topic: Supportive care

000244 | Establishment of hybrid brachytherapy in cervical cancer at Atomic Energy Cancer Hospital NORI Islamabad with the help of IAEA through inter-regional project INT 6062–A success story

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**Background and context:** Cervical Cancer is highly radiosensitive and radiation dose escalation has been proven to improve efficacy in terms of response as well as disease free survival. Safe dose escalation is possible only with brachytherapy as far as cancer of the cervix is concerned due to its unique anatomy. Brachytherapy in cervical cancer has undergone tremendous advancement.

Pakistan in general, and AECH NORI in particular, is not lagging behind the developed world in acquiring new technology. The hospital started with LDR brachytherapy in 1983 and switched to HDR VARISOURCE using Iridium 192 in 1996. Image based brachytherapy in gynecological cancers got started in 2018 with the installation of HDR Flexitron using Cobalt 60 source. Though doses to volumes and OARs improved much with IGBT yet still we were using only triple channel technique and at times we had to compromise on doses either to volumes or to OARs.

**Aim:** To improve treatment outcome in patients with locally advanced cervical cancer using hybrid brachytherapy.

**Strategy/tactics:** Most of our patients present in locally advanced stages when it becomes difficult to encompass entire tumor within the prescribed dose level using tandem and ovoids only.

**Programme/Policy:** Use of Venezia applicators for hybrid brachytherapy.

**Process:** This was made possible by unconditional support from IAEA through TCP INT 6062 under which we were provided not only with Venezia applicators but also onsite training by an expert mission from Vienna International Hospital. WE received the applicators in December 2021 and the expert mission in June 2022. Since then we have treated almost 45 patients with hybrid brachytherapy in 90 implants and almost 180 fractions besides triple channel and single channel procedures.

**Outcomes:** We can easily achieve EQD2D90 to HRCTV more than 90 GY with very low doses to rectum and bladder. Patients are achieving complete clinical and radiological responses that were otherwise difficult to achieve in locally advanced cervical cancer.

**What was learned:** MRI based IGBT in cervical cancer has brought breakthrough in the management of cervical cancer and more complete responses can be achieved that were otherwise difficult to be achieved with triple channel brachotherapy.

Speaker: H. Mahmood

Theme: 4. Cancer treatment & palliative care

Topic: Radiotherapy

**000374 | A randomized controlled trial of a comprehensive lifestyle program (CLP) for women with breast cancer**

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**Background:** Excess visceral adipose tissue (VAT), weight, unhealthy diet, and low levels of physical activity as well as excessive sedentary behavior are all associated with worse clinical outcomes for women with breast cancer (BCa). Stress, stress management, and mindfulness, as well as psychosocial support play an important role in supporting or hindering the modification of cancer risk behaviors (diet, exercise, etc.) and have a direct effect on the tumor microenvironment. Yet, most lifestyle intervention research focuses mainly on modifying diet and exercise with less attention given to helping participants manage the myriad of complex psychosocial barriers that influence long-term sustainability of lifestyle changes.

**Aim:** We examined a CLP for women with BCa to improve multiple lifestyle factors linked with prognosis.

**Methods:** Women with stage II/III BCa undergoing XRT were randomized to CLP or usual care (UC). Women in CLP had two sessions a week each of diet, exercise, and yoga counseling (YC) and one session a week of behavioral counseling for 6 weeks, followed by weekly behavioral counseling for 6 months. Data were collected at baseline and 3, 6, and 12 months. Measures included body composition from DEXA (percent body fat (BF), VAT, and fat mass (FM)), waist circumference, fitness testing, fiber consumption, and multiple PROs. Outcomes from 6-months are reported.

**Results:** 100 women were randomized to CLP (50) or UC (50); mean age 51; 22% Black and 11% Hispanic. Adherence to the intensive 6-week portion of the intervention was high with 85% only missing three sessions or less out of 42 sessions. Change in body composition revealed significant reductions in CLP versus UC: BF: -1.1 versus +1.6,  $p < 0.001$ ; VAT: -3.5 versus +13.2,  $p = 0.035$ ; FM: -0.5 versus +0.9,  $p = 0.002$ ; waist: -1.9 versus +1.4,  $p < 0.001$ . Fitness testing revealed significant improvements in CLP vs. UC for upper and lower body strength, VO<sub>2</sub> Max (3.5 vs. 1.4,  $p = 0.034$ ), and Godin (38.4 vs. 11.4,  $p = 0.038$ ). Dietary recalls revealed increased fiber consumption in CLP versus UC (+4.4 vs. -2.8,  $p < 0.001$ ). There were statistically and clinically significant improvements in QOL scores for the CLP group and little or no changes for UC. There were also significant improvements in mindfulness only for the women in CLP. Qualitative data from exit interviews will also be presented, in particular the importance of mindfulness and the YC component.

**Conclusion:** CLP resulted in improvements in body composition, fitness, fiber consumption, and multiple PROs.

Speaker: L. Cohen

Theme: 4. Cancer treatment & palliative care

Topic: Cancer and lifestyle

**000424 | Implementation and early outcomes of a treatment access program for patients with chronic lymphocytic leukemia in Nepal and Armenia**

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**Background and context:** Chronic lymphocytic leukemia (CLL) is the most common leukemia in adults, accounting for about one third of new cases of leukemia worldwide<sup>1</sup>. Access to novel therapies have improved the treatment landscape for CLL, but these remain limited for patients in low- and middle-income countries (LMICs). The Max Foundation (Max) in partnership with a biotech donor, global key opinion leaders, and local health care providers (HCPs), launched a treatment access program to bridge this gap and improve outcomes for patients with CLL in LMICs.

**Aim:** To provide zanubrutinib, a second-generation BTK inhibitor (BTKi), at no cost to patients with CLL in certain LMICs, starting in Nepal and Armenia.

**Strategy/tactics:** Max is a nonprofit dedicated to accelerating health equity by delivering medication, technology, and supportive services to patients worldwide. The four pillars of Max's innovative treatment access model are the treating partner physicians, a local team of Max advocates, treatment made available through collaboration with drug and diagnostics companies, and an international supply chain.

**Programme/Policy:** The program provides treatment access to underserved patients and supports capacity building efforts by leveraging partnerships with local HCPs and global professional organizations.

**Process:** Implementation activities included: (1) identification and assessment of diagnostic and treatment capacity in eligible countries and institutions; (2) forecasting of patient numbers; (3) establishment of supply chain pathways; (4) training and education for the implementing team on CLL, pharmacovigilance, and clinical management in partnership with the iwCLL; and (5) development of Max's Patient Access Tracking System (PATS) linking implementing partners and key data points in real time.

**Outcomes:** Between December 2023 and January 2024, 30 patients were enrolled in the program; 19 from Armenia and 11 from Nepal. Fifty percent ( $n = 15$ ) of patients were treatment-naïve and 43% ( $n = 13$ ) of patients were women. The median age for CLL diagnosis was 63 years. The average time from diagnosis to approval in the program was 2.4 years.

**What was learned:** Implementation of a treatment access program in LMICs requires vision and commitment from multiple stakeholders. The rapid uptake of the program demonstrates the significant need for novel therapies. The implementation and early outcomes of this program demonstrate a scalable model for addressing global healthcare disparities for CLL.

**References**

- I. Yao Y, et al. Biomed Eng Online. 2022;21(1):4.

Speaker: A. Yost

Theme: 4. Cancer treatment & palliative care

Topic: Equity and cancer

## 000502 | Navigating the landscape of cancer care in Nepal: Challenges and the path forward

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**Background and context:** Cancer presents a growing concern in Nepal, with a sharp increase in new cases. In 2020 alone, there were 20,508 recorded cases, projected to exceed 36,900 by 2025. However, Nepal's healthcare infrastructure struggles to cope with this rising threat, lacking sufficient cancer centers, equipment, and specialized professionals in radiation oncology. To address this, focused academic and training programs are crucial, as investing in human resources yields long-term benefits. Additionally, the absence of a national cancer control program hampers coordinated efforts for prevention, detection, and treatment, exacerbated by stigma and delayed diagnosis. International collaborations, such as those with the WHO and the IAEA, have made strides in improving cancer care. Despite challenges like long waiting periods for treatment, initiatives like the IAEA's Technical Cooperation project have enhanced diagnostic and radiation therapy services in Nepal. Through this project, public hospitals now offer international standard radiation therapy treatment services.

**Aim:** The aim of the article is to examine the current status, challenges, and issues faced by Nepal's healthcare system in the treatment of cancer. Additionally, it aims to propose strategies and solutions to address these challenges and improve cancer care in the country.

**Strategy/tactics:** To tackle cancer treatment challenges in Nepal, a comprehensive strategy is essential. It should prioritize resource mobilization, healthcare professional training, early detection campaigns, technology access, traditional healing integration, and international collaboration. These efforts aim to enhance cancer care and patient outcomes nationwide.

**Programme/Policy:** There are many programs mainly focused on Cancer but Yet to National Cancer Policy.

**Process:** 1. Assessment and identification of challenges. 2. Development of strategies. 3. Implementation plans. 4. Monitoring and evaluation. 5. Collaborative efforts.

**Outcomes:** Implementing the proposed cancer treatment strategy in Nepal would greatly improve patient care and outcomes nationwide. Efficient resource allocation, training, early detection campaigns, access to modern technology, and integrating traditional healing practices would all play key roles. Strengthening collaborations among stakeholders would lead to sustainable outcomes, reducing the burden of cancer and enhancing quality of life for patients and families.

**What was learned:** The rising burden of cancer in Nepal demands immediate attention and improved healthcare services. Resource limitations, such as shortages of facilities and specialized professionals,

present significant challenges to effective cancer care. Investing in training, particularly in radiation oncology, is crucial to address these challenges. Addressing the stigma through public awareness campaigns is vital for early intervention. Equitable access to modern technology, especially in remote areas, is imperative. Integrating traditional healing practices with modern oncology can provide holistic care. Collaboration among stakeholders is essential for maximizing resources and improving cancer care services and outcomes.

### References.

1. Adhikari, K.P., Jha, L.N. and Montenegro, P.G. 2012. Status of Radiation Protection at different Hospitals in Nepal. *J. Med Phys (Pub Med India)* 37: 240–244.
  2. Ferlay J, Ervik M, Lam F, Laversanne M, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2024). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: <https://gco.iarc.who.int/today>, accessed [28 MArch,2024].
  3. Final Report on "Present Status of Nuclear Materials used in Nepal." Ministry of Environment, Science & Technology, June 2006.
  4. Final Report on finding out current status of X-ray being used in medical field in Kathmandu Valley, Ministry of Science & Technology, 2017.
  5. IAEA. Human Health Series No.14, Planning National Radiotherapy Services: A Practical Tool, 2010.
  6. National census, 2021 National Statistical Office.
  7. Report from Hospital Based National Cancer Registry, B.P. Koirala Memorial Cancer Hospital, Bharatpur.
  8. Rosenblatt E, Meghzifene A, Belyakov O, Abdel-Wahab M. Relevance of particle therapy to developing countries. *Int J Radiat Oncol Biol Phys.* 2016;95(1):25–9.
  9. Staffing in radiotherapy: an activity based approach. IAEA Human Health Reports (CD-ROM) No. 13. Vienna: International Atomic Energy Agency; 2015.
  10. Status of Radioisotopes in Nepal—A Survey for the Preparation of Inventory, Ministry of Science & Technology, 2010.
  11. Setting up a radiotherapy programme: clinical, medical physics, radiation protection and safety aspects. Vienna: International Atomic Energy Agency; 2008.
  12. Technical specifications of radiotherapy equipment for cancer treatment. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.
- Speaker: K. P. Adhikari  
 Theme: 4. Cancer treatment & palliative care  
 Topic: Radiotherapy

## 000534 | The safari concept: An African framework on end of life care

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**Background:** Effective communication is essential for the optimal delivery of healthcare services. In developing countries, family members typically shoulder a great deal of the burden of caring for patients. Families serve as caregivers, provide food and transport, and pay bills. The contributions of family members at end-of-life are thus crucial to the plan of care in low- and middle-income countries. In an effort to create a formal model of end-of-life care that is suitable to the Rwandan context, we must begin by understanding the suffering of families and the community at the end of life.

**Aim:** To understand the language of suffering expressed by patients' families to optimize communication at end-of-life care.

**Methods:** We observed and described the behavior of more than 700 meetings of healthcare staff with family members and patient caregivers in hospitals, hospices, and at home.

**Results:** We developed a framework called "Safari," which means "Journey" in Swahili, based on a Rwandan social-cultural approach to decode the language of suffering from families and caregivers during family meetings. Twelve animal archetypes were used to describe families' suffering behaviors, language, and expectations. The framework has helped healthcare providers improve their understanding of and communication with families.

**Conclusion:** The Safari concept is a Rwandan homegrown solution to increase effective communication between healthcare providers, families, and caregivers. In the context of communities where traditional practices are still relevant, the modern approach in palliative care should embrace sociocultural values to optimize communication.

Speaker: C. Ntizimira

Theme: 4. Cancer treatment & palliative care

Topic: Patient and family experience

- Studying learner (HCP) needs and preferences.
- Equity focus (frontline/rural HCPs).
- Hospital partnerships for content curation, course development, delivery.
- Demand creation via evidence-based digital marketing.
- Community engagement: learner/faculty, peer-to-peer.
- Detailed real-time analytics.

**Programme/Policy:** The program was part of a 15-month initiative supported by Bristol Myers Squibb Corporate Giving that also addressed prostate cancer and trained 14,692 HCPs in 12 African countries.

**Process:** Key process factors were the MLH platform, partners and promotion. MLH analytics enabled detailed understanding of outcomes. Partner institution ensured quality relevant content. Web, email and social media reached HCPs who had never benefited from cancer CE.

**Outcomes:** Urban and rural specialists, GPs, and pharmacists participated. 99% reported courses improved their knowledge; 98% stated faculty were "experts who presented their subjects successfully."

A survey 1 month after completion found learners were using course material in their practice (response rates were low). HCPs most strongly agreed the series improved skills in: identifying at-risk patients; Diagnostic guidelines; Treatment; Patient management.

**What was learned:** Evidence-based, context-adapted CE can be delivered online cost-effectively (US\$11 per HCP trained) with high satisfaction.

Speaker: B. Chuma

Theme: 4. Cancer treatment & palliative care

Topic: Education and training initiatives

#### 000678 | Building Africa's cancer care workforce: Innovative digital-forward program increases equitable access to education and peer communities among specialists and frontline health providers

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**Background and context:** To enable African healthcare providers (HCPs) to detect breast cancers early and treat them using effective therapies, massive scale-up of continuing education (CE) is vital, and must equitably reach HCPs in diverse settings.

**Aim:** An innovative Africa-wide training initiative used digital technology, hospital experts, and region-specific promotion to train 8945 specialist and frontline HCPs to deliver breast cancer detection and care that is timely, high quality, and close to patients.

**Strategy/tactics:** Teams delivered the program using Medical Learning Hub (MLH), cloud-based software that lets HCPs search and enroll at no cost. 28 breast cancer workshops were delivered and recorded (24 online, 4 hybrid).

