Design a system to track the implementation and outcomes of public health interventions, enabling policymakers to assess effectiveness and allocate resources accordingly.

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1 Introduction

In the field of public health, the implementation and evaluation of interventions are crucial steps in addressing pressing health challenges and improving population health outcomes. However, the effectiveness of these interventions and the allocation of resources to support them depend heavily on the ability to track their implementation and outcomes accurately. Therefore, the development of a robust system for monitoring and evaluating public health interventions is essential for policymakers to make informed decisions and optimize resource allocation.This introduction outlines the need for such a system, highlighting the challenges faced in monitoring and evaluating public health interventions, and proposes the key components and functionalities of the system. By providing policymakers with comprehensive data on the implementation process and the impact of interventions, this system aims to enhance accountability, facilitate evidence-based decision-making, and ultimately improve public health outcomes.

2 Literature Review

Public health leaders in Bangladesh face similar challenges to their counterparts globally, navigating complex landscapes influenced by limited resources, pressing health needs, and evolving research findings.A review of public health interventions from 1990–2010 in Bangladesh may reveal challenges similar to those faced in the U.S. regarding the implementation of Quality Improvement (QI) initiatives. Despite various types of QI interventions being identified, such as organization-wide, program-specific, and administrative approaches, establishing a direct correlation between these efforts and tangible

health outcomes remains a challenge. This highlights the critical need for further research to bridge the gap between QI activities, practice enhancements, and actual health impacts. Collecting and disseminating results from proven interventions are crucial to inform decision-making in Bangladesh's diverse public health systems.Similarly, investigations into research capacity and utilization among health policymakers in Bangladesh may uncover a disconnect between policymakers' reported capacity and their actual integration of research into Evidence-Informed Policymaking (EIPM). Despite expressing motivation and recognizing the value of research evidence in policymaking, policymakers may lack awareness of effective organizational tools and systems for research engagement. Addressing this gap requires systematic communication strategies within organizations, guidance for EIPM implementation, and fostering collaboration between policymakers and researchers. Qualitative research efforts utilizing frameworks such as SPIRIT Action could provide comprehensive insights into these dynamics.In the context of the global COVID-19 pandemic, Bangladesh, like many countries, has made significant strides in vaccine development. Innovative vaccine platforms such as SARS-CoV-2 virus-like particle (VLP) vaccines hold promise in inducing robust immune responses and providing protection against emerging variants. Longitudinal studies similar to the Optimise Study in Victoria, Australia, could provide invaluable insights into the multifaceted impacts of the pandemic in Bangladesh, spanning epidemiological, social, psychological, and behavioral domains. However, challenges such as non-representative sampling underscore the need for methodological rigor and diverse data collection strategies in Bangladesh.

2.1 Paper 1: Quality Improvement Interventions in Public Health Systems: A Systematic Review

Journal/Conference Rank: Q1
Publication Year: 2012
Reference: [?]

2.1.1 Summary

The collection of research papers presents a comprehensive overview of various aspects of public health, healthcare interventions, and technological advancements with potential implications for Bangladesh's healthcare landscape.Firstly, the importance of public health surveillance systems is emphasized, highlighting their crucial role in improving population health. This aligns with Bangladesh's ongoing efforts to monitor and control infectious diseases, especially in rural areas where healthcare access can be limited.Additionally, proposals for smartphone-based health management systems underscore the potential of technology to bridge gaps in healthcare access, particularly in rural Bangladesh. Such solutions could provide vital services to underserved communities and contribute to improving health outcomes. Moreover, the emphasis on public health interventions in combating emerging diseases resonates with Bangladesh's healthcare priorities, given its vulnerability to infectious disease outbreaks. Proactive measures are essential to mitigate risks and protect public health. Furthermore, insights into the opportunities and challenges of e-health and m-health initiatives are pertinent for Bangladesh's healthcare context, considering its rapid expansion of mobile phone coverage and ICT initiatives in healthcare.The research findings also underscore the importance of evidence-based interventions in addressing public health challenges, including

climate-related health risks. Robust interventions are crucial for mitigating these risks and safeguarding public health.

2.1.2 Software Architecture

The software architecture for managing public health quality improvement (QI) interventions encompasses several key components. It includes a data collection module to gather information from various sources such as electronic health records and surveys, feeding into a robust database management system designed to securely store and manage large volumes of data. An analysis and reporting engine conducts data analysis using statistical tools and machine learning algorithms, presenting findings through an intuitive user interface featuring dashboards and visualization tools for stakeholders. Security measures ensure data confidentiality and compliance with regulations like HIPAA, while integration interfaces facilitate interoperability with external systems. Scalability and performance optimization techniques support responsiveness and efficiency as data volume and analysis complexity increase, alongside metadata management to maintain data quality. A continuous improvement process, driven by feedback loops and governance mechanisms, ensures ongoing enhancement of QI interventions and adherence to regulatory and ethical standards.