Key strategies:

#### 001034 | Long term outcome of sustainable financial support through Indian cancer society-cancer cure fund (ICS-CCF) for treatment of underprivileged cancer patients

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**Background:** Lack of finances for treatment of cancer is a major hindrance for improving outcomes at a national level.

**Aim:** In the year 2011, HDFC Mutual Fund in collaboration with Indian Cancer Society launched a unique scheme where investors donated the dividends for timely curative intent treatment of underprivileged patients with cancer from 16 hospitals across India.

**Methods:** An oncological cut off of 70% survival for paediatric and 50% survival for adult at 5 years and compliance to national guidelines were criteria for funding and ascertained after due diligence of every application by experts. Regular telephonic follow up was done to ensure oncological status.

**Results:** From 2011 to 2019, out of the 6821 patients who received 13.5 million USD as financial aid, 1991(29%) were ≤15 years. Majority were hematolymphoid malignancies 1556/1991(78%) of which leukaemias were 1281/1556(82%) and lymphomas 275/1556(18%). The solid tumors were 435/1991(22%) of which 259/435(60%) were sarcomas, 142/435(33%) were non-CNS solid tumours and 34/435(8%) were CNS solid tumors.

Of the 4830/6821 (71%) patients who were >15 years, majority had solid tumors 2767/4830 (57%) of which the most common diagnoses was carcinoma breast 1198/2767 (43%) followed by musculoskeletal tumors 390/2767 (14%) and head and neck cancers 353/2767 (13%). Hemato-lymphoid malignancies were 2063/4830 (43%) of which leukaemias were 1194/2063 (58%) and lymphomas 778/2063 (38%). Survival status of 940/6821 (14%) patients could not be ascertained due to lack of follow up details and this proportion varied between different institutes (3%–30%).

At a median follow up of 7 years, and after excluding the lost to follow up patients, for ≤15 years 1025/1679 (61%) are alive at 5 years and 654/1679(39%) were dead within 5 years. For >15 years, 2502/4202 (60%) are alive at 5 years and 1700/4202 (40%) were dead within 5 years of sanction of funds. The outcomes did not differ between the age groups.

**Conclusion:** Though ICS-CCF has significantly impacted the lives of patients with cancer and the outcomes are optimal. Adopting a more objective way of triaging of cases for funding, incorporation of holistic support and better follow-up strategies along with late effect and survivorship support has the potential to further improve the outcomes.

Speaker: A. Rawat

Theme: 4. Cancer treatment & palliative care

Topic: Cancer control planning in low- and middle-income countries

#### 001094 | Mapping palliative care integration within indonesia's primary healthcare system: A comprehensive analysis and recommendation framework

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**Background:** Indonesia, as the fourth most populated country globally, faces a notable rise in cancer cases, with approximately 70% diagnosed at advanced stages necessitating palliative care (PC) integrated in their care. Despite the introduction of PC in the country, its

provision has been constrained, unevenly distributed, and are predominantly centered in hospital settings, limiting access for many individuals in need.

**Aim:** This study sought to provide a comprehensive analysis of PC development in the country and develop recommendation framework with a specific focus on its implementation within community and primary healthcare settings in Indonesia.

**Methods:** In collaboration with the Ministry of Health of Indonesia and the World Health Organization Indonesia, we conducted a mixed-method study. This included: (1) a benchmarking study involving literature reviews of published studies on strategies of PC integration, along with qualitative interviews of global PC experts; (2) a situational analysis through a nation-wide survey of primary healthcare centers (PHCs) and qualitative studies of various stakeholders; (3) consultative meetings with program implementers, executive policy makers and civil society organizations' (CSOs) leaders to collaboratively draft recommendations followed with an advocacy meeting with the Minister of Health. We employed stratified random sampling of PHCs for the survey and purposive sampling for the qualitative study.

**Results:** One hundred thirty-three published studies were analyzed, 1124 PHCs were surveyed, and 14 global PC experts as well as 134 local participants were interviewed including patients, caregivers, CSO representatives, policymakers, service providers, philanthropists, private sector representatives, and past participants of palliative care training programs. Additionally, 160 program implementers, and 41 executive policy makers and CSO leaders were engaged in consultative meetings. In reference to the Conceptual Model of Palliative Care Development, PC in Indonesia has not been integrated into the national and local health care system. Several barriers for integration were identified in the domain of policy, education and training, research, and access to opioid. An enormous potential of the community and civil society involvement were untapped. Furthermore, PC models in PHCs and a national roadmap strategy were developed based on the identified needs to integrate palliative care into the national health policy and education program, contextualize it within local contexts, leverage existing resources, improve collaboration with communities and social capital, and pilot across various levels and stakeholders.

**Conclusion:** It is an urgent call to incorporate PC to the recent Health Transformation policy of Indonesia.

Speaker: T. B. M. Permata

Theme: 4. Cancer treatment & palliative care

Topic: Health systems and palliative care/pain relief

#### 001127 | Assessment of patient preferences, barriers and strategies for Implementing electronic patient reported outcomes (ePRO) collection in Zambia

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**Background:** Assessing electronic patient-reported outcomes (ePROs) during systemic cancer therapy, followed by provider intervention to address worsening symptoms, has been associated with fewer treatment interruptions, better quality of life, and improved survival. In Zambia, cervical cancer is the most common and fatal cancer among women. Using mobile technology to monitor ePROs during standard-care chemoradiation may improve outcomes for Zambian cervical cancer patients. However, it is unknown whether ePRO interventions can improve patient outcomes in low- and middle-income countries (LMICs).

**Aim:** We conducted a patient needs assessment with Zambian cervical cancer patients to identify preferences, barriers and strategies for implementing ePRO collection.

**Methods:** Cervical cancer patients ( $n = 177$ ) at the Cancer Diseases Hospital (CDH) in Lusaka, Zambia, completed a needs assessment survey regarding mobile technology use and ePRO preferences. The study was approved by CDH and MD Anderson IRBs.

**Results:** Mean age was 50.9 years (range, 29–78, SD 10.2), 46% resided in rural areas, 44% were diagnosed with later stage (III/IV) cervical cancer, and 55% were HIV-positive. Most had completed only primary school (69%) or no school (14%), 51% had no or limited ability to read. Most owned a mobile phone (92%) or used a phone that belonged to another person (7%). Fewer (26%) owned a smartphone or connected to the internet by phone (28%). Having internet connectivity via phone was associated with younger age, urban residence, higher education and literacy levels, and higher income. Most (98%) were willing to self-report symptoms via phone, with 97% preferring to do so via a phone call and fewer via text message (41%) or mobile app (17%).

**Conclusion:** Nearly all patients owned or had access to mobile phones. Fewer patients had the ability to connect to the internet via mobile phone which may be a requirement implementing mobile symptom assessment applications (apps). Regardless, nearly all indicated a willingness to self-report cancer-related symptoms via phone. Our results support the feasibility and acceptability of implementing ePRO collection and provide contextual data to guide implementation, including sociodemographic factors, literacy, low internet use, and ePRO reporting preferences (i.e., calls vs. text).

Speaker: S. Peterson

Theme: 4. Cancer treatment & palliative care

Topic: Health technology assessment

#### 001147 | Decentralizing and optimizing breast cancer management in peripheral hospitals: The case of Ethiopia

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Dr. M. O. (1)

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(2) Ministry of Health, Addis Ababa, Ethiopia; (3) American Cancer Society, Addis Ababa, Ethiopia

**Background and context:** One in 10 deaths among NCDs is due to cancer. Breast cancer accounts for a third of all cancer types, yet most

are diagnosed at late stages, when their prognosis is poor. The government of Ethiopia with the support of American Cancer Society (ACS) and Clinton Health Access Initiatives (CHAI) has decentralized treatment of breast cancer to 24 hospitals around the country.

**Aim:** Improve early detection of breast cancer by strengthening clinical screening and detection capacity at the primary level to consequently reverse late presentations and improve patient outcome.

**Strategy/tactics:** Ethiopia recognized the burden of breast cancer and the associated late presentation for care. The adopted strategy is to decentralize the service and take the load off the busy tertiary-level hospitals to peripheral hospitals where screening and early detection can be done by trained mid-level health professionals.

**Programme/Policy:** Decentralization of breast cancer services set along the health system tier to get the service as close as possible to the end users.

**Process:** A cadre of non-oncologist providers (Nurses, GPs, and Doctors) are trained for 1 month on hands-on training on breast cancer management.

**Outcomes:** Twenty-four peripheral hospitals have successfully established breast cancer chemotherapy services with arranged referrals to tertiary care only for those in need of radiotherapy services. Patient adherence to care has improved, and providers' capacity for early detection has been enhanced.

**What was learned:** While recognizing the need for specialized care for breast cancer patients, chemotherapy services can be handled by trained non-oncologists at the peripheral level with careful mentorship and coaching. This approach reduces the load on busy tertiary hospitals, allowing them to focus on specialized care and reducing waiting times for patients. It has also improved patients' treatment outcomes and reduced logistical and transportation costs and time by providing care closer to where they live.

Speaker: G. N. Redae

Theme: 4. Cancer treatment & palliative care

Topic: Access to care

#### 001169 | Treat the pain—A program of the American Cancer Society

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**Background and context:** In late 2009, the Union for International Cancer Control (UICC) and the American Cancer Society (ACS) initiated the Global Access to Pain Relief Initiative (GAPRI) and its Treat the Pain campaign in response to the World Cancer Declaration Target 8: "to make essential pain medicines universally available by 2020." ACS is leading the Treat the Pain campaign in low- and middle-income countries in Sub-Saharan Africa. The program

countries include Cameroon, Ethiopia, Kenya, Liberia, Nigeria, Rwanda, and Uganda.

**Aim:** Treat the Pain is a program of the American Cancer Society that provides technical support to our partners in health ministries and cancer centers to improve patient access to cancer treatment, including essential pain relief.

**Strategy/tactics:** ACS uses the “MORPHINE” Framework which is an 8-point stepwise strategy to organize and sequence activities when designing interventions to scale up access to essential pain medicines in partner countries: (1) Mindset; (2) Organize; (3) Regulations; (4) Procurement; (5) Health worker; (6) Initiation; (7) Nationalization; (8) Empowerment—create a sustainable stakeholder base.

**Programme/Policy:** Treat the Pain program is implemented in three buckets: (1) Policies and guidelines, (2) Accessibility of pain relief, and (3) Training of clinicians.

**Program process:** Policies and guidelines—recognizing standard pain management practice as part of integrated health services; Accessibility of pain relief—ensuring uninterrupted stock of essential pain medicines for treating moderate and severe pain in cancer patients; (3) Training—implementation of the Pain-Free Hospital Initiative, a project designed to integrate effective pain treatment into hospital-based services.

**Outcomes:** Overall, 25,000 clinicians trained in pain assessment and treatment; 56% decrease in patients reporting severe pain across 33 implementing hospitals. In Nigeria, the ministry of health in collaboration with ACS, trained 17,164 clinicians across 22 teaching hospitals, resulting in 25% improvement in clinicians' knowledge of pain assessment and treatment, treated 14,239 patients in moderate and severe pain, and recorded 63% drop in inpatients average pain score.

**What was learned:** Guided by the WHO algorithm, or model for pain treatment. 80–90% of patients with moderate and severe pain were effectively treated.

Speaker: J. Swindell

Theme: 4. Cancer treatment & palliative care

Topic: Access to care

#### 001173 | Striving for leaps and bounds in radiation therapy

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**Background and context:** In Mongolia, as of 2022, the incidence of cancer was 206.1 per 100,000 population, and the mortality rate was 128, which is higher than the world average. Until recently, the provision of effective and high-quality radiation therapy (RT) in Mongolia encountered numerous challenges, including resource constraints and insufficient training. In 2019, National Cancer Center introduced two linear accelerators for the first time in Mongolia. However, these units lacked onboard imaging (OBI) systems, restricting their capacity for advanced RT techniques like Intensity Modulated Radiation Therapy (IMRT) and Image Guided Radiation Therapy (IGRT). Active collaboration with the International Atomic Energy Agency (IAEA) and other international organizations has helped facilitate the successful and safe implementation of these techniques which made possible

for Mongolian patients to have better tumor control and quality of life.

**Aim:** To reduce the financial burden of patients pursuing treatment abroad as Mongolians will be able to receive modern radiation therapy in the country and increase patients' quality of life.

**Strategy/tactics:** In 2021, preparations for IMRT implementation steps initiated. From June 2022, it has been used in the treatment practice. Assistance from International experts was crucial to success. IMRT is a costly treatment that requires special immobilization, quality control equipment, more planning and treatment time. Therefore, an effort is underway to get it listed in the health care services list of the Mongolian Health Insurance Fund.

**Programme/Policy:** Government funded “Project to Establish Navigation and Stereotactic Treatment Center” implemented in 2021–2023 and high precision linear accelerator was installed. Additionally, existing multi-energy linac has been equipped with OBI needed for IMRT.

**Process:** Staff training was carried out in collaboration with IAEA, Rayos Contra National Cancer Center, University of Washington and Australian Medical Physicists. In May 2022, an expert of the IAEA verified the preparation and commissioning of IMRT.

**Outcomes:** By locally introducing RT innovation—IMRT, which have been used since 2000 and became one of the highly effective standard treatments in clinical practice internationally, we have brought 20 years of progress to radiation therapy in Mongolia. Thus, the opportunities created for our citizens suffering from cancer to receive radiation treatment as in developed countries.

**What was learned:** It is well understood that it is necessary to introduce the next new technology after building a reliable base by mastering the previously introduced technology. Project will run successfully if it is in-line with government developmental objectives and the necessary infrastructure solutions are identified.

Speaker: E. Nansalmaa

Theme: 4. Cancer treatment & palliative care

Topic: Radiotherapy

#### 001174 | Engaging older adults living with and after cancer in a research priority setting process: A mixed methods study

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**Background:** Older adults have a higher likelihood of being diagnosed with cancer, and may have greater needs associated with functional

status and co-morbidity. However, older adults are often under-represented in research, and research priority setting activities.

**Aim:** This study aimed to engage older adults living with and after cancer in a multi-phase priority setting activity for future research in the context of geriatric oncology.

**Methods:** This mixed methods study recruited people over the age of 65, living with or after cancer via ambulatory care services within a local cancer center, and cancer advocacy services. In Phase 1, participants were invited to participate in a semi-structured interview, sharing their perceptions of priorities for future cancer research. In Phase 2, older adults living with or after cancer, family members/caregivers, healthcare professionals, advocacy professionals and academics/researchers working in the area of geriatric oncology were invited to participate in a 3-round Delphi study. Questionnaires in Phase 2 were derived from the results of Phase 1.