Figure 1:

2.1.3 Data Parameters

The data parameters for the public health quality improvement (QI) software architecture encompass a wide range of variables. These include information related to QI interventions such as program-specific metrics, performance standards, and outcome measures. Additionally, data parameters cover public health system performance indicators, health outcomes, and predictors of health outcomes. Collected data may involve demographic information, service utilization patterns, and epidemiological data to contextualize QI efforts within specific population groups and public health contexts. The system must also capture metadata for data organization and description, ensuring consistency and quality across datasets. Security parameters include encryption, authentication credentials, and access control lists to protect sensitive health data. Integration interfaces facilitate data exchange with external systems such as electronic health records and public health databases, while compliance parameters ensure adherence to regulatory frameworks like HIPAA and ethical guidelines governing data use in public health research and practice.

2.1.4 Datasets Used

The datasets used in the public health quality improvement (QI) software architecture encompass a diverse array of sources. These datasets may include electronic health records (EHRs) containing patient demographics, medical history, and clinical outcomes, providing valuable insights into health service utilization patterns and patient outcomes. Additionally, public health databases may contribute epidemiological data, population health indicators, and program-specific metrics relevant to QI interventions. Surveys and questionnaires administered to healthcare providers, public health professionals, and

community members can capture subjective feedback and perceptions related to the effectiveness of QI initiatives and their impact on health outcomes. Administrative data from public health organizations and government agencies may offer information on resource allocation, program implementation, and policy changes, facilitating the evaluation of QI interventions within the broader public health system. Integration of these datasets enables comprehensive analysis and reporting, supporting evidence-based decision-making and continuous improvement efforts in public health practice..

2.1.5 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.2 Paper 2: Policymakers' Research Capacities, Engagement, and Use of Research in Public Health Policymaking

Journal/Conference Rank: A*
Publication Year: 2021
Reference: [?]

2.2.1 Summary

The study investigates how policymakers' research capacities influence the use of research in the health policy process in Denmark and identifies areas for capacity-building interventions. Using the Seeking, Engaging with, and Evaluation Research (SEER) methodology, the research reveals that while policymakers report having research capacity, its actual use in policymaking is limited. Factors such as organizational support, tools, and systems for research engagement play significant roles. Capacity-building interventions should focus on context-oriented, measurable, and sustainable approaches to develop individual and organizational competences for evidence-informed policymaking.

2.2.2 Software Architecture

The study employs the SPIRIT Action Framework to assess policymakers' research capacities and engagement with research. This framework facilitates understanding and defining weak areas in the health policy process concerning research use. Additionally, the study utilizes validated and reliable measures such as SEER to gather data. The software architecture likely involves data collection tools, possibly digital surveys or questionnaires, and analysis software for interpreting the gathered data.

2.2.3 Data Parameters

The data parameters used in analyzing policymakers' research capacity and engagement encompass various dimensions. These include measures of policymakers' perceptions and attitudes towards research, such as the value they place on using research evidence in policymaking, their confidence in their research skills and knowledge, and their awareness of organizational tools and systems for research engagement. Data also capture policymakers' actual research engagement actions, such as their participation in research projects, collaboration with researchers, and utilization of research evidence in different stages of the policymaking process. Additionally, data parameters include organizational

factors, such as the availability of tools and systems to support research engagement, the organizational culture regarding research use, and the extent of collaboration between policymakers and researchers. These data parameters provide insights into the barriers and facilitators of research utilization in public health policymaking, guiding the development of targeted capacity-building interventions and organizational strategies to promote evidence-informed policymaking.

2.2.4 Datasets Used

The datasets used in studying policymakers' research capacity and engagement encompass a variety of sources. These include survey data collected from policymakers working in public health organizations, governmental agencies, and non-governmental organizations involved in health policymaking in Denmark. The survey data capture policymakers' perceptions, attitudes, and experiences related to research engagement and utilization in policymaking processes. Additionally, qualitative data from interviews or focus group discussions with policymakers and stakeholders may provide deeper insights into the contextual factors influencing research capacity and engagement. Organizational data, such as policies, guidelines, and documentation related to research engagement initiatives and support systems, contribute to understanding the institutional landscape and readiness for evidence-informed policymaking. These datasets enable comprehensive analysis and evaluation of policymakers' research capacity and engagement, informing evidence-based strategies to enhance research utilization and improve population health outcomes through policymaking.

2.2.5 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.3 Paper 3: Human Nasal Epithelium Organoids for Assessing Neutralizing Antibodies to a Protective SARS-CoV-2 Virus-like Particle Vaccine

Journal/Conference Rank: A*
Publication Year: 2024
Reference: [?]

2.3.1 Summary

The study presented findings on the development and evaluation of a SARS-CoV-2 virus-like particle (VLP) vaccine as a potential strategy to combat COVID-19. It highlighted the need for next-generation vaccines capable of addressing emerging viral variants. The VLP vaccine comprised key structural proteins of SARS-CoV-2, including Spike (S), Envelope (E), and Membrane (M), aiming to induce broader and more sustained immune responses compared to existing mRNA vaccines. Experimental data demonstrated that the VLP vaccine successfully elicited neutralizing antibodies and virus-specific T-cell responses in mice, with the adjuvanted vaccine providing complete protection against live virus challenge. Furthermore, the study utilized air–liquid-interface (ALI)-differentiated human nasal epithelium (HNE) as an in vitro model to assess vaccine-induced neutralizing

antibody responses authentically. Results showed that immune sera from VLP-vaccinated mice completely neutralized SARS-CoV-2 virus infection in this model.

2.3.2 Data Parameters

Data parameters, on the other hand, involved specific measurements and parameters derived from the datasets mentioned earlier. For instance, data parameters included specifics of the genetic sequences used, cloning strategies employed, and titers of the viral vectors utilized during VLP production. In ELISA assays, data parameters encompassed measurements of antibody titers at different dilutions, absorbance values obtained from the assay, and the specificity of VLPs for spike and RBD proteins. Similarly, in TEM analysis, data parameters included morphometric analysis such as size, shape, and surface morphology observed in the TEM images of the VLPs. These data parameters provided crucial insights into the characteristics and functionality of the SARS-CoV-2 VLPs, contributing to the overall understanding of the vaccine candidate's efficacy and potential.

2.3.3 Datasets Used

In the study, various datasets were employed at different stages of experimentation and analysis. These datasets included genetic sequences of key SARS-CoV-2 structural proteins (S, E, M), details of viral vectors utilized for VLP production, and cloning data related to the genetic sequences. Additionally, datasets encompassed information on viral vector titers, purification methodologies employed to isolate the VLPs, and ELISA data confirming the presence of SARS-CoV-2 spike and receptor binding domain (RBD) on the purified VLPs. Furthermore, negative staining by transmission electron microscopy (TEM) provided datasets comprising TEM images of the VLPs for characterization purposes.

2.3.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.4 Paper 4: Priority populations' experiences of isolation, quarantine and distancing for COVID-19: protocol for a longitudinal cohort study (Optimise Study)

Journal/Conference Rank: A*
Publication Year: 2024
Reference: [?]

2.4.1 Summary

The Optimise Study, established in Victoria, Australia, in September 2020, aims to collect comprehensive data on epidemiological, social, psychological, and behavioral aspects related to COVID-19 from priority populations. Eligible participants, aged 18 years and above and residents of Victoria, are recruited through various channels, including social

media advertisements, flyers, and community organizations. To be eligible, participants must be willing to provide informed consent, have access to the internet or a phone for surveys, and meet specific inclusion criteria. Recruitment strategies were tailored to reach diverse linguistic and cultural backgrounds, including bilingual data collectors for Arabic, Mandarin, and Dinka-speaking communities. Additional efforts were made to prioritize individuals facing barriers such as low English or technological proficiency and recent immigrants. The study utilizes snowball sampling to recruit approximately 1000 participants and their social networks, focusing on priority groups at risk of COVID-19 infection or adverse outcomes. Seeds, selected from recent COVID-19 cases, close contacts, and high-risk populations, initiate the recruitment process by nominating key individuals in their social networks. Participants complete monthly quantitative surveys, daily diaries, and annual qualitative interviews to provide a comprehensive understanding of their experiences. Community engagement groups are also involved to review and interpret research findings, contributing to policy and practice recommendations. Snowball sampling allows for the recruitment of diverse individuals and their networks, enabling social network analysis to inform responses to COVID-19 and enhance pandemic preparedness.

2.4.2 Data Parameters

Data parameters include participant demographics such as age, gender, ethnicity, and language proficiency, as well as variables related to COVID-19, such as symptoms, testing history, vaccination status, and compliance with preventive measures. Psychological and behavioral parameters include measures of anxiety, depression, stress, coping strategies, adherence to government guidelines, and attitudes towards COVID-19 vaccination and public health policies. Social network data parameters capture the structure and dynamics of participants' social connections, including the number and strength of ties, communication patterns, and information flow within their networks. These datasets and parameters are instrumental in analyzing the impact of the pandemic on individuals and communities, informing public health interventions, and guiding future research and policy initiatives.

2.4.3 Datasets Used

The datasets used in the Optimise Study include epidemiological, social, psychological, and behavioral data collected from priority populations in Victoria, Australia. These datasets encompass a wide range of variables, including demographic information, COVID-19 exposure and infection status, social interactions, mental health indicators, and adherence to public health measures.

2.4.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.5 Paper 5: A systematic review of the impact of mandates on increasing vaccination, alleviating staff shortages and decreasing staff illness

Journal/Conference Rank: A*
Publication Year: 2024

Reference: [?]

2.5.1 Summary

The review examines the impact of COVID-19 vaccine mandates on healthcare workers (HCWs), focusing on vaccine uptake, infection rates, and staffing outcomes. Analyzing 15 studies from March 2020 to September 2023, it finds that mandates generally increase vaccine uptake, with minimal staffing disruptions in well-resourced areas. Limited evidence exists on infection reduction among HCWs. The findings emphasize the importance of tailored mandate approaches in healthcare settings, considering diverse HCW populations. Future research should explore long-term effects and broader public health implications.

2.5.2 Data Parameters

The Newcastle-Ottawa scales (NOS), a proven risk of bias assessment instrument, were applied as part of the data parameters in this investigation to assess the caliber of the included articles. Every observational study design (cohort, case-control, or cross-sectional) was accommodated by an adaptation of this assessment instrument. Based on three domains—participant selection, group comparability, and quality of outcome ascertainment process—the NOS rates each paper with a star rating. Articles on cohort studies are eligible to receive a maximum of nine stars, with four stars awarded for participant selection, two stars for comparability, and three stars for outcome evaluation.