**Results:** In Phase 1, participants ( $n = 16$ ) recommended 50 research priorities in six domains: (1) recognition of the signs and symptoms of cancer; (2) research about cancer treatment; (3) assessment and management of co-morbidities; (4) unmet needs of older adults living with and after cancer; (5) impact of COVID-19; (6) impact on caregivers and family members of people living with and after cancer and (7) research priorities for patient and public involvement in research. In Phase 2, older adults ( $n = 22$ ) participated in the Delphi study, representing 40.7% of the Round 3 Delphi panel ( $n = 54$ ). 37 topics reached consensus, including development of new treatment options (98.2%), the role of functional status in determining treatment options 96.4%, enhancing professional (96.4%) and public (92.9%) awareness of symptomatic cancer presentation (96.4%), research to understand unmet needs (96.3%), late effects and outcomes (96.4%), and development of integrated care (96.4%) and survivorship care services (96.3%).

**Conclusion:** The study findings provide insight into older adults' priorities for future cancer research. The results emphasize the need for greater understanding of, and interventions to address treatment-related decision-making and care-related needs. The results highlight the need for prioritisation of research to enhance awareness and understanding of symptomatic diagnosis, management of cancer-related effects, and issues of co-morbidity and frailty among older adults living with and after cancer. The results of this current study are limited to the Irish context. Nevertheless, the list of research priorities generated by older adults in Phase 1 may be adapted to guide future priority-setting activities in geriatric oncology in other cultural and geographic contexts.

Speaker: A. Drury

Theme: 4. Cancer treatment & palliative care

Topic: Ageing and cancer

#### 001197 | Implementation of Rwanda pain-free hospital initiative (PFHI): An observational prospective descriptive study of short-term achievements since 2018

Hagegekimana, V. \* (1); Uwinkindi F. (1); Maniragaba T. (1); Igharo C. (2); Plattner L. (3); O'brien, M. (2)

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**Background and context:** Studies showed that in hospitals in low- and middle-income countries there is under-prescription of pain medicine, mainly opioids, among cancer patients reporting moderate to severe pain that leads to patient discomfort. Rwanda Biomedical Centre initiated the Pain-Free Hospital Initiative (PFHI) in collaboration with American Cancer Society (ACS) in 2018.

**Aim:** The purpose of the PFHI program has been to motivate clinicians to evaluate and treat pain, supply appropriate drugs to treat pain, equip clinicians with the skills and tools to effectively treat pain, and measure the impact of the program.

**Strategy/tactics:** This was an observational, prospective descriptive study design whereby pain score and opioid consumption baseline information were recorded before the project started and then at subsequent periods.

**Programme/Policy:** RBC trained staff champions from 47 public health care facilities on the PFHI curriculum. These staff champions subsequently trained their respective hospital staff, including doctors, nurses, and pharmacists on the PFHI course. Participants were assessed in their knowledge and attitudes prior to and following the training, and average pain scores and morphine consumption were collected as a baseline and assessed at time periods following the trainings.

**Process:** RBC trained hospital staff champions on data recording to help the project in evaluation. Tools for data extraction were designed and validated. The program team combined data from hospitals in Rwanda where the initiative is being implemented.

**Outcomes:** Pain assessment is now considered a fifth vital sign, and pain scores improved, with a reduction from 7 to 3 over 10. Pain assessment and appropriate pain management is now among MOH accreditation policies. Oral morphine production increased gradually since 2014 from less than 200 bottles of morphine (500 mg/500 mL) to more than 10,000 bottles of morphine oral solution (500 mg/500 mL each bottle) in 2023 due to the raised awareness and hospital demands. For the 141 staff champions trained across 47 public hospitals, their knowledge improved from 53% (before training) to 77% (after training). Onsite training lead by staff champions reached 3138 health care providers (nurses, doctors, pharmacists, and others). A 100% of public hospital have access to oral morphine solution free of charge.

**What was learned:** Based on the available study results, there is observable positive change in the implementation of the project. In order to scale up the project, there is a need to train health professionals from all primary health care facilities including health centers, implement continuous training to prevent turnover of trained staff, and ensure the ongoing availability of pain medicine.

Speaker: V. Hagegekimana

Theme: 4. Cancer treatment & palliative care

Topic: Health systems and palliative care/pain relief

**001252 | Effect of loud chanting of “AUM” on analgesic requirements, immunity status and QOL in cancer patients receiving treatment: A randomised control trial**

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(1) SOA University, Bhubaneswar, India; (2) Indian Association of Palliative Care, Bhubaneswar, India

**Background:** Use of ‘AUM’ chanting for meditation is practiced since the Vedic period in India. This is associated with the experience of vibration sensation around the ears and transmitted through the auricular branch of the vagus. Many studies confirmed that it deactivates the limbic, amygdala, hippocampus, parahippocampal gyrus, insula, orbitofrontal, anterior cingulate cortices & thalamus. It reduces stress, anxiety, and depression in cancer patients.

**Aim:** We compared listening to AUM chanting and music of choice on quality of life, stress and immune parameters in cancer patients receiving palliative treatment.

**Methods:** The patients willing to participate in the study were screened by inclusion & exclusion criteria. Participants were informed about the study and a written consent was taken. They were randomly assigned to control or the test group. Intervention was given for 4 weeks.

The inclusion criteria were: Tissue diagnosis of Ca, attending palliative care clinic receiving palliative treatment & oral morphine. The exclusion criteria were psychiatric illness, hearing impairment, oral surgery. 250 stage II/III breast cancer patients were enrolled and divided into 2 groups, Group I (control) listened to Music of choice and Group II (Test) listened to AUM chanting. FACT-G, a cancer-specific QoL scale was used to assess QoL. Serum levels of pro-inflammatory cytokines, tumor necrosis factor-alpha (TNF- $\alpha$ ), interferon- $\gamma$  (IFN- $\gamma$ ) and granulocyte macrophage colony-stimulating factor (GM-CSF), and oxidative stress markers were measured at baseline, 1, 2, 4 and 8 weeks in both groups. Morphine consumption was also recorded. AUM chanting group chanted Om for 10 minutes, and the control group listened to a piece of music of their choice for 10 minutes for a period of 4 weeks. Music of choice or AUM chanting (as per the group) was played on patients' mobile phone using earphones. The subject was advised to rhyme OM chanting along with it.

**Results:** AUM chanting significantly ( $p < 0.05$ ) reduced the level of IFN- $\gamma$ , TNF- $\alpha$ , and MDA and improved QoL ( $p < 0.001$ ) in Group II patients compared to Group I. There was 25%–40% reduction in Oral Morphine requirement ( $p < 0.05$ ) in Group II.

**Conclusion:** AUM chanting is an ancient Indian practice that has been used for centuries to achieve spiritual and mental well-being. The scientific research suggests that AUM chanting can have numerous benefits in cancer patients, may reduce levels of inflammatory cytokines and improve QoL and symptomatic scale in advanced cancer patients receiving palliative chemotherapy and/or radiotherapy. It can be an important additional, simple and inexpensive therapy during cancer treatments to cope with treatment side effects including fatigue, depression, and immunological profile, which directly affects the patient's quality of life, but needs further studies.

**References**

- Long-Term Yogic Intervention Improves Symptomatic Scale and Quality of Life by Reducing Inflammatory Cytokines and Oxidative Stress in Breast Cancer Patients Undergoing Chemotherapy and/or Radiotherapy: A Randomized Control Study, Mayank Jain, Archana Mishra, Vishnu Yadav, Hari Shyam, Shailendra Kumar, Satyendra K Mishra, Pooja Ramakant, Cureus. 2023 Jan; 15(1): e33427.
  - Lessons From India: A Narrative Review of Integrating Yoga Within the US Healthcare System, Puja Yatham, Supritha Chintamaneni, Sarah Stumbar, Cureus. 2023 Aug; 15(8): e43466. Published online 2023 Aug 14.
  - Effects of an 18-Week Integrated Yoga Program on Cardiac Autonomic Function in Breast Cancer Patients Undergoing Adjuvant Chemotherapy: A Randomized Controlled Trial, Ganagarajan Inbaraj, Kaviraja Udupa, Rao Mohan Raghavendra, Amritanshu Ram, Shekar Patil, Jamuna Rajeswaran, Krishna K. Nandakumar, Spoorthi Belur, Krishnamurthy Arjun, Ramajayam Govindaraj, Sapna K. Bayari, Talakad N. Sathyapratha, Integr Cancer Ther. 2023; 22: 15347354231168795. Published online 2023 Aug 18. doi: [10.1177/15347354231168795](https://doi.org/10.1177/15347354231168795).
  - Effects of Pranayama on Cancer Patients: A Narrative Review of Clinical Outcomes.
  - Selvaraj Giridharan, Bhuvana Pandiyan, Nagaraj V Kumar, Soni Soumian, Cureus. 2024 Feb; 16(2): e54688. Published online 2024 Feb 22.
  - Impact of Somatic Yoga and Meditation on Fall Risk, Function, and Quality of Life for Chemotherapy-Induced Peripheral Neuropathy Syndrome in Cancer Survivors, Mary Lou Galantino, Robyn Tiger, Jennifer Brooks, Shera Jang, Kim Wilson, Integr Cancer Ther. 2019; 18: 1534735419850627
- Speaker: S. Nayak  
 Theme: 4. Cancer treatment & palliative care  
 Topic: Innovation and technology in care

**001292 | Bridging the gap in access to affordable medical opioids for pain relief in Sub-Saharan Africa**

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**Background and context:** The 2022 International Narcotic Control Board (INCB) report confirms the persistent disparities in consumption of medical opioids for treatment of pain, defines critical obstacles and recommends broad range of ways to mitigate these obstacles, including training of health care professionals.

**Aim:** Identify the challenges in access to pain relief in low resourced countries and provide tailored support to ministries of health and cancer organizations to improve availability and accessibility to affordable pain relief.

**Strategy/tactics:** The Global Cancer Treatment (GCT) team of the American Cancer Society (ACS) accessed a range of information from

partner countries on factors that affect the availability and access to affordable morphine in the region.

**Programme/Policy:** ACS has worked with health ministries and cancer care organizations in Sub Saharan Africa to provide technical support to improve access to high quality, affordable pain treatment for cancer patients.

Four key factors influencing pain relief accessibility are considered in the reported finding: availability, accessibility, affordability and government or private sector ownership of programs.

**Process:** A questionnaire consisting of 15 questions was remotely administered via email. The questions covered various aspects of the morphine (pain relief) pipeline to access or gather relevant information.

**Outcomes:**—25% of the 16 countries have increased access to affordable formulation of morphine for pain management.

- 12.5% of the countries have access to affordable liquid oral morphine.
- The ministry of health owns the product (liquid oral morphine), and it is included in the medicines essential list (for the state or public use).
- ACS has provided complimentary training resources—Pain-Free Hospital Initiative (PFHI)—to build capacity of health workers effective implementation of pain relief programs.
- 75% of the countries still have no availability of and no accessibility to affordable opioid pain relief programs and medicines.
- Countries with established programs for pain relief and access to affordable morphine report that over 70% of patients experiencing moderate to severe pain are cancer patients.

Implementing countries report that liquid oral morphine is inexpensive and remarkably effective treatment for moderate to severe pain in more than 90% of the patients treated.

**What was learned:** This program has proved scalable in implementing resource limited countries, improved access to affordable high quality pain relief and resultantly improved patient care and patient outcome in health service centers.

Speaker: R. Canfua

Theme: 4. Cancer treatment & palliative care

Topic: Access to pain relief

#### 001357 | Factors affecting cancer diagnosis and treatment delays in Ukraine

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Ukraine; (5) Ivano-Frankivsk Central City Clinical Hospital, Ivano-Frankivsk, Ukraine; (6) Saint Martin Hospital, Mukachevo, Ukraine; (7) Kyiv Regional Cancer Center, Kyiv, Ukraine; (8) National Cancer Institute, Kyiv, Ukraine; (9) University of Texas MD Anderson Cancer Center, Houston, United States of America

**Background:** We explored perceived factors affecting cancer screening and treatment in Ukraine, which faced multiple challenges following Russia's invasion.

**Aim:** The earlier the disease is detected, the more opportunities for successful treatment and improved prognosis.

**Methods:** Online surveys assessing cancer diagnosis and treatment delays in Ukraine were distributed to patients in Ukraine through cancer-focused social media in April 2023. For patients who reported experiencing delays in either diagnosis or treatment, the survey included open-ended questions inquiring about details of this and suggestions for improvement. Data was analyzed using thematic analysis and descriptive statistics.

**Results:** Overall, 307 patients from all regions of Ukraine were surveyed.

Out of them, 225 were women (73.29%), while men accounted for 26.71% of all cases. Breast cancer comprised 102 cases (33.22%), another type—89 (29.10%), lymphoma 22 (7.17%), rectal cancer 17 (5.54%), head and neck cancer 15 (4.78%). Notably, 143 (46.59%) were diagnosed before the large-scale invasion, while the remaining 164 (53.42%) were diagnosed after.

Of 307, 66 (21.5%) reported experiencing diagnostic delays. For these 66, primary reasons for delays included physician negligence for 17 (25.8%), expensive diagnostic tests 14 (21.2%), long waiting time for results 12 (18.2%), Russia's full-scale invasion for 8 (12.1%), incorrect initial diagnosis for 6 (9.1%), misinterpretation of test results for 4 (6.1%). Of 307, 63 participants (20.5%) reported experiencing treatment delays. For the 53, reasons included the war situation for 13 (20.6%), high cost of treatment for 12 (19%), unavailability of prescribed medications for purchase in Ukraine for 12 (19%), suboptimal doctor-patient relationship for 9 (14.3%), long treatment waiting lists for 9 (14.3%), corruption cited by 5 (7.9%).

**Conclusion:** Both diagnostic and treatment delays were fairly common among our respondents.

Opportunities for improvement include strategies to enhance the doctor-patient relationship, improve affordability and accessibility of cancer therapy.

Speaker: A. Liakh

Theme: 4. Cancer treatment & palliative care

Topic: Screening and early detection: technological advances

#### 001400 | Cancer supportive care for people affected by lung cancer: A social return on investment economic evaluation

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(1) Peter MacCallum Cancer Centre, Melbourne, Australia; (2) The University of Melbourne, Parkville, Australia

**Background:** Unmet supportive care needs are high among patients with lung cancer and their informal carers, resulting in avoidable healthcare use and financial burden. Provision of cancer supportive care is demonstrated to mitigate informational, physical, financial, social and psychological consequences of cancer and its treatments. Despite evidence of the effectiveness of cancer supportive care, globally there has been lack of investment in delivery of optimal supportive care services. Paucity of evidence regarding economic benefit of cancer supportive care has contributed to limited policy impact and allocation of scarce health care resources to provision of comprehensive supportive care.

**Aim:** This study set out to (1) develop a stakeholder and evidence-informed model of quality cancer supportive care for people affected by lung cancer in tertiary healthcare settings and; (2) utilise Social Return on Investment (SROI) methodology to conduct a forecast evaluation of the model to ascertain potential social value and return on investment of an evidence-informed model of cancer supportive care.