2.5.3 Datasets Used

The datasets used in this study contain data from articles discovered using a systematic review process. These papers were accessed using the Covidence platform, and relevant data was gathered using a personalized data extraction template. The collection contains many aspects from each publication, such as the title, the nation or nations where the study was conducted, the contact details of the lead author, and other pertinent general information. Additional information gathered for each study includes the objective, study design, start and end dates, and funding source. The dataset also included details about the individuals, including the size and makeup of the population, the inclusion and exclusion standards, and the hiring procedure. Furthermore, details regarding the kind of vaccination requirement, comparators,

2.5.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.6 Paper 6: Scrutinizing The Rigorousness Of Government Interventions In Addressing Homelessness In Malaysia

Journal/Conference Rank: A*
Publication Year: 2019
Reference: [?]

2.6.1 Summary

The paper delves into the challenges faced by the Malaysian government in addressing homelessness and proposes several strategies to improve interventions. Firstly, it points out the need for the government to repeal outdated laws like the Destitute Persons Act and replace them with more humane and effective policies tailored specifically to address homelessness. This includes formulating a comprehensive National Policy on Homelessness that outlines clear objectives, strategies, programs, activities, and financial allocations.

Furthermore, the paper suggests that the government should collaborate with other ministries, government agencies, NGOs, and interested individuals to develop and implement short and long-term measures to alleviate homelessness. By working together, these stakeholders can provide a more holistic approach to tackling the issue. Additionally, the government is encouraged to look at successful models from countries like the United States and Canada, where initiatives such as providing housing subsidies have proven effective in reducing homelessness rates.

In summary, the paper emphasizes the importance of a coordinated and comprehensive approach by the government, involving policy reforms, collaboration with various stakeholders, and learning from successful international practices to effectively address homelessness in Malaysia.

2.6.2 Data Parameters

A variety of sources' datasets are utilised to comprehend homelessness in Malaysia. Data from government censuses provide information about the number and makeup of the homeless population. Research institutes and non-governmental organisations survey people on living situations, service accessibility, and the root causes of homelessness. Information on those requesting help can be found in administrative records from social welfare agencies and shelters. Data on programme outcomes and policy actions can be found in reports from pertinent agencies. Furthermore, the efficacy of interventions and lived experiences are clarified by qualitative data gathered from stakeholder focus groups and interviews. Together, these varied statistics provide insight into homelessness and help determine policy responses in Malaysia.

2.6.3 Datasets Used

Government census data, surveys carried out by NGOs or research institutions, administrative records from social welfare departments or homeless shelters, reports released by pertinent agencies, and qualitative data from focus groups or interviews are some examples of potential datasets that could be used to collect pertinent information on homelessness in Malaysia. When taken as a whole, these datasets would offer insights into the magnitude, nature, and dynamics of homelessness in Malaysia as well as the success of policies and programmes implemented by the government.

2.6.4 Paper Link

https://www.researchgate.net/publication/338595401$_{S}crutinizing_{T}he_{R}igorousness_{O}f_{G}overnment_{I}nte$

2.7 Paper 7:GOVERNMENT BUDGETS AND POVERTY REDUCTION IN DEVELOPING COUNTRIES: A SYSTEMATIC REVIEW OF THE ROLE OF SOCIAL WELFARE PROGRAMS AND THE CHALLENGES AHEAD

Journal/Conference Rank: A*
Publication Year: 2023
Reference: [?]

2.7.1 Summary

The paper talks about foreign aid, which means giving resources from one country to another to help with development and reduce poverty. It explains different kinds of aid, like giving money or offering knowledge and skills. It looks at why countries give aid, like helping poor countries grow their economies and improve living conditions. The paper also discusses the good things aid can do, such as building better infrastructure and providing healthcare and education. But it also talks about problems with aid, like making countries dependent on it and dealing with corruption.It looks at the countries that give the most aid, like the United States and European Union nations, as well as newer donors like China. It explains how aid is decided and given out, focusing on countries that need it the most, especially those in conflict.The paper talks about what's happening now with aid, like focusing on long-term goals and more help from private donors. It also talks about debates and challenges, such as when aid is given with conditions or how much say recipient governments should have.Finally, the paper says we need to work together better and come up with new ideas to make aid more effective. It ends by saying that aid can really change lives for the better, but we have to keep learning and trying new things to make it work well.

2.7.2 Data Parameters

List and describe the data parameters used in the paper.

2.7.3 Datasets Used

Describe the datasets used in the paper and their significance.

2.7.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.8 Paper 8: Making the Prevention of Homelessness a Priority: The Role of Social Innovation

Journal/Conference Rank: A*
Publication Year: 2020
Reference: [?]

2.8.1 Summary

The essay examines how Canada's solutions to homelessness have changed over time and links this development to the impact of neoliberal policies on social welfare and housing. Initially, emergency services like soup kitchens and shelters were the main focus of operations. Nonetheless, there has been a change in focus in recent years towards evidence-based programmes like Housing First, which offer stable housing. This strategy hasn't completely addressed the underlying causes of homelessness, despite some achievements. The critical need for a greater emphasis on prevention—focusing on vulnerable populations before they become homeless—is emphasised throughout the text. It draws attention to the negative consequences of neoliberal policies, such as the decrease in affordable housing and the escalating problems with housing affordability. The conversation also covers current government projects like the National Housing Strategy, which are meant to solve.