**Methods:** An international consensus framework of quality supportive care led by our team was used to inform the SROI study. A forecast SROI was undertaken to model the inputs, outcomes and value associated with the delivery of quality supportive care, and to undertake economic analysis to determine financial value. Qualitative stakeholder consultations were conducted and synthesised with published evidence to inform the SROI model of cancer supportive care. SROI ratios were generated to determine the social value and cost savings associated per every \$1AUD invested in cancer supportive care for both the health system and patients. Deadweight, displacement, drop off and attribution were calculated, and sensitivity analysis was performed to confirm the stability of the model.

**Results:** The estimated annual costs to deliver quality supportive care at an individual health service for an individual patient (inclusive of both health system and patient investment) is modelled by this study at AUD\$22,676. The health system contributes 92% of investment, and patients contribute the remaining 8%, as out of pocket costs. The value generated from these modelled supportive care service investments in a one-year period, for both the health system and the patient combined is AUD\$ 200,800.00, resulting in an SROI ratio of 1:9 That is, for every dollar invested in supportive care, AUD\$9.00 return is obtained when savings to the health system and benefits to the patients are combined.

**Conclusion:** Results from this study establish projected benefits associated with implementation of quality supportive care for patients with lung cancer in a tertiary healthcare setting. Further, the SROI model provides a comprehensive framework of supportive care services and health workforce necessary to achieve value-based outcomes for patients and the health system.

Speaker: A. Hyatt

Theme: 4. Cancer treatment & palliative care

Topic: Supportive care

## 001408 | Long-term impacts of the IAEA technical cooperation projects and imPACT Reviews on cancer diagnosis and treatment in Cambodia—A step forward to national cancer control program

Beuta R. \* (1); Mel, M. (1); Hun, C. (1)

(1) Calmette Hospital, Phnom Penh, Cambodia

**Background and context:** The government of Cambodia is committed to address the challenge of controlling cancer and decided to build a national cancer center in Calmette Hospital in 2013 (1). With strong collaboration with the International Atomic Energy Agency (IAEA) under technical cooperation program and imPACT missions, the national cancer center was opened in 2018 equipped with the first nuclear medicine and modern radiotherapy unit and continued to successfully sustain and expand until today (2). Despite some challenges, the committed leadership and management, continuous collaboration with the IAEA and engagement with involved stakeholders have resulted the benefits for the cancer patients in this country.

**Aim:** To present the challenges and achievements of the 10-year journey of a new cancer center and a way forward for a national cancer control program

1. Strategy/tactics: Build infrastructure for comprehensive cancer treatments.
2. Build the necessary human resources to operate the facilities.
3. Comply with international safety standards for radiation therapy
4. Develop staff retention strategies and standard maintenance programs
5. Collaborate and cooperate actively with involved development partners.

**Programme/Policy:** We depend on several programs including the IAEA technical cooperation projects (national and regional), bilateral cooperation, and international volunteer program to build the mandatory human resources to operate the center. We continue to engage and collaborate with all development partners to assure the safe and proper use of modern radiation related diagnosis and treatment to sustain and improve our services by developing more advanced techniques of radiotherapy and nuclear medicine. Additionally, we implement recommendations from the imPACT reviews by establishing regular multidisciplinary decision making for comprehensive cancer management.

**Process:** Good planning plays a critical role in this journey; however, without committed leadership and management with the support of the government, the project would have been delayed or failed. Meanwhile strong and continuous collaboration with key development partners is necessary in such a huge project. Finally, the purpose of having the local professionals to take charge is the key to sustaining all services and expanding to a larger scale as needed.

1. **Outcomes:** Advanced radiotherapy modalities including for children (3)

2. Computerized tomography scan-based high dose rate brachytherapy
3. Bone scintigraphy and iodine 131 therapy
4. Sole pediatric radiotherapy program in the country
5. Regular multidisciplinary team discussion for all new cancer cases

**What was learned:** Our experience can be a model for setting up this scale of cancer center in a low middle income setting. However, to address the cancer burden in the whole country, a national cancer control program must be developed.

#### References

- (1)Ministry of Health, National Strategic Plan for the Prevention and Control of Non-Communicable diseases 2013–2020.
- (2)imPACT Review, Cancer Control Capacity and Needs Assessment Report, September 2023.
- (3)Eav S, Mel M, Ath V, Shelton N, Rogl K, Newman G, Ward I, Yap ML. The Modernization of Radiation Therapy Services in Cambodia: A Model of International Collaboration. *Int J Radiat Oncol Biol Phys.* 2021 Sep 1;111(1):14–22. doi: [10.1016/j.ijrobp.2021.04.008](https://doi.org/10.1016/j.ijrobp.2021.04.008). PMID: 34348108.

Speaker: R. Bearta

Theme: 4. Cancer treatment & palliative care

Topic: Cancer control planning in low- and middle-income countries

## Theme 5: Tobacco control

### 000218 | Life around women beedi workers—A photovoice study

Ravi P. \* (1); Kiranmayee M. (2); Begum F. (2); N S. (2); Moya E. (3); Wilson A. (1); Gerald L. B. (4); Salamova A. (5); Von Hippel F. A. (1); Madhivanan P. (1)

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**Background:** Tobacco is the leading cause of cancer in the world. Beedi, known as the poor man's cigarette, is manufactured in many states of India, and Bangladesh, and its use is associated with various health risks. However, there is scant evidence on the potential health effects of tobacco on industry workers. Photovoice, as a Community-Based Participatory Action Research (CBPAR) approach, combines research with advocacy and action for change.

**Aim:** The aim of this study was to explore the experiences and challenges faced by the women beedi workers handling unburnt tobacco using photovoice.

**Methods:** We recruited 20 women who were involved in beedi rolling for at least a year. A one-day training was conducted, and training topics included an introduction to photovoice, principles, and ethics of

photography, photo consent and safety, field practice using digital cameras, and group discussion and reflection about the photovoice process and outcomes. Participants were then asked to take pictures of what best represents occupational health challenges in their workplace. Photos were taken for 4 weeks, and after every 7 days, the participants discussed the pictures with the research team. The qualitative data from the study were analyzed using thematic content analysis using MAXQDA software.

**Results:** The major themes were health problems, other fewer occupations in the community, occupational health problems, household responsibilities along with work, interpersonal relations, children's health and education, social inequality, and economic burden. Empowerment measures include thinking about the problem, leadership within each group, facilitation skills, photographic skills, and presentation skills. A photovoice exhibition was arranged within the community. The community leaders, community members, and policymakers were invited to view the photos taken by the participants.

**Conclusion:** The findings from this study provide a better understanding of health and social challenges faced by women beedi workers. This will help in making better tobacco control policies in lower-middle-income countries by identifying better and sustainable employment opportunities for small-scale tobacco workers.

#### References

- Wang C, Burris MA. Photovoice: Concept, Methodology, and Use for Participatory Needs Assessment. *Health Educ Behav.* 1997;24: 369–387. doi:[10.1177/109019819702400309](https://doi.org/10.1177/109019819702400309), Arora M, Datta P, Barman A, Sinha P, Munish VG, Bahl D, et al. The Indian Bidi Industry: Trends in Employment and Wage Differentials. *Front Public Health.* 2020;8: 572638. doi:[10.3389/fpubh.2020.572638](https://doi.org/10.3389/fpubh.2020.572638), Lakshman Rao RL, Chelimela D, Kakkar R, Aravindakshan R. Occupational Morbidity of Women Beedi Workers in Telangana. *Indian J Occup Environ Med.* 2020;24: 78–83. doi:[10.4103/ijjem.IJEM\\_235\\_19](https://doi.org/10.4103/ijjem.IJEM_235_19)

Speaker: P. Ravi

Theme: 5. Tobacco control

Topic: Wellness at work

### 000382 | Qualitative study to explore the occupational and reproductive health challenges among women tobacco farm laborers in Mysore District, India

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**Background:** India is the third-largest tobacco producer in the world. Tobacco farm laborers in India are primarily women and children working for very low wages [1–2].

**Aim:** The aim of this study is to explore occupational and reproductive health challenges faced by women tobacco farm labors in Mysore District, India.

**Methods:** We conducted focus group discussions (FGD) among the women tobacco farm laborers in Mysore District, India. Five FGDs were conducted among 41 participants with 6–7 participants in each group and the discussions lasted 60–90 min. The FGDs were audio recorded and transcribed verbatim to the Kannada language, and later translated to English language. Codes and themes were generated based on a deductive and inductive approach using the socio-ecological model (SEM). MAXQDA software was used for analyzing the collected data.

**Results:** At the individual level of SEM, participants reported symptoms of green tobacco sickness (GTS) including headaches, back pain, gastric problems, weakness, and allergies. GTS symptoms were reported during menstruation, prenatal, and postnatal periods. The participants had poor awareness about the health effects of tobacco farming. We found gender inequality in wages and personal protective equipment (PPE) use. At the interpersonal level, participants received support from family during their pregnancy and post-natal period. At the organizational level, participants wanted maternity benefits from the tobacco board. At the community level, participants received support from healthcare workers during their pregnancy and post-natal period. At the societal level, participants needed monetary and nutritional supplements. Education on the health effects of working in tobacco farms and supportive policies for women farmworkers during pregnancy and postnatal periods are needed to improve the health and well-being of this underserved community.

**Conclusion:** The participants had poor awareness of the health effects of tobacco farming, and no support from the organizational and societal levels. There is a need to educate the farm laborers on the health effects of working in tobacco farms and provide policies supporting these women during pregnancy and the post-natal period.

Speaker: P. Ravi

Theme: 5. Tobacco control

Topic: Wellness at work

000873 | Whatever people may say, they are all harmful to health is a communication campaign and an educational initiative in Uruguay to enhance the control on the use of new tobacco and nicotine products

Sanabia S. (1); Sologaistoa, B. \* (1); Blanco, M. (1)

(1) Comisión Honoraria de Lucha Contra el Cáncer, Montevideo, Uruguay

**Background and context:** In Uruguay NCDs feature prominently, and cancer is the second leading cause of death. Nearly 40% of all cancers diagnosed annually and more than half of all deaths are due to malignant tumours, for which tobacco use is a recognized risk factor to a greater or lesser extent. (1) Since 1994, CHLCC (Honorary Committee against cancer) has been developing innovative information campaigns and educational community efforts on the subject. In addition, strong

anti-smoking public policies have been adopted since 2005. The introduction of new tobacco and nicotine products aimed at young people has recently changed this scenario, as these new products are falsely promoted as less harmful than cigarette smoking and also as an alternative to smoking cessation. In the face of that situation, this initiative was created with a focus on health promotion and cancer prevention. (1) <https://www.comisioncancer.org.uy/Ocultas/I incidencia-y-Mortalidad-2015-2019-Distribucion-por-rango-etario--uc280>

**Aim:** To implement for the first time in Uruguay an information campaign and an educational strategy aimed at young people on the harm of new tobacco and nicotine products to the human health; and to increase young people's ability to acquire knowledge related to the topic.

**Strategy/tactics:** This initiative consists of two tools in emoji design style 1. Informative strategy: to spread messages in social media as inputs to empower this age population by sharing the message. 2. Educational strategy: a memory game to create a collective learning environment. It provides a space for peer-to-peer exchange. These community-based, face-to-face activities developed by the CHLCC technical staff.

**Programme/Policy:** Prevention.

**Process:** Education.

**Outcomes:** Information tool: Promotional banners published for 1 month received more views from people aged 25–34 on Facebook, and more views from an audience aged 18–24 on Instagram. These promotional messages reached an audience 75% larger than expected as per the allocated expenditure. Follower's loyalty was 131% higher on Facebook and 534.6% higher on Instagram. 2. Educational tool: 305 group sessions were implemented in different parts of the country. Both resources (tools 1 and 2) were widely accepted and shed light on a topic that had not been openly discussed until now.

**What was learned:** The resources developed by expert teams using youthful aesthetic designs and formats engage the attention and promote the involvement of young people. They are valued as culturally appropriate to raise awareness, dispel myths and misconceptions. Both developed tools are easily adaptable to different population contexts.

Speaker: B. Sologaistoa

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

000914 | Make big tobacco pay campaign (MBTP): Mobilizing people power to hold the tobacco industry accountable

Dorado D. \* (1); Vance K. (2); Arcila, J. (3); Rubenstein, A. (2)

(1) Corporate Accountability, Quito, Ecuador; (2) Corporate Accountability, Boston, United States of America; (3) Corporate Accountability, Pereira, Colombia

**Background and context:** Every year, more than 8 million people die from tobacco-related diseases. Big Tobacco profits enormously—then

uses its profits to undermine tobacco control, cancer prevention, and other lifesaving public policy.

**Aim:** Corporate Accountability's MBTP campaign aims to build momentum to hold this deadly industry accountable and push governments to implement liability, in order to curb corporate abuse and stop cancer and other tobacco-related disease. This is a long-term campaign.

In the first year, the goal was to support adoption of the liability decision at COP10 [1].

**Strategy/tactics:** To support the adoption of the WHO FCTC Article 19 decision at COP10 [2], the campaign launched:

- A coalition of organizations with a digital home at MakeBigTobaccoPay.org.
- International grassroots petition[3] & international sign-on letter from individuals and civil society organizations with expertise on liability, reparations, and/or legal accountability[4].
- Global journalist trainings.
- **Programme/Policy:** Article 19: “*For the purpose of tobacco control, the Parties shall consider taking legislative action or promoting their existing laws, where necessary, to deal with criminal and civil liability, including compensation where appropriate [...]”*[5].
- **Process:**—Campaign launched on World No Tobacco Day 2022.
  - The petition garnered more than 30,000 signatures; more than 80 organizations and experts endorsed the sign-on letter.
  - 2 global journalist trainings on Article 19 were conducted in the lead-up to COP10.
  - Petition and sign-on letter were delivered to governments at an event at COP10.
- **Outcomes:** The campaign contributed to the adoption of a COP10 decision on Article 19 that, among other things, strengthens implementation of liability and establishes an expert group to support governments in doing so.
- **What was learned:**—Mobilizing people power is key to international policy adoption.
  - Advocacy tools such as international petitions/sign-on letters and/or journalist trainings are effective for visibility and demonstrating widespread support to governments.
  - Partnerships across civil society is essential.

## References

<https://shorturl.at/exB03>, <https://shorturl.at/aft59>, <https://shorturl.at/xHN04>, <https://shorturl.at/flzl4> This tactic was co-sponsored by: African Tobacco Control Alliance, Action on Smoking and Health, Coalición America Saludable, European Network for Smoking and Tobacco Prevention, Global Center for Good Governance in Tobacco Control, Network For Accountability of Tobacco Transnationals, South East Asia Tobacco Control Alliance., <https://shorturl.at/dzBFT>

Speaker: D. Dorado

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

## 001098 | Advertising for tobacco and related products on social media in Germany

Heidt C. \* (1); Wüllner, A. (1); Seiler, J. (1); Ouédraogo N. (1); Schaller K. (1)

(1) German Cancer Research Center, Heidelberg, Germany

**Background:** Advertising for tobacco and related products increases smoking initiation as well as the desire to try the products [1, 2]. In order to protect adolescents, advertising for tobacco products and e-cigarettes is banned on TV, radio, print and the internet [3]. However, the law is poorly implemented on social media. As many adolescents use social media extensively [4], they are exposed to advertising and encouraged to consume these products.