2.8.2 Data Parameters

The data parameters include a range of aspects that are important to comprehend and deal with homelessness. Quantitative metrics include the frequency and dispersion of homelessness, the demographics of the homeless population, and long-term trends are some examples of these criteria. Examining the underlying causes of homelessness, such as issues with housing affordability, economic inequality, and social welfare programmes, is another requirement of qualitative data criteria. For the purpose of evaluating the efficacy of programmes, data on government spending and policy actions pertaining to housing and homelessness are also essential. Monitoring the use of services by the homeless and the results of interventions—such as rates of employment and stable housing—also sheds light on the areas that need improvement and the efficacy of the programmes. Through the examination of these varied data factors, researchers, policymakers, and care providers can formulate evidence-based approaches to tackle homelessness,

2.8.3 Datasets Used

There is no explicit indication of the particular datasets utilised in the text that is provided. However, government census data, surveys from research institutions or non-governmental organisations (NGOs), administrative records from social welfare departments or homeless shelters, reports from pertinent agencies, and qualitative information from focus groups or interviews are some potential datasets that could be used to collect pertinent data on homelessness in Canada. When combined, these statistics would shed light on the scope, makeup, and dynamics of homelessness in Canada as well as the success of public policies and programmes.

2.8.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.9 Paper 9: Barriers and facilitators perceived by women while homeless and pregnant in accessing antenatal and or postnatal healthcare

Journal/Conference Rank: A*
Publication Year: 2020
Reference: [?]

2.9.1 Summary

The paper discusses the challenges faced by homeless pregnant women in accessing adequate healthcare during pregnancy, drawing insights from seven studies. It highlights several key barriers these women encounter, including the lack of personalized care, difficulties in meeting basic survival needs such as food and shelter, and struggles with substance abuse. Additionally, it underscores the importance of social support networks and relationships, albeit acknowledging the risks of violence within some partnerships. Despite these obstacles, some homeless pregnant women view pregnancy as an opportunity for positive change and hope to create better lives for themselves and their children.

Proposed solutions include improving the accessibility and personalization of healthcare services, enhancing support systems for homeless pregnant women and their families, and addressing underlying issues such as poverty and housing insecurity. The paper emphasizes the need for a comprehensive approach that recognizes the unique challenges faced by homeless pregnant women and provides the necessary support to help them navigate through pregnancy and beyond.

2.9.2 Data Parameters

Many variables related to the included studies were included in the data that was taken from the systematic review and synthesis. First, information was obtained on the study's characteristics, such as the locations and times of the investigations, as well as any particular results that were shared. This data provided insights into the time periods and geographic dispersion of the research projects. Second, participant demographics were looked at, including the average age of homeless women and their age range.

2.9.3 Datasets Used

The specific datasets used in the text that is provided are not specifically mentioned. Nonetheless, there are a number of potential datasets that could be used to gather relevant data on homelessness in Canada, including government census data, surveys from academic institutions or non-governmental organizations (NGOs), administrative records from social welfare departments or homeless shelters, reports from relevant agencies, and qualitative data from focus groups or interviews. When taken as a whole, these figures would provide insight on the nature, extent, and dynamics of homelessness in Canada as well as the effectiveness of government initiatives.

2.9.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.10 Paper 10: Costing the implementation of public health interventions in resource-limited settings: a conceptual framework

Journal/Conference Rank: A*
Publication Year: 2020
Reference: [?]

2.10.1 Summary

The paper addresses the often overlooked aspect of implementation costs in public health interventions, particularly in resource-limited settings where immediate affordability is crucial. It emphasizes that while interventions may appear financially feasible initially, their long-term sustainability and cost-effectiveness are frequently compromised. Through examples from various implementation phases, including design, initiation, and maintenance, the authors illustrate the diverse nature of costs involved. They highlight significant expenses in policy crafting, stakeholder engagement, infrastructure development, and ongoing maintenance, which can substantially influence overall cost-effectiveness. The paper stresses the importance of structured costing approaches, advocating for prospective planning and classification of costs by resource type and implementation phase. It suggests early involvement of health economists and detailed cost measurement to bridge the gap between research findings and practical implementation in resource-limited settings. By incorporating implementation costs into economic evaluations, the paper aims to achieve a more comprehensive understanding of intervention sustainability and cost-effectiveness.

2.10.2 Data Parameters

The offered article primarily focuses on the conceptual framework for evaluating the implementation costs of public health initiatives, with a special emphasis on resource-constrained contexts, when outlining data parameters. The framework divides implementation costs into three stages, each with related activities and factors to take into account: design, commencement, and maintenance. Implementation expenses might be incurred centrally (above-service or central costs) or at the delivery site (site-specific costs). Additionally, the contrast between expenditures associated with research and programmatic implementation is emphasized, highlighting the significance of prospective monitoring and classification. The application of this approach is demonstrated by case study examples, which also highlight the importance of taking implementation costs into account when conducting economic analyses and making decisions. Examples include HIV/AIDS and tuberculosis interventions.