**Aim:** This study aims to show the extent of advertising for e-cigarettes and heated tobacco products (HTPs) on social media. The results of the study will be incorporated into an advocacy campaign to drive forward legislation for a comprehensive ban on tobacco and alcohol advertising in Germany.

**Methods:** From February to September 2023, we collected posts in German language on Facebook, Instagram, TikTok and Pinterest related to e-cigarettes and heated tobacco products using a social media listening tool (Meltwater). Search terms for the different products were defined and search strategies were created. The posts were categorised and systematically analysed with regard to criteria such as the posting account and the subject of the post. Preliminary results are shown.

**Results:** To date we analysed 1458 posts on e-cigarettes (February to April 2023) and 431 posts on HTPs (February to September 2023). Especially retailers (52% of e-cigarette posts, 57% of HTPs posts) and manufacturers (16% of e-cigarette posts, 36% of HTPs posts) are using social media to promote their products. The analysis paints a picture of how these products are advertised on social media: Advertising for HTPs often highlights technical features (20% of HTPs posts). The products are also presented as stylish and trendy accessories (19% of HTPs posts), and in some cases a young target group is addressed (34% HTPs posts). Advertising for e-cigarettes tends to emphasise the taste of the products (29% of e-cigarette posts) and is largely about disposable products (41% of e-cigarette posts), which are made attractive to adolescents by bright colours and various flavours (Figure 1).

**Conclusion:** Our study shows for the first time for Germany the extent of advertising for e-cigarettes and HTPs on social media. Despite the advertising ban in the internet young users of the platforms are exposed to advertising for harmful products. The results of the study reveal existing flaws in regulation. A strict control of existing regulations is necessary.

## References

1. German Cancer Research Center (DKFZ), Tobacco Atlas Germany 2020 [in German language]. 2020: Pabst Science Publishers, Lengerich, Germany.

2. German Cancer Research Center (DKFZ), Advertising encourages people to smoke—a comprehensive ban on tobacco advertising is overdue [in German language]. 2020: Heidelberg, Germany.
3. The Parliament of the Federal Republic of Germany, Tobacco Products Act of April 4, 2016 (BGBI. I p. 569), as last amended by Article 1 of the Act of July 19. 2023 (BGBI. 2023 I No. 194). 2023.
4. Koch, W., Results of the ARD/ZDF Online Study 2023: Social media is used for 30 minutes a day—Instagram is the number one platform [in German language]. Media Perspektiven 26/2023, 2023.

Speaker: C. Heidt

Theme: 5. Tobacco control

Topic: E-cigarettes

longitudinal results for each reporting country and the ability to compile national FCTC shadow reports.

**What was learned:** The Global Progress Hub provides a new window on the world of FCTC implementation by providing tobacco control stakeholders with online access to the major treaty implementation datasets. This innovative open data platform allows for enhanced monitoring surveillance, reporting and implementation of the treaty.

#### References

2023 Global Progress Report on Implementation of the WHO Framework Convention on Tobacco Control. Geneva: World Health Organization; 2023, WHO report on the global tobacco epidemic, 2023: protect people from tobacco smoke. Geneva: World Health Organization; 2023.

Speaker: L. Hagen

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

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#### 001170 | Creating a global tobacco control treaty surveillance platform

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Hagen L. \* (1); Cohen, J. (2); Hammal, F. (1)

(1) ASH Canada, Edmonton, Canada; (2) Johns Hopkins Bloomberg School of Public Health, Baltimore, United States of America

**Background and context:** Over 180 countries have been reporting their progress on the implementation of the WHO Framework Convention on Tobacco Control since 2008. However, these important datasets have not been consolidated, assembled and organized in an online, functional, user-friendly manner that all tobacco control stakeholders can readily access. The absence of a consolidated online data surveillance platform has constrained treaty monitoring, reporting and implementation.

**Aim:** To develop and deploy a robust, interactive, user-friendly, and functional online visual analytics platform to actively monitor, measure and shape tobacco control progress and performance among nations including the implementation of the WHO Framework Convention on Tobacco Control.

**Strategy/tactics:** ASH Canada and the Institute for Global Tobacco Control at Johns Hopkins Bloomberg School of Public Health created a robust, interactive online treaty monitoring platform ([www.globalprogresshub.com](http://www.globalprogresshub.com)).

**Programme/Policy:** The Global Progress Hub supports the implementation of the WHO Framework Convention for Tobacco Control.

**Process:** The contents, capabilities, features and functions of the platform were determined in consultation with an advisory committee consisting of 15 international experts and based on the availability and contents of reporting datasets and the capabilities and limitations of the chosen data analytics software application (Tableau).

**Outcomes:** The *Global Tobacco Control Progress Hub* contains over 300 tobacco control indicators from over 180 countries spanning up to 12 years of reporting and representing over 400,000 datapoints.

The Progress Hub includes four dashboards that allow for various data groupings, breakdowns and comparisons by country, WHO region, national personal income level and human development index gradients. The platform also includes national scoring, ranking and

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#### 001240 | Canada's world precedent setting health warnings directly on every individual cigarette

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Cunningham R. \* (1)

(1) Canadian Cancer Society, Ottawa, Canada

**Background and context:** On May 31, 2023, Canada became the first country with a requirement for a health warning directly on every cigarette. This world-first measure, which has received extensive international attention, will reduce smoking and increase awareness of smoking's health effects. The measure will reach all smokers, reduce the appeal of cigarettes, complement package warnings, and prompt discussion. The cost of printing the warnings is paid entirely by tobacco companies. This measure may be even more significant in low-income countries where cigarettes are often sold individually without package warnings.

In Canada, the first actual cigarettes with the warnings started to appear on store shelves in January 2024. The warnings are bilingual (English, French). For most cigarettes, the implementation deadline is April 30, 2024, at the manufacturer level and July 31, 2024, at the retail level, with some cigarettes having a later deadline.

**Aim:** This presentation will outline the successful Canadian advocacy experience to require warnings on individual cigarettes.

**Strategy/tactics:** The many strategies and tactics in the advocacy campaign included:

- advocating from 2004 for the measure;
- commissioning research (initially in 2006);
- compiling research done worldwide (now about 25 studies).
- obtaining amendments to national legislation to have regulatory authority for the measure.
- preparing briefs and conducting meetings with government officials to provide the rationale.
- citing guidelines under the WHO Framework Convention on Tobacco Control.

- preparing a draft regulation.
- supporting the measure in media statements.
- responding to industry opposition and arguments, including that the warnings on cigarettes would not work; may cause health risks from the ink; would cause contraband; infringed constitutional protection of freedom of expression.

**Programme/Policy:** Health warnings directly on every cigarette.

**Process:** Steps in the process included: May 2018—national legislation amended to authorize regulations; October 2018—government general consultation for new tobacco labelling; 2022—draft regulations published for consultation; 2023—final regulations adopted.

**Outcomes:** The national regulation adopted in 2023 followed a successful advocacy campaign and extensive work by Health Department officials. Australia is now preparing its own regulations. Other countries are expected to follow as well.

**What was learned:** Canada has adopted and implemented this pioneering measure, demonstrating feasibility for other countries.

Tobacco industry opposition can be overcome.

Speaker: R. Cunningham

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

#### 001360 | Tobacco advertising and promotion and product and flavor availability at points-of-sale near primary and secondary schools in South Africa

Mthembu, Z. \* (1); Mateme, L. (2); Ngcobo Z. (3); Sebrie E. (4); Fuss C. (4); Egbe C. (5)

(1) Campaign for Tobacco-Free Kids, Pretoria, South Africa;  
 (2) South African Tobacco Free Youth Forum, Centurion, South Africa;  
 (3) Campaign for Tobacco-Free Kids, Pretoria, South Africa; (4) Campaign for Tobacco-Free Kids, Washington, United States of America;  
 (5) South African Medical Research Council, Pretoria, South Africa

**Background:** Multinational tobacco companies utilize tobacco advertising, promotion and sponsorship (TAPS) to target youth, and exposure to TAPS at the point-of-sale (POS) is associated with smoking initiation and progression to regular use among youth. Specific marketing strategies include the sale and advertising of tobacco and advertising near schools and areas where youth congregate, and sale of appealing flavors of tobacco and nicotine products. South Africa (SA) is party to the WHO Framework Convention on Tobacco Control (WHO FCTC) but does not currently fulfill its obligations. South Africa's tobacco control bill aims to align SA with its obligations under the treaty.

**Aim:** This study observed POS near primary and secondary schools and collected data on TAPS and tobacco and nicotine product availability (brands, flavors) in SA.

**Methods:** Data collectors observed all POS selling at least 1 tobacco or nicotine product within a 300-meter radius of pre-identified

primary and secondary schools in SA. Following a 3-day data collection training, data collectors completed an electronic survey form (questions included product availability, presence of TAPS, etc.). Data collection was completed from Jan.-Feb. 2023, and took place in 6 cities located in 3 provinces in SA (Cape Town, Durban, Johannesburg, Pietermaritzburg, Pretoria, Stellenbosch). Data collectors worked in pairs and collected data around ~50 schools per city; data was collected at 409 POS.

**Results:** Flavored cigarettes were observed at 68.2% of the POS observed; fruit was the most observed flavor for oral nicotine pouches (ONPs) and menthol for heated tobacco and e-cigarettes. Tobacco and/or nicotine products were displayed at the eye level of a child in 68.2% of the POS observed, near candy/sweets at 53.6%, and part of a branded display at 50.6% of POS. Marketing tactics for tobacco and/or nicotine products included: illuminated displays (24.5% of POS observed), posters (15.7%), billboards (2.9%), and LCD screens (2.7%).

**Conclusion:** South Africa's Tobacco Products and Electronic Delivery Systems Control Bill should be adopted to close TAPS-related loopholes present in the current law, extend regulatory authority to the Ministry of Health to adopt flavor restrictions and/or bans, regulate emerging products like e-cigarettes and ONPs as tobacco products, and prohibit the sale of these products in certain locations (schools, or near schools).

Speaker: Z. Mthembu

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

#### 001366 | Tobacco plain packaging: Continuing international momentum

Cunningham R. \* (1)

(1) Canadian Cancer Society, Ottawa, Canada

**Background and context:** Plain packaging prohibits brand colours, logos and design elements on tobacco packages. Plain packaging curbs the industry's use of the package for promotion, reduces the appeal of tobacco products, and enhances the effectiveness of package health warnings. Plain packaging is a key tobacco control measure opposed by the tobacco industry. The measure is recommended by guidelines under the WHO Framework Convention on Tobacco Control.

Australia was the first country to require plain packaging (2012), followed by the United Kingdom and France (2016). All tobacco industry legal challenges to plain packaging have been dismissed, including by the World Trade Organization.

Over time, countries have learned from each other and plain packaging requirements have become more stringent, eg restricting the content of brand names (initially France), banning slim/superslim cigarettes (Canada, New Zealand), requiring packages to be in the slide and shell format (Canada), banning slim packs, and requiring a maximum length of cigarettes.

**Aim:** This session will provide an international overview of continuing international progress on plain packaging.

**Strategy/tactics:** Governments have support from health organizations and WHO to implement plain packaging. However, tobacco industry opposition must be overcome.

**Programme/Policy:** Tobacco plain packaging.

**Process:** Each country has its own process for requiring tobacco plain packaging. Often national legislation provides enabling authority for a subsequent regulation/decreed.

**Outcomes:** There are now 42 countries/territories that are moving forward with plain packaging, with 25 having adopted the measure, 3 having it in practice and 14 working on it. Global trends -- showing there are now that 25 having adopted the measure--are indicated in the graph. While the trend is encouraging, so far most of the countries implementing plain packaging are high income countries. Among the 25 with final requirements, there are now 2 in the Eastern Mediterranean Region (Saudi Arabia, Oman), 1 in Latin America (Uruguay) and 1 in the African Region (Mauritius).

There are 138 countries/territories requiring picture health warnings on cigarette packages, compared with 25 requiring plain packaging. This gap shows the potential as to how many more countries there are to implement plain packaging as a next step.

**What was learned:** That so many countries are requiring plain packaging demonstrates the feasibility for other countries. There is a need and an opportunity for countries to continue this international momentum. Implementation should be a global priority.

Speaker: R. Cunningham

Theme: 5. Tobacco control

Topic: Tobacco control—international efforts and new strategies

#### 001378 | Utilizing evidence-based tobacco cessation methods to reduce tobacco use in the Canadian construction industry

Mitchell, A. (1); Kuzmich, K. \* (1); Borland, T. (2); Dubray, J. (3)  
 (1) Canadian Cancer Society, Toronto, Canada; (2) Centre for Addiction and Mental Health, Toronto, Canada; (3) Ontario Tobacco Research Unit, Toronto, Canada

**Background and context:** Canada has a target of reducing commercial tobacco use among its national population to 5% by 2035. The Trades sector tobacco use remains significantly higher: about double the national average [ii]. Tobacco use and exposures are a dual hazard within construction environments which are linked to the significantly higher rates of various occupational cancers [iii].

**Aim:** Objectives were two-fold: to reduce barriers for accessing evidence-based cessation supports and shifting workplace culture so workers face fewer challenges in becoming and staying smoke-free. Build Smoke-Free drives change at various levels: individual, community and system. The objectives support smoke-free living by workers in the construction industry: helping them quit and stay quit.

**Strategy/tactics:** A program tailored to the unique barriers and challenges of this sector was scaled from 2019 to 2023 using both

in-person and virtual resources. A private sector construction partner, permitted access to select construction sites and thousands of trade workers across Canada. A "Triple P" partnership model (private, public health and non-profit) was established.

**Programme/Policy:** BSF is a tailored cessation intervention that connects construction workers ready to quit smoking with free resources (e.g., quit kits, NRT, and quit coaching), information to increase their odds of success, weekly on-site brief cessation counselling, healthy environment conversations, and a 30-day contest that both smokers and non-smokers can take part in for a chance to win draw prizes. Objectives are achieved by with inclusive site-wide campaign that ALL workers can join as *Quitters* or *Supporters*.

**Process:** Tailored messaging, via in-person hybrid and virtual modes of delivery were integrated into existing modes of communication and made available in different languages (English, French, Portuguese, Spanish, and Hindi).

**Outcomes:** From 2019 to 2022, 100+ construction sites and 2000+ tobacco users and non-tobacco users across 6 provinces participated. A total of 370 eligible participants completed the 6-month follow-up survey. Results were: 84% agreed knowledge increased about ways of quitting and 65% agreed BSF created a work environment that was supportive; 59% reported decreasing the number of cigarettes smoked at 6-month follow-up. Heaviness of Smoking index also improved.

**What was learned:** The program had significant, positive impacts on smoking behaviours and culture in construction setting. BSF shows promise and potential for adaptation to other occupational groups where high levels of workplace stress, poor smoking policy enforcement, and inaccessible support services foster difficult environments for workers to overcome nicotine addiction.