2.10.3 Datasets Used

The article makes no reference of the particular datasets that were used for analysis. Rather, it concentrates on providing a conceptual framework—illustrated by case studies and examples from the body of current literature—for evaluating the implementation costs of public health interventions.

2.10.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.11 Paper 11: Evaluation of the influence on water consumption and water scarcity of different healthy diet scenarios

Journal/Conference Rank: A*
Publication Year: 2021
Reference: [?]

2.11.1 Summary

This research examines the importance of understanding the relationship between water and food production to ensure sustainable food production without using up all water resources. It investigates three dietary patterns: eating everything, only eating plants, and eating no animal products, analyzing their respective water requirements and impact on water scarcity. The findings reveal that diets containing meat require the most water, whereas plant-based diets demand less. However, addressing water scarcity involves complex factors beyond dietary choices. Therefore, the study proposes the implementation of regulations to promote water-saving dietary practices. Additionally, it advocates for considering local circumstances and trade dynamics to identify optimal strategies for sustainable food production with reduced water usage.

2.11.2 Data Parameters

The study explores the complex interrelationship between water and food production, highlighting the need to comprehend this link in order to accomplish sustainable food production without depleting essential water resources. The study carefully examines the three different dietary patterns—omnivorous (eating everything), vegetarian (eating only plants), and vegan (eating no animal products)—and how they affect water shortages. Revealing notable differences, the results highlight the fact that diets heavy in meat require the most water, whereas diets high in plant matter require relatively less water. Still, the study underscores that dealing with water scarcity requires tackling complex issues that go beyond dietary decisions. The study suggests that regulatory actions be taken to encourage water-saving dietary habits in response. Additionally, it highlights how crucial it is to take into

2.11.3 Datasets Used

The study examines the complex interaction between water and food production using a number of datasets with the goal of preserving valuable water resources while ensuring sustainable food systems. First, large databases that describe the amount of water needed for different food production processes are used. These databases shed light on the volume of water required for various agricultural processes, including crop irrigation, raising animals, and food processing. Subsequently, an extensive analysis is conducted on the eating patterns and consumption behaviors. This covers data on dietary preferences of people or groups, encompassing anything from omnivore diets to vegetarian and vegan lifestyles. The study illustrates the differing effects on water usage and scarcity by

comparing the water requirements of these various food patterns. Furthermore, datasets pertaining to indicators of water scarcity are essential.

2.11.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.12 Paper 12: Mental Health Problems and Associated Predictors Among Bangladeshi Students

Journal/Conference Rank: A*
Publication Year: 2019
Reference: [?]

2.12.1 Summary

This essay analyzes a study on common mental health problems that was carried out among Bangladeshi university students. The results show an alarming trend: a sizable fraction of students report serious emotional difficulties, such as tension, worry, and melancholy. The study, which included over 600 students from Jahangirnagar University, emphasizes how serious mental health issues are in this demographic. It shows that over half of the students said they were very unhappy (52.2

2.12.2 Data Parameters

A variety of behavioral and sociodemographic data were gathered from 590 undergraduate students at Bangladesh's Jahangirnagar University to comprise the study's data parameters. Age, gender, year of study, faculty of study, permanent location (city or hamlet), socioeconomic position (upper, middle, or lower class), and relationship status (single, in a relationship, or married) are examples of socio-demographic factors. In addition, behavioral indicators such the amount of time spent sleeping, the use of the internet, physical activity, and cigarette smoking were evaluated. Using the Bangla Depression Anxiety Stress Scale (DASS-21), a validated self-report tool, the study's main goal was to find out how common depression, anxiety, and stress were among the participants. These data characteristics included information about the state of mental health and related risk factors among

2.12.3 Datasets Used

The study's dataset consists of responses obtained from 590 Bangladeshi undergraduate students at Jahangirnagar University. A cross-sectional survey was used to gather data, and it was carried out from July to October of 2018. Numerous socio-demographic parameters, including age, gender, academic year, faculty, permanent residence, socioeconomic status, and relationship status, were included in the survey. In addition, behavioral metrics such as the amount of time spent sleeping, the usage of the internet, physical activity, and cigarette smoking were evaluated. The Bangla Depression Anxiety Stress Scale (DASS-21), a self-report tool with 21 items that gauge stress, anxiety, and depression, was the main tool used to evaluate mental health. The dataset, gathered by voluntary

and anonymous participation, provided the foundation for an analysis of the prevalence of mental

2.12.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.13 Paper 13: Reducing Water Scarcity by Reducing Food Loss and Waste

Journal/Conference Rank: A*
Publication Year: 2021
Reference: [?]

2.13.1 Summary

This paper discusses strategies for how we can help save water by not wasting food. It outlines how a significant amount of water is utilized in producing food that ultimately goes unused, exacerbating water scarcity issues. Food wastage occurs not only at the consumer level but also throughout its production, processing, and distribution stages. Different types of food contribute varying amounts to water wastage, with disparities existing between regions. For instance, grains are identified as the primary water wasters globally, whereas meat and dairy products contribute more significantly to water wastage in affluent nations. The paper suggests that we need better ways to measure how much food we waste and how it affects the water shortage. It also emphasizes the importance of educating individuals on the importance of minimizing food waste. Furthermore, the paper stresses the need to consider the broader environmental implications of food wastage, beyond solely water conservation efforts.