#### References.

Dupuis L, McKean H, Chow H. Quitting the smoke break: a successful partnership with the construction industry. Can J Public Health. 2018 Feb;109(1):128–133. doi: [10.17269/s41997-018-0019-8](https://doi.org/10.17269/s41997-018-0019-8). Epub 2018 Feb 26. PMID: 29981060; PMCID: PMC6964560, Bondy, Susan J.; Bercovitz, Kim L. "Hike up yer Skirt, and Quit". What Motivates and Supports Smoking Cessation in Builders and Renovators. Int. J. Environ. Res. Public Health 2013, 10, 623–637; doi:[10.3390/ijerph10020623](https://doi.org/10.3390/ijerph10020623), Construction Industry Statistics in Canada for 2024 | Made in CA. accessed April 4, 2024 at: <https://madeincanada.ca/construction-industry-statistics-canada>, Occupational Cancer Research Centre. Burden of occupational cancer in Canada: Major workplace carcinogens and prevention of exposure. Toronto, ON: 2019. Accessed April 4, 2024 from: OCRC\_National-Burden-Report\_2019.pdf (occupationalcancer.ca), 2019–2020 Canadian Community Health Survey Master Data file, Statistics Canada, Real Time Remote Access. Current Smoking by Industry., Canadian Tobacco and Nicotine Survey (CTNS): summary of results for 2020—Canada.ca.

Speaker: K. Kuzmich

Theme: 5. Tobacco control

Topic: Local interventions in tobacco control

## Theme 6: People living with cancer

### 000118 | Building true long term community engagement

Lewis M. \* (1)

(1) American Cancer Society Center, Atlanta, United States of America

**Background and context:** Over a period of 40 years Relay For Life has grown from a single event to a global movement engaging 34 partner NGOs who replicate the program across the world on every continent, bringing in a broad range of cultures to fight cancer as global movement. The very first event is still hosted annually in the same community.

**Aim:** The model of RFL is to engage passionate volunteers to deliver an event that gives their community the chance to celebrate cancer survivors, remember loved ones lost and fight back against cancer. Participants become the fabric of the event being given space to make their mark while cancer survivors are our guests of honor as they become visible beacons of hope spreading their message of survivorship.

**Strategy/tactics:** Event building starts with finding the right volunteers and empowering them to do something that makes them feel rewarded. Throughout this process we educate them about the impact of our organization and share with them the difference that they are making for us. By investing in training and developing our volunteers we open a pathway through mutual trust and a shared vision. While we know there are some volunteers who have been relaying for 40 years we also know that many Relay volunteers find a journey that sees them taking other roles in our organization, from volunteer driver to grassroots advocate, we are all working together to further our shared mission.

**Programme/Policy:** RFL is for national cancer charities who work broadly on cancer issues and types. This way the Relays are more inclusive to the whole community.

**Process:** The process of this event is to find volunteers, educate them about your work, establish a shared vision in line with your organizational goals, empower them to execute an event, reward them, invest in them and support them to explore further opportunities.

**Outcomes:** In 2022, 2460 communities hosted Relay For Life events by empowering local volunteers to celebrate the 41,646 cancer survivors who registered to attend. 260,420 participants formed 31,986 teams to become the life blood of this movement. Together they raised \$91,805,993! When the first steps of this process are done correctly revenue follows as our volunteers understand and believe in our work, it is they who decide to leverage their connections to raise funds.

**What was learned:** We have seen over the last 40 years that the rewards from implementing a Relay For Life program are broader than just the revenue regardless of the country and culture that it is implemented in. Volunteers take on organizational work and or support other facets of our work and perhaps more importantly become advocates for our work in their community attracting as well as inviting others to support us. Relay For Life and supporting the relevant

charity becomes a lifestyle—this is a statement that I have heard many times over the years from volunteer in different countries.

Speaker: M. Lewis

Theme: 6. People living with cancer

Topic: Working with volunteers

### 000211 | 24 hrs community fundraising

Al-Jaaidi B. \* (1)

(1) Anglia Ruskin University, Sharjah, United Arab Emirates

**Background and context:** With the 3rd edition of Relay for Life 2022/2023, Relay For life is an international event that is being organized in 31 countries worldwide with Friends of Cancer patients being the first and only partner in the MENA region since 2017, FOCP has managed to attract more than 9000 participants since then with over 6 million AED as fundraising to aid cancer patients, with the support of more than 1000 volunteer.

**Aim:** We aim to focus on offering the required aid to cancer patients financially and emotionally by enabling the community with the best tools and knowledge and guiding them through the best fundraising movement in the world “Relay For Life”.

**Strategy/tactics:** Create a sustainable fundraising method that is powered by the community and empowered with the best tools and knowledge to aid the most needed cancer patients financially and emotionally.

**Programme/Policy:** 24 h nonstop walkathon that is accompanied with 3500 participants taking turn on the track while the other team members are busy selling they hand crafted merchandise as a fundraiser, in addition we have sponsors donating money against every step the participants take which is calculated by the Relay For Life mobile application for steps counting, there are also many other attractions such as kids play areas, food courts, stage with different performers and many other fitness activities.

**Process:** The event date and venue are announced 6 months in advance, followed by recruitment of community volunteers. Volunteers receive training and education on Relay For Life. Registration opens 2 months before the event, with preparations including participant guidance on event readiness and fundraising. Site setup and dismantling occur post-event, with comprehensive reporting conducted throughout.

**Outcomes.**

2,014,863.29 AED

**What was learned:** The world needs to establish sustainable fundraising methods that would always be available regardless of the world economic situation which is based on what we have witnessed learned during the past pandemic and with what we have achieved with Relay For life is that the Human Capital is the best sustainable fundraising method and they will always find ways to help each other which is why we focus on empowering and educating the community on how they can best help each other through Relay for Life.

Speaker: B. Al-Jaaidi

Theme: 6. People living with cancer

Topic: Innovative fundraising models

**000333 | Early learnings from a national trial of a consumer and clinician developed survivorship care intervention for men with prostate cancer on androgen deprivation therapy (PCEssentials Hormone Therapy Study)**

Green A.\* (1); Newton R. U. (2); Chambers S. (3); Smith D. P. (4); Tuffaha H. (5); Galvão D. A. (2); Heathcote P. (6); Patel M. I. (7); Christie D. (8); Egger S. (4); Sara, S. A. (9); Heneka N. (1); Dunn J. (9) (1) University of Southern Queensland (UniSQ) Ipswich, Ipswich, Australia; (2) Edith Cowan University, Joondalup, Australia; (3) Australian Catholic University, Brisbane Campus, Banyo, Australia; (4) The Daffodil Centre, Sydney University, a joint venture with Cancer Council NSW, Sydney, Australia; (5) University of Queensland, Brisbane, Australia; (6) Brisbane Urology Clinic, Brisbane, Australia; (7) The University of Sydney, Sydney, Australia; (8) Genesiscare, Gold Coast, Australia; (9) Prostate Cancer Foundation of Australia, St Leonards, Australia

**Background:** Androgen deprivation therapy (ADT) is commonly used to treat men with locally advanced or advanced prostate cancer. Men on ADT often experience several side effects and frequently report unmet supportive care needs. An essential part of quality cancer support is survivorship care. Unfortunately, survivorship care is often not optimally delivered, or easily accessible, and there is currently no survivorship care model for men on ADT. To address this gap Australia's peak community-based organisation for prostate cancer, Prostate Cancer Foundation of Australia (PCFA), led the development of a survivorship care intervention.

**Aim:** A randomised trial of nurse-led survivorship care to: (1) Determine effectiveness of a survivorship care intervention (*PCEssentials*), relative to usual care, for improving health-related quality of life (HRQoL); (2) Evaluate *PCEssentials* implementation strategies and outcomes, including cost-effectiveness, with respect to usual care.

**Methods:** An effectiveness-implementation hybrid (Type 1) trial with participants randomised to one of two arms: (i) minimally enhanced usual care; and (ii) *PCEssentials* delivered over four tele-based sessions, with a booster session 5 months after session one. Informed by the consumer initiated Prostate Cancer Survivorship Essentials Framework, *PCEssentials* was developed by a PCFA working group with consumer, clinician, and researcher representation. Eligible participants are Australian men with prostate cancer commencing ADT and expected to be on ADT for a minimum of 12 months. Participants are followed-up at 3-, 6-, and 12-months post-recruitment. Primary outcomes are HRQoL and self-efficacy. A concurrent process evaluation with participants and study stakeholders is being undertaken to determine effectiveness of delivery of *PCEssentials*.

**Results:** To date, 92 patients have been enrolled to the study with data collection anticipated to conclude in December 2025. Twenty-six participants have completed the *PCEssentials* sessions. Preliminary evaluation suggests that the model of care is highly acceptable in terms of content and mode of delivery. Intervention participants report improved knowledge of ADT and related symptom management, gains in personal agency to proactively assess their survivorship

care needs and seek assistance, and raised awareness of psychological wellbeing.

**Conclusion:** Leadership from a community-based cancer organisation has enhanced consumer representation in this clinical trial, embedding the consumer voice in each research stage. Consumer involvement in the development of *PCEssentials* is key to ensuring that survivorship care is responsive to consumer identified needs and preferences.

Speaker: A. Green

Theme: 6. People living with cancer

Topic: Survivorship and rehabilitation

**000435 | Mortality according to alcohol consumption changes after diagnosis among liver cancer survivors: a population-based cohort study in South Korea**

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**Background:** Excess alcohol use causes liver cancer with established evidence; however, the effects of alcohol consumption on patients' prognosis remain overlooked.

**Aim:** A population-based cohort study was conducted to retrospectively evaluate the association between alcohol consumption changes after cancer diagnosis and several mortality outcomes among liver cancer survivors.

**Methods:** The study included 16,637 patients (13,849 men and 2788 women) who attended the 2002–2003 general health examination provided by the Korean National Health Insurance Service, were diagnosed with cancer, and followed up to 2019. Alcohol consumption levels (i.e., non-current drinking, light-to-moderate (0.1–28 g/day for men, 0.1–14 g/day for women), and heavy drinking (>28 g/day for men, >14 g/day for women) at pre- and post-diagnosis were combined into 9 categories to reflect behavior changes. The association between alcohol consumption and mortality was assessed with Cox proportional hazards models.

**Results:** Drinkers accounted for 54.46% in men and 9.39% in women pre-diagnosis and 14.70% and 2.34% post-diagnosis, respectively. In particular, 11.88% of men (21.81% of male drinkers) continued using, and 2.81% started to use after diagnosis. In men, compared with the reference (non-current drinkers at both measurements), patients not quitting drinking were at a significantly higher risk of all-cause mortality by 25%–67%. Excess risk was highest for heavy drinkers who started drinking, increased from light-to-moderate intake, or remained heavy use as before diagnosis, adjusted hazard ratios (aHRs) (95% confidence intervals, CIs) = 1.59 (1.24, 2.03), 1.54 (1.26, 1.88), and 1.67 (1.45, 1.92), respectively, regardless of chronic hepatitis status. In women, an elevated all-cause mortality risk was observed only in heavy drinkers with hepatitis who reported light-to-moderate drinking post-diagnosis, aHR (95% CI) = 2.71 (1.10, 6.68). Compared with those remaining at their pre-diagnosis drinking levels, quitting presented a lower risk of all-cause mortality by 20% in light-to-moderate

drinkers and 39% in heavy drinkers. Particularly, patients at the distant cancer stage who quit heavy consumption were at a significantly lower risk of death from overall cancer, aHR = 0.47 (0.24, 0.92), or liver cancer, aHR = 0.50 (0.25, 0.99).

**Conclusion:** Alcohol use remains a highlighted risk factor for mortality in patients with liver cancer, especially in men. Quitting showed protective effects, regardless of pre-diagnosis drinking levels. Intensive educational intervention should be reinforced in survivorship care.

Speaker: T. T. Bui

Theme: 6. People living with cancer

Topic: Alcohol control efforts

#### 000561 | Development and evaluation of a survivorship care plan for men with prostate cancer: A participatory action research project

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(2) Australian Catholic University, Brisbane Campus, Banyo, Australia;

(3) Prostate Cancer Foundation of Australia, St Leonards, Australia

**Background and context:** Survivorship care plans (SCP) are an essential component of quality cancer care, that provide cancer survivors with a personalised document that supports care co-ordination and both short and long-term management of their ongoing care. However, SCP specific to prostate cancer, and aligned with a best practice prostate cancer survivorship care framework, have been largely absent.

**Aim:** To develop a patient-led prostate cancer specific survivorship care plan.

**Strategy/tactics:** A participatory action research approach.

**Programme/Policy:** Three cycles of continuous quality improvement.

**Process:** Cycle 1 was informed by consumer and health professional feedback on gaps in prostate cancer survivorship care. Cycle 2 saw the development and testing of a draft SCP, aligned with the Prostate Cancer Survivorship Essentials Framework [1], in an Australian national specialist nursing network over 6 months. In Cycle 3 the updated SCP was trialled nationally across the PCSN network over 12 months.

**Outcomes:** In Cycle 1, consumers ( $n = 50$ ) reported the absence of a patient-driven, tailorabile, prostate cancer specific survivorship planning resource was contributing to fragmented care-coordination and poor survivorship experiences. Prostate cancer specialist nurses (PCSN) ( $n = 43$ ) reported a need for an evidence-informed resource based on a best-practice framework which provided a structured prompt for survivorship care planning for clinical practice. A draft SCP was developed based on Cycle 1. Cycle 2 involved 26 PCSNs who completed 151 SCPs (mean 10.8,  $\pm 9.5$ ) in the trial period. SCP acceptability was high ( $16.7/20 \pm 2.0$ ) and key changes related to inclusion of a dedicated section for recording PSA results, and an auto-populated health professional summary (Version 2). Cycle 3 ( $n = 104$

saw the re-ordering of sections to better align with workflow and dedicated prompts for distress screening and provision of stepped psychological care. The plan was made available via a publicly accessible website. Recurring feedback that patients were not always comfortable with the term 'survivorship' led to a name change ('My Wellbeing Plan') and corresponding change of terminology across the plan.

**What was learned:** A participatory action research method was critical for the robust development, evolution and implementation of 'My Wellbeing Plan'. Extensive ongoing input from consumers and health professionals has resulted in a readily accessible, fit-for-purpose care plan that is clinically relevant, and highly acceptable to men at any point of the prostate cancer trajectory.

#### References.

Dunn J et al. <https://doi.org/10.1111/bju.15159>.

Speaker: N. Heneka

Theme: 6. People living with cancer

Topic: Cancer and well-being/physical activity/quality of life

#### 000615 | Amazons in Mali? Women's experiences of breast cancer and gender (re)negotiation

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**Background:** Breast cancer is the second most common cancer, with more than 2.31 million cases diagnosed worldwide in 2022. Cancer medicine subjects the body to invasive procedures in the hope of offering a chance of recovery. In the course of treatment, the body is pricked, burned, incised and amputated, sometimes shattering identity and often changing the way women perceive the world. In sub-Saharan Africa, incidence rates are steadily increasing and women are particularly young when they develop breast cancer. Despite this alarming situation, the scientific literature on breast cancer in sub-Saharan Africa is poor and largely dominated by medical literature.