2.13.2 Data Parameters

The data characteristics used in this work include a thorough analysis of the connection between water shortage and consumption and food loss and waste (FLW). The literature review first explores previous research to determine whether reducing FLW can help alleviate water scarcity. These studies set the foundation for well-informed policy decisions by offering critical insights into the magnitude of FLW at various stages of the food supply chain and its significant impact on water resources. In addition, the study summarizes the current and suggested mitigation strategies for flood-related droughts (FLW) and examines the evidence that supports these strategies' effectiveness in lowering water demand and scarcity. Although a significant amount of research has quantified FLW's water footprint over time in a variety of supply chain regions and food groups,

2.13.3 Datasets Used

The datasets utilized in this paper offer a comprehensive understanding of the perplexing relationship between nourishment misfortune and squander (FLW) and water utilization and shortage. Firstly, worldwide FLW gauges give significant experiences into the size of nourishment wastage over different stages of the nourishment supply chain, from rural

generation to utilization. These datasets empower the measurement of yearly nourishment wastage and its suggestions for water assets. Furthermore, datasets on the water impression of nourishment generation shed light on the sum of water devoured in creating distinctive nourishment things, encouraging the calculation of water squandered due to uneaten nourishment.

2.13.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.14 Paper 14: Global Ethical Considerations Regarding Mandatory Vaccination in Children

Journal/Conference Rank: A*
Publication Year: 2021
Reference: [?]

2.14.1 Summary

The research paper talks about whether it's okay for children to be required to get vaccines, especially for COVID-19. It says this depends on if the vaccines are safe and work well, and also how serious the disease is for kids. For example, for diseases like the flu, vaccinating kids might be really helpful because they often spread it to others. The paper also says that if there's a big problem like the COVID-19 pandemic, then making vaccines mandatory might be more justified. But it's important to be careful and make sure the rules are fair and not too strict. The paper also talks about giving rewards to encourage people to get vaccinated, which might be a better idea than making it mandatory. Overall, it's about finding the right balance between keeping people healthy and respecting their rights.

2.14.2 Data Parameters

The study's data characteristics cover a wide variety of behavioral and sociodemographic variables that are important to comprehending the prevalence and risk factors of mental health issues among Bangladeshi undergraduate students. These factors include things like age, gender, year of study, faculty of study, permanent residence (rural or urban), relationship status, socioeconomic position, status as a smoker, amount of physical activity, amount of sleep, and habits related to using the internet. The Bangla Depression Anxiety Stress Scale (DASS-21) is another tool used in the study to measure participant levels of stress, anxiety, and depression. Scores ranging from moderate to highly severe indicate mental health problems.

2.14.3 Datasets Used

The study's data characteristics cover a wide variety of behavioral and sociodemographic variables that are important to comprehending the prevalence and risk factors of mental health issues among Bangladeshi undergraduate students. These factors include things like age, gender, year of study, faculty of study, permanent residence (rural or urban),

relationship status, socioeconomic position, status as a smoker, amount of physical activity, amount of sleep, and habits related to using the internet. The Bangla Depression Anxiety Stress Scale (DASS-21) is another tool used in the study to measure participant levels of stress, anxiety, and depression. Scores ranging from moderate to highly severe indicate mental health problems.

2.14.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.15 Paper 15: Uptake of vaccination in pregnancy

Journal/Conference Rank: A*
Publication Year: 2021
Reference: [?]

2.15.1 Summary

The study looks at how pregnant women are getting vaccines to protect themselves and their babies from certain infections. It found that giving vaccines during pregnancy can help moms pass on antibodies to their babies, keeping them safe. Some countries now offer vaccines to pregnant women as part of regular healthcare. The most common vaccines given during pregnancy are for diseases like whooping cough and the flu. However, not all pregnant women are getting these vaccines. Some worry about side effects, while others don't realize how important they are. Doctors also need to feel confident about recommending vaccines to pregnant women. Overall, more efforts are needed to ensure all pregnant women can easily get the vaccines they need to stay healthy.

2.15.2 Data Parameters

Several important indicators and metrics are included in the data parameters used to evaluate the efficacy and safety of prenatal pertussis immunization programs. These include rates of vaccination uptake among expectant mothers, prevalence of pertussis in babies younger than three months of age, rates of hospitalization and death from pertussis in babies, and unfavorable reactions to mother vaccinations. Furthermore, factors that are crucial for assessing vaccine efficacy and immunogenicity include the transmission of maternal antibodies to offspring, antibody concentrations in cord blood, and the immunological responses of the immunized newborn. The demographics of pregnant women who had vaccinations, the timing of the vaccine relative to gestation, and any confounding factors that might have an impact on the results are possible additional parameters. These data characteristics are essential for tracking vaccination program effects, seeing patterns, evaluating the efficacy of the program, and guiding policy.