**Aim:** Using a qualitative approach and a theoretical framework at the intersection of the sociology of gender and the sociology of the body, we explore the discourse strategies of women with breast cancer in Mali regarding their relationship to the body and to others.

**Methods:** Based on 25 semi-directive interviews, we analyse the experiences of these women. Using the image of the Amazon woman, whose struggle has challenged gender because of its masculine attributes, we explore whether these women's fight against their breast cancer could be an opportunity to renegotiate gender relations.

**Results:** The experience of these women is characterised by the deconstruction of their bodies, pain and suffering. The masculinisation of their bodies and their inability to perform certain typically female functions in society (such as cooking or sexuality) challenges their female identity.

**Conclusion:** The resistance observed through the sorority, discreet mobilisation and display of their bodies does not seem to be part of a

renegotiation of gender relations, but it does play an active role in women's acceptance of the disease and their reconstruction.

**Speaker:** C. Schantz

**Theme:** 6. People living with cancer

**Topic:** Patient and family experience

#### 000687 | Roadmap to reducing financial toxicity experienced by people affected by cancer in Australia

Varlow M. \* (1); Chan R. (2); Cosa Financial Toxicity Working Group (3)

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**Background and context:** Financial toxicity is “the negative patient-level impact of the cost of cancer. It is the combined impact of direct out-of-pocket costs and indirect costs and the changing financial circumstances of an individual and their household due to cancer, its diagnosis, treatment, survivorship and palliation, causing both physical and psychological harms, affecting decisions which can lead to suboptimal cancer outcomes.” The Clinical Oncology Society of Australia (COSA) Financial Toxicity Working Group undertook a consultative process to develop the *Roadmap to Reducing Financial Toxicity Experienced by People Affected by Cancer*.

**Aim:** To identify and implement initiatives across the cancer care ecosystem, that reduce, and ultimately eliminate, financial stress from decisions regarding access to optimal treatment and care.

**Strategy/tactics:** Reducing the financial impact of cancer involves the multidisciplinary cancer community. The need for a comprehensive and collaborative approach to reducing financial toxicity in cancer care was a key outcome identified by the National Think Tank on Financial Toxicity in Cancer Care hosted by the COSA Financial Toxicity Working Group in May 2023.

**Programme/Policy:** The COSA Financial Toxicity Working Group developed the Roadmap to promote efforts from within and beyond the cancer sector to most effectively address financial toxicity over time.

**Process:** A draft Roadmap was developed by the Working Group, which was further co-developed with stakeholders at the COSA Annual Scientific Meeting (2023), and further revised in an iterative process within the Working Group to inform the final components of the Roadmap.

**Outcomes:** The Roadmap outlines short, medium and long-term national-level actions required to prevent, alleviate and manage financial toxicity in Australia. Areas of action are advocacy, cancer services delivery, information and support, work and financial protections, and research and translation into practice. Implementation of the Roadmap requires collaborative efforts across the cancer sector. The Roadmap was endorsed by COSA Council in March 2024.

**What was learned:** A coordinated, multi-faceted approach to address all action areas within the Roadmap will be key to minimising the

impacts of financial toxicity. The Roadmap aims to engage and motivate the cancer sector to participate in collaborative efforts toward this goal.

**Speaker:** M. Varlow

**Theme:** 6. People living with cancer

**Topic:** Cost of cancer

#### 000827 | Lived experience of a mother to a child with pediatric cancer by Jean Nabaasa from Uganda

Jean N. \* (1)

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**Background:** Pediatric cancer is a pressing concern worldwide, especially in low-income nations like Uganda. Despite strides in diagnosis and treatment, survival rates for children with cancer, along with their caregivers' quality of life, are often compromised. In Uganda, the number of pediatric cancer cases is rising, with around 7000 children affected. Shockingly, 70% of these children succumb to the disease annually, and 100 new cases are diagnosed each year across the country (Uganda Cancer Institute, 2024).

**Aim:** I am Jean Nabaasa, a mother of three children from Uganda. My advocacy in the World Cancer Congress stems from my personal journey as a caregiver to my daughter battling pediatric cancer for the past 4 years.

My daughter was diagnosed with bilateral Wilms' tumor in February 2020 at just over a year old. This diagnosis came at a challenging time financially, as most of our resources had already been spent on frequent hospital visits. Ugandan doctors recommended seeking further treatment in India due to the lack of a PET CT scan in our country, crucial for cancer diagnosis.

**Methods:** As a mother, I spared no effort in seeking support, even taking a loan of \$20,000 from my workplace to fund my daughter's treatment in India.

**Results:** While in India she underwent left nephroureterectomy and right partial nephrectomy in December 2020. Post-surgery chemotherapy was given for 6 months. In the year 2022, recurrence was detected, received treatment with ICE protocol chemotherapy till March 2023. She underwent right solidarity kidney-wilms tumour excision in May 2023 and is currently doing very well on adjuvant oral metronomic chemotherapy. During this journey life has not been the same as a mother with other family responsibilities including taking care of the financial issues. These have been coupled with physical burden, psychological torture, disruptions of family routines and social life, inadequate support and isolation and disease related stigma.

**Conclusion:** Through my experience, I realized the dire need for better-equipped healthcare facilities in Uganda, especially for early cancer detection and basic treatment, particularly for children. The existing public facilities are overwhelmed by the high volume of cancer cases, leaving many without adequate care, especially due to financial constraints.

I urge the partners at the World Cancer Congress to support my vision of establishing a well-equipped private healthcare facility focused on pediatric cancer care. This initiative aims to alleviate the burdens faced by families like mine and provide hope and access to treatment for those in need, ultimately reducing the devastating impact of cancer in Uganda.

#### References

Turyamureba M et al., 2019.

Speaker: N. Jean

Theme: 6. People living with cancer

Topic: Patient and family experience

#### 000889 | Evaluation of the stronger together peer mentoring model among breast and gynecologic cancer patients in Viet Nam

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 (2) Boston University, Boston, United States of America; (3) K National  
 Cancer Hospital, Hanoi, Vietnam; (4) New York University, New York,  
 United States of America

**Background:** Research has shown high levels of mental health and psychosocial concerns among cancer patients in Vietnam. Unfortunately, due to limited infrastructure and personnel resources, supportive services are sorely lacking, leaving these significant needs largely unmet.

**Aim:** To fill gaps in professional psychosocial and mental health support for women recently diagnosed with breast cancer or gynecologic cancers at 4 sites in Vietnam via a peer-to-peer support program, Stronger Together. The project focuses on providing emotional support, coupled with informational guidance provided by trained and supervised cancer survivor volunteers.

**Methods:** Eligible participants were women aged 25 years or older with a diagnosis of breast or gynecologic cancers receiving treatment at 4 participating hospitals. Exclusion criteria included a metastatic diagnosis or score of 7+ on the NCCN Distress Thermometer. Eligible participants were asked if they wished to receive peer support from a mentor (a cancer survivor) or usual care. Mentees were matched with mentors with similar characteristics (e.g., cancer diagnosis, age, etc). Surveys were administered at baseline (0), 2-, 4-, and 6-months and assessed depression, anxiety, stress, mental health and physical health components of quality of life (QOL), self-efficacy, and social support. We computed and compared 2-, 4-, and 6-month changes in scores from baseline and conducted difference-in-difference analyses to estimate the intervention effect at 6 months.

**Results:** The sample size included  $N = 186$  participants. Mentees ( $n = 91$ ) exhibited improvements in depression, anxiety, stress, and mental health QOL across all timepoints, while usual care participants ( $n = 95$ ) experienced these improvements at later periods (4- and 6-months). Compared to usual care participants, mentees reported greater improvements in depression at 2- and 4-months, mental health QOL at all timepoints, and self-efficacy and mean social

support at 4- and 6-months. Greater improvements in stress were also seen in the breast cancer subsample.

**Conclusion:** Stronger Together is a promising model to improve mental health and psychosocial outcomes among breast and gynecologic cancer patients in Viet Nam. Further testing of the model in other settings should be conducted, to help fill gaps in peer support interventions in LMICs or among culturally or linguistically diverse populations.

#### References

Jenkins C, Minh LN, Anh TT, Ngan TT, Tuan NT, Giang KB, et al. Breast cancer services in Vietnam: a scoping review. *Global Health Action*. 2018 Jan 1;11(1):1435344., Nguyen TQ, Do TM, Pham TA. Screening for Psychological Distress in Vietnamese Cancer Patients: An Evaluation of the Distress Thermometer. *Cancer Medicine*. 2021 Nov;10(21):7793–803.

Speaker: P. Le

Theme: 6. People living with cancer

Topic: Supportive care

#### 000913 | Adaptation of the ‘my personal plan’ prostate cancer survivorship care plan for generic use. SUppoRting PAatient-centred SurvivorShip (SURPASS) project

Fearn N. (1); Heneka N. \* (2); Dear, R. (1); Makroglou K. (1); Christie, L. (1); Krasovitsky M. (3); Chin, V. (1); Curran, L. (1); Lavee, O. (1); Chambers S. (4); Dunn J. (5)

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**Background:** “My Personal Plan” (MPP) is a survivorship care plan guided by the prostate cancer Survivorship Essentials Framework (SEF), developed and validated through a Delphi process, including consumers and clinicians in Australia<sup>1</sup>. While the SEF and MPP were developed for prostate cancer survivorship, the framework reflects key survivorship areas for all cancer types.

**Aim:** This multi-methods study aimed to explore the acceptability of the SEF and MPP for people with other cancer types to determine if MPP can translate for generic use.

**Methods:** Three phases were completed to adapt and evaluate a generic My Personal Plan. Cancer survivors and clinicians from three cancer groups (breast, lung cancer, and bone marrow transplant) were involved in all stages. Phase 1: an online survey to explore survivorship priorities and perceptions of the original SEF and MPP. Phase 2: interviews to further explore changes required to the MPP and barriers and enablers to implementation of MPP into clinical practice. Interviews were analysed to explore themes guided by the SEF domains and sections of the MPP. Changes were mapped to the Adaptome Framework<sup>2</sup> to inform the adaptations required. Phase 3: Member checking and evaluation of the new generic MPP using the

Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), & Feasibility of Intervention Measure<sup>3</sup>.

**Results:** A sample size of 11 clinicians and 22 cancer survivors were involved across the three phases, allowing in-depth insights and understanding of MPP acceptability and feasibility. No changes were required to the SEF. Changes required to MPP included: (1) chronological reporting of treatment history, (2) medication and appointment information sections removed, (3) broadening of the problem checklist, (4) information for support services needs to be cancer type specific, (5) broadening of survivorship interventions and referral prompts. Cancer survivors supported the use of MPP to improve survivorship navigation and improve awareness, and access to support and information. Clinicians and cancer survivors agreed that the generic MPP was acceptable (AIM) and appropriate (IAM), however feasibility of implementation (FIM) was rated lower indicating implementation challenges.

**Conclusion:** Acceptability of the Essentials Framework was high, based on feedback from clinicians and cancer survivors from three cancer groups. Changes to My Personal Plan were required to meet the needs of varied cancer types. Cancer survivors expressed desire for survivorship care plan use but clinicians identified barriers for implementation.

#### References

- 1.Dunn J, Green A, Ralph N, Newton RU, Kneebone A, Frydenberg M, Chambers SK. Prostate cancer survivorship essentials framework: guidelines for practitioners. *BJU international*. 2021;128:18–29.
- 2.Chambers DA, Norton WE. The Adaptome: Advancing the Science of Intervention Adaptation. *Am J Prev Med*. 2016;51(4 Suppl 2):S124-31.
- 3.Weiner BJ, Lewis CC, Stanick C, Powell BJ, Dorsey CN, Clary AS, et al. Psychometric assessment of three newly developed implementation outcome measures. *Implementation Science*. 2017;12(1):108.

Speaker: N. Heneka

Theme: 6. People living with cancer

Topic: Survivorship and rehabilitation

#### 001006 | Prognostic impact of smoking cessation in head and neck cancer patients: A multicentric prospective study

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**Background:** Smoking cessation following a cancer diagnosis and treatment has been shown to improve survival in lung and kidney cancer patients, but its effect on prognosis of head and neck cancer (HNC) patients has not been quantified.

**Aim:** Here, we aimed to investigate the impact of smoking cessation after diagnosis on overall survival in HNC patients.

**Methods:** This study included 1298 patients who were diagnosed with HNC in the United Kingdom (Head and Neck 5000 study, recruitment: 2011–2014), and 4 countries in Latin America (Brazil, Argentina, Uruguay, and Colombia—Interchange study, recruitment: 2011–2017) who were all current smokers at diagnosis. Patients were interviewed at and after diagnosis and were followed up regularly. Overall survival was evaluated with Kaplan-Meier curves and time-dependent Cox proportional hazards regression models. Subgroup analyses were conducted based on cancer type, tumor stage and reported smoking intensity at recruitment.

**Results:** Overall, 571 deaths were recorded. The median survival time was 5.9 years. Post-diagnostic smoking cessation was associated with higher 3-year and 5-year survival rates compared to continued smoking [71.4% vs. 62.0% at 3 years; 61.0% vs. 50.6% at 5 years ( $p < 0.0001$ )]. Multivariable analysis showed that patients who quit smoking after diagnosis has significantly lower hazard of death compared to those who continued to smoke (HR = 0.67, 95% CI = 0.56–0.81). Stratified analyses revealed consistent survival benefits of post-cancer diagnosis smoking cessation across all subgroups, including mild-moderate smokers and heavy smokers, and patients who were diagnosed with early- and late-stage tumors.

**Conclusion:** Smoking cessation after an HNC diagnosis is associated with significantly improved survival. These findings underscore the importance of integrating post-diagnosis smoking cessation interventions into comprehensive cancer care for HNC patients.

Speaker: S. Virani

Theme: 6. People living with cancer

Topic: Cancer and well-being / physical activity /quality of life

#### 001022 | From a small caravan to a center of hope: The evolution of Barbara Nassar Association

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**Background and context:** Cancer presents a significant burden globally, with profound social and economic implications, particularly in low- and middle-income countries. In Lebanon, the challenges faced by cancer patients are exacerbated by economic crises and healthcare system shortfalls. Recognizing these issues, the Barbara Nassar Association (BNA) was founded to address the unmet needs of cancer patients and advocate for systemic change.

**Aim:** This abstract aims to highlight the multifaceted advocacy efforts undertaken by the BNA to improve cancer care and support in Lebanon. Through a comprehensive approach encompassing policy advocacy, program implementation, and community engagement, the association endeavors to alleviate the socio-economic impact of cancer and enhance the quality of life for patients and their families.

**Strategy/tactics:** The association employs various strategies, including providing free cancer medications and financial assistance, organizing screening campaigns, offering psychosocial support and educational workshops, advocating for policy reforms, and engaging in direct actions such as sit-ins to address systemic issues in medication distribution and allocation of funds for cancer medications.

**Programme/Policy:** BNA's advocacy journey involves engaging with policymakers, healthcare professionals, and the wider community to effect meaningful change. Through collaborative efforts, the association works to influence policy decisions, improve access to essential medications, and promote patient-centered care practices.

**Process:** The journey of the Barbara Nassar Association, from humble beginnings in a small caravan to the establishment of a comprehensive 4-storey cancer center, represents the realization of Barbara's vision and collective efforts. The launch of the center signifies a paradigm shift in cancer care delivery, emphasizing the importance of perseverance, strategic planning, and partnerships. The association's experience underscores the potential for grassroots initiatives to drive systemic transformation and improve cancer care worldwide.

**Outcomes:** The advocacy model and initiatives pioneered by the BNA demonstrate replicability potential in other contexts grappling with similar challenges in cancer care. It is by prioritizing community engagement, grassroots mobilization, and targeted advocacy campaigns, organizations can effectively address the unmet needs of cancer patients and drive systemic change at local and national levels.

**What was learned:** In conclusion, the BNA's journey serves as a testament to the transformative power of collective action in addressing the socio-economic impact of cancer and advancing equitable access to quality care. Through ongoing advocacy efforts and strategic partnerships, the association remains committed to empowering cancer patients and fostering positive change in Lebanon and beyond.

Speaker: H. Nassar

Theme: 6. People living with cancer

Topic: Patient and family support

#### 001067 | Leveraging health data science for insight into cancer patients' survival and informing survivorship policy

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**Background:** Advances in early detection and treatment have improved cancer survival rates. However, to further enhance patient outcomes, a comprehensive understanding of cancer and non-cancer mortality patterns and their comorbidities is critical. The integration of

big data in healthcare presents a promising opportunity to address these research inquiries.

**Aim:** This study aims to demonstrate the value of leveraging healthcare big data in understanding cancer patients' survival and health status.

**Methods:** Utilizing data from a population-based cancer registry linked with mortality data in Korea, we investigated causes of death among cancer patients, including cancer and competing non-cancer mortalities, and estimated competing risk survival probabilities. Comorbidity analysis was conducted using the Korean national health insurance claims big data.

**Results:** Cause of death analysis revealed elevated risks of suicide and cardiovascular death among cancer patients. Competing risks and comorbidity analysis unveiled distinct non-cancer mortality patterns, indicating that patients diagnosed with early-stage cancer and a good prognosis experienced elevated non-cancer mortality, which exceeds their cancer mortality, in their long-term survivorship. Conversely, patients with poor prognosis faced significant cancer mortality even a decade after diagnosis, often accompanied by multiple comorbidities.

**Conclusion:** Our findings underscore the importance of utilizing health data to inform cancer patient care and survivorship policy. As we navigate the challenges and opportunities of cancer big data, integrating these insights into healthcare policies may help improve patient outcomes and survivorship strategies.

Speaker: H. Cho

Theme: 6. People living with cancer

Topic: Epidemiology

#### 001135 | Creating and sustaining the BioCanRx-Cancer

**Stakeholder Alliance (CSA): A consortium of Canadian cancer charities and patient groups focused on cancer research, advocacy, and support for patients**

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**Background and context:** BioCanRx is 'Canada's Immunotherapy Network'. Our vision is to turn all cancers into curable diseases. We are a national not-for-profit bringing together scientists, clinicians, cancer stakeholders, academic institutions, NGOs and industry partners to accelerate the development of leading-edge immune oncology therapies for the benefit of patients. By investing in the translation of world-class technologies from the research lab into clinical trials, we increase access to novel immunotherapies. Early on in our mandate, BioCanRx created the Cancer Stakeholder Alliance (CSA), recognizing the critically important and powerful voice patients have in advancing cancer immunotherapies in Canada. Since inception, the CSA has grown from 52 cancer patient groups and non-government organizations (NGOs) working with BioCanRx on shared goals and objectives.

**Aim:** The aim of the CSA Engagement Plan was to establish a collaborative framework between BioCanRx and the CSA to achieve mutual

goals in cancer research, patient engagement, and information accessibility.

**Strategy/tactics:** The plan involved the creation of a Joint Action Plan based on CSA's Terms of Reference and joint areas of interest identified through surveys. Opportunities for collaboration were developed for each area of interest using an outcome-based approach.

**Programme/Policy:** The CSA Engagement Plan outlined the structure and activities of the CSA and its Working Group, focusing on facilitating dialogue between BioCanRx and the cancer community to guide research and policy initiatives.

**Process:** Events leading to the Joint Action Plan included the development of the CSA concept, confirmation of CSA interest, surveys, and prioritization of joint areas of interest. The plan was actualized through collaboration and operationalization with the CSA Working Group.

**Outcomes:** The Joint Action Plan addressed priority areas such as patient perspective in research, patient clinical trials information, and the Learning Institute, a bi-directional learning initiative between researchers and patients. Key outcomes included the creation of a new standard for communicating clinical trial information, forging connections and collaborations between the research community and stakeholders, and integrating the patient perspective in BioCanRx research projects.

**What was learned:** Lessons learned from the CSA Engagement Plan include the importance of iterative dialogue, collaborative decision-making, and addressing accessibility barriers in research communication. The plan's replicability potential lies in its adaptable framework for engaging diverse stakeholders in research initiatives and organizational governance.

Speaker: S. Michaud

Theme: 6. People living with cancer

Topic: Building and sustaining high quality partnerships with patients

#### 001314 | Using patient navigators in research studies to improve patient care and support leading to development of a comprehensive patient navigation tracking platform

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**Background and context:** Patient navigators identify barriers to care, improve resource sharing and service quality, increase patient satisfaction and enhance continuity of care. They serve as patient advocates, identify and resolve barriers to care and promote adherence to screening, diagnostic follow-up, treatment and other healthcare recommendations. These roles focused on cancer research have the potential to increase efficiency and affect patient outcomes.

**Aim:** Improve patient care management, facilitate equitable healthcare access and promote quality cancer care through research-focused oncology patient navigators.

**Strategy/tactics:** Incorporate trained culturally appropriate, oncology patient navigators (both licensed and unlicensed) as key staff into

cancer research studies. Develop a platform to facilitate patient management.

**Programme/Policy:** We have conducted multiple research studies over the past 30+ years that included well trained, culturally appropriate patient navigators. These studies focused on Indigenous and other diverse populations and addressed one or more phases of the cancer continuum (outreach and education through end-of-life). As these navigators were added as staff, grant outcomes were attained more efficiently, with greater community involvement and approvals resulting in increased participation and acceptance of cancer research.

**Process:** The process: (1) hire culturally appropriate patient navigators based in community and/or clinical settings, (2) train for both cancer care and cancer research, (3) integrate navigators into research roles, (4) incorporate comprehensive 360-degree feedback measures, (5) assess outcomes, and (6) develop a user friendly and accessible platform to improve cancer patient care and access.

**Outcomes:** NACI Care™ was created to improve patient care. It is a fully functional platform that addresses the entire cancer continuum, can be tailored to meet the needs and reporting requirements of all patient navigation programs, and can generate easy-to-understand reports for 35 recommended standardized navigation metrics. NACI Care™ includes 7500+ data fields allowing for customized and comprehensive patient-related data entry and tracking. It may be linked to electronic health records, interfaced with navigation programs in different locations and tailored for specific populations, cancer types, and program needs. Importantly, NACI Care™ can demonstrate the overall value of patient navigation to patients and health care.

**What was learned:** By including well-trained and culturally appropriate oncology patient navigators, research interventions and practices were more efficient, effective and acceptable to study participants. This led to the development of NACI Care™ that provides a framework for comprehensive cancer care and support interventions, a learning ladder for small or limited programs to expand their focus and facilitation of data gathering and analysis to support quality cancer patient care.

Speaker: L. Burhansstipanov

Theme: 6. People living with cancer

Topic: Quality of cancer care

#### 001356 | Evidence-based advocacy actions to change the inequalities in access to cancer care

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**Background and context:** In Brazil, depending on where you live or the access to healthcare system that you have, the clinical outcome of cancer treatment will be completely different. Changing this scenario of countless inequalities in access to cancer healthcare is our goal.

**Aim:** To develop evidence-based advocacy strategies related to access to cancer care in vulnerable populations, the first step was to conduct research with Brazilian slum residents.

**Strategy/tactics:** In 2023, a Brazilian cancer NGO, led unprecedented research “Perceptions and priorities of cancer among Brazilian slums residents,” conducted by the DataFavela Institute (January–August/2023). Our findings represent national data of 2963 respondents. Majority were public health system users (82%), black (81%), low income (81%), low education (91%), low adherence to routine exams (59%), and main gateway was primary care (55%). Most of them (83%) had previous contact with cancer, with perceptions linked to death, suffering and pain. In spite of understanding the importance of cancer prevention and diagnosis, slum residents faced barriers to accessing basic healthcare and their final request about cancer was having more campaigns and ways to access healthcare (81%).

**Programme/Policy:** The research brought a previously unexplored perspective: slums residents' perceptions regarding cancer. Given its novelty, it led the debate on social inequalities and cancer with several stakeholders. The Brazilian cancer NGO followed with advocacy actions to disseminate that to key decision-makers in oncology.

**Process:** This data was presented: at the 13th National Forum Oncoguia, to national media and to decision-makers from 4 Ministries, in an exclusive newspaper article; and in a debate in the House of Representatives. Data was used in a project developed by a state representative in São Paulo: “Week of Awareness and Prevention of cancer in communities/slums” and inspired the bill n° 803/2023, which creates an annual Cancer Prevention and Awareness Campaign for slums.

**Outcomes:** Developing evidence-based advocacy strategies demands integrated actions. The present strategy started from gathering data about a specific and vulnerable Brazilian population group (slum residents) using a quantitative research framework. Findings were presented to different stakeholders engaged in the oncological set: politicians, oncologists, pharma companies, patients, caregivers, healthcare team, academia.

**What was learned:** We experienced great acceptance of those data from stakeholders that were deeply touched by Brazilian slum residents' situation, and reinforced their commitment to work in their field of action towards reducing inequalities in access to cancer care. We remain committed to keeping the discussion about cancer care inequalities alive, always based on data and patient testimonials. Patients from our public system are waiting too much for healthcare, which brings them lots of sorrow. This set must change and we are working on that!

## References

Portal Oncoguia. Percepções e prioridades do câncer nas favelas brasileiras. 18/05/2023. Available from: <https://www.oncoguia.org.br/conteudo/percepcoes-e-prioridades-do-cancer-nas-favelas-brasileiras/16284/1093/>, accessed [04 April 2024]. Assembleia Legislativa do Estado de São Paulo. Projeto de Lei N° 803/2023. 15/05/2023. Available from: [https://www.al.sp.gov.br/spl/2023/05/Propositura/1000488903\\_1000626054\\_Propositura.pdf](https://www.al.sp.gov.br/spl/2023/05/Propositura/1000488903_1000626054_Propositura.pdf), accessed [04 April 2024]. ALESP. Assembleia Legislativa do Estado de São Paulo. Semana de Conscientização e Prevenção ao câncer nas comunidades será realizada em São Vicente. 22/08/2023. Available from: <https://www.al.sp.gov.br/noticia/?id=458,264#:~:text=Nas%20comunidades%2C%2011%25%20n%C3%A3o%20sabem,uma%20semana%20de%20alguma%20coisa.,> accessed [04 April 2024].

20semana%20de%20alguma%20coisa., accessed [04 April 2024]., G1-Globo.com.70% dos moradores de favelas do Brasil dizem ter menos acesso ao diagnóstico de câncer, aponta levantamento. 11/05/2023. Available from: <https://g1.globo.com/sp/sao-paulo/noticia/2023/05/11/70percent-dos-moradores-de-favelas-do-brasil-dizem-ter-menos-acesso-ao-diagnostico-de-cancer-aponta-levantamento.ghtml>, accessed [04 April 2024].

Speaker: L. Holtz

Theme: 6. People living with cancer

Topic: Inequities in cancer care

## 001364 | Revolutionizing survivorship care: partnering with patients to co-design an innovative model for whole-person healing aligned with oncology & primary care delivery

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(2) Polaris Global Health Solutions, Austin, United States of America;

(3) Polaris Global Health Solutions, LLC, Aliquippa, United States of America

**Background and context:** The US health system stifles survivorship care by neglecting non-revenue generating services, leading to suboptimal outcomes. Despite evolution in survivorship care, many cancer survivors don't access survivorship services; among those who do, 74% have unaddressed needs after active treatment ends (NCCS, 2022).

**Aim:** To fill gaps in US survivorship care, Kairos partnered with survivors to develop an evidence-based program for whole-person healing through cancer treatment & beyond.

**Strategy/tactics:** The model addresses cancer's proximal/distal psychological, emotional, physical & existential impacts through a 2-day in-person group retreat followed by 8–12 weeks of virtual education/engagement. The program builds a connected survivor community & drives long-term behavior change with group accountability.

**Programme/Policy:** Over 1 year, we partnered with 24 survivors to develop a new survivorship care model shaped by their lived experience & unmet needs. The pilot comprised: (A) 2-day in-person retreat to evaluate healing modalities—mindfulness based interventions, yoga, journaling, group discussion, nutrition coaching & healthy eating's impact on quality of life & social connectedness. (B) 3-h human-centered design workshop delving into survivorship, mapping challenges/gaps & crafting an ideal state survivorship care map.

**Process:** We conducted the intervention 3 × (6/2003–3/2024) with 7–9 participants aged 29–60. Pre-intervention & 4-month post-intervention surveys measured QOL, symptoms & self-efficacy. Additionally, participants did a qualitative survey post-intervention, sharing preferences & activity impact. Survivors identified 15+ care gaps & explored ways to address them.

**Outcomes:** The intervention: (A) reduced fears of recurrence & preoccupation with functional concerns & indicated positive changes in self-concept; (B) improved social connectedness. 86% agreed/strongly

agreed they felt seen & understood; 100% strongly agreed that they can implement 1+ new wellness/healing tool in daily life; 80% increase in confidence keeping emotional distress from interfering with life; 40% reduction in perception of cancer/Tx causing negative changes in self-concept; 60% increase in confidence keeping fatigue from interfering with life.

**What was learned:** A new model of survivorship care aligned with oncology/primary care delivery & builds on the modern wellness movement is needed. Survivorship can be delivered in the community leveraging in-person & virtual retreats, workshops, apps & community.

This intervention shows potential to transform survivorship care delivery & radically improve outcomes.

#### References

National Coalition for Cancer Survivorship. 2022 State of Cancer Survivorship Survey—NCCS—National Coalition for Cancer Survivorship. NCCS—National Coalition for Cancer Survivorship. Published December 1, 2023. <https://canceradvocacy.org/2022-state-of-cancer-survivorship-survey/>

Speaker: M. Payan

Theme: 6. People living with cancer

Topic: Survivorship and rehabilitation

Abdulkareem, T., 000217	Aston, R., 001400	Blami, D., 001221
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- Francois, U., 001331  
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