2.15.3 Datasets Used

The majority of the information about the prenatal pertussis vaccination program's efficacy in reducing neonatal morbidity and mortality comes from analyses of vaccine coverage rates and observational cohort studies. Large-scale datasets from population-based surveys, clinical practice research databanks, and national health databases are frequently

used in these investigations. For example, research by Donegan et al. and Amirthalingam et al. used information from clinical records and national health databases, respectively, to assess the safety and effectiveness of the pertussis immunization during pregnancy. Moreover, Munoz et al. and other researchers used prospective observational studies involving expectant mothers and their babies to examine the immunogenicity, safety, and best time for maternal pertussis vaccine. Furthermore, routine vaccination data gathered by national health agencies is frequently used to evaluate vaccine coverage rates and trends.

2.15.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.16 Paper 16: Public Health Surveillance Systems: Recent Advances in Their Use and Evaluation

Journal/Conference Rank: A*
Publication Year: 2016
Reference: [?]

2.16.1 Summary

Provide a brief summary of the paper.

This article emphasizes the critical role public health monitoring systems play in enhancing population health by providing a thorough overview of these systems. It talks about how the field of public health is changing, how scientific discoveries have affected healthcare settings, and how technological improvements have affected the creation and application of monitoring systems. The review explores the philosophical underpinnings of surveillance systems, their purposes, and how well they correspond with the objectives of public health. It also emphasizes how surveillance is becoming more and more focused on different health outcomes and factors in addition to infectious diseases. The paper also highlights the significance of assessing surveillance systems and makes recommendations for potential future developments, stressing the necessity of thorough assessment, data-driven decision-making, and the integration of informatics to improve system efficacy and efficiency. In general, the paper emphasizes the crucial importance

2.16.2 Data Parameters

The authors of this paper examine how vital public health surveillance systems are to enhancing population health. In their discussion of the meaning of monitoring and surveillance systems, they place special emphasis on the continuous, methodical gathering, processing, and interpretation of health data that is necessary for the practice of public health. Effective surveillance can be carried out by public health practitioners thanks to the many procedures and parts that comprise surveillance systems. The authors stress how crucial it is to match surveillance goals with system architecture in order to guarantee reliable data collection and utilization for public health decision-making. They stress that data management, collection, analysis, integration, distribution, security, and privacy are all guided by the aims of surveillance. The article also shows how surveillance

systems are being used to track a variety of health outcomes and factors, such as chronic illnesses, injuries, mental health issues, and more, in addition to infectious diseases.

2.16.3 Datasets Used

In the article, various datasets are utilized to illustrate the function and impact of public health surveillance systems. These datasets encompass a wide range of health-related information, including but not limited to acute flaccid paralysis surveillance data, state-based child body mass index (BMI) surveillance data, gonococcal isolate surveillance data, post-licensure rapid immunization safety monitoring data, and syndromic surveillance system data monitoring over-the-counter pharmacy sales. Additionally, other datasets used for epidemiologic research and evaluation of public health interventions are discussed, such as those from Major League Baseball's Health and Injury Tracking System (HITS) and surveillance systems monitoring rotavirus vaccination impact in Belgium. These datasets serve as empirical evidence to support the various objectives and functions of surveillance systems in public health practice, ranging from guiding immediate action for public health threats to evaluating the effectiveness of preventive measures and informing policy development. Through the analysis and interpretation of these datasets, the article underscores the significance of robust surveillance systems in facilitating evidence-based decision-making and improving population health outcomes.

2.16.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.17 Paper 17: Smart Health Management System for Rural Area of Bangladesh Utilizing Smartphone and NID

Journal/Conference Rank: A*
Publication Year: 2017
Reference: [?]

2.17.1 Summary

The study addresses the difficulties the Bangladeshi healthcare system faces in rural areas and suggests a smartphone-based remedy to enhance health management. It draws attention to the inadequate medical supplies and restricted access to healthcare that rural populations face, which is made worse by the dearth of reasonably priced private healthcare options. The proposed system intends to use information and communication technology (ICT) to give rural communities easy access to health services. Smartphone users can access a variety of healthcare services, including as professional guidance, hospital information, ambulance services, and medical suggestions, by using their NID numbers for authentication. In order to improve health outcomes for Bangladesh's rural population, the article highlights how mobile technology can close the access gap to healthcare between urban and rural areas.

2.17.2 Data Parameters

With a special focus on rural areas, the data characteristics presented in this study offer a thorough overview of Bangladesh's healthcare system. The criteria include information on healthcare spending, which shows that the government only pays for 34 of all healthcare spending, with only around 3 of GDP going toward health services. The data also show how unequal access to healthcare is, with a large concentration of medical experts and state-of-the-art facilities in metropolitan regions, undermining the needs of rural communities. In addition, data on the predominance of informal healthcare providers in rural regions are presented in the article, showing that about 75 of rural residents depend on them for medical care. The study also addresses how mobile phones can facilitate better access to healthcare, citing studies that

2.17.3 Datasets Used

The statistics used in this study offer a thorough analysis of Bangladesh's healthcare system with an emphasis on rural areas and the potential contribution of mobile technology to increased access to healthcare. The figures contain statistics on healthcare spending, which show that in Bangladesh, health services receive barely 3 of GDP, with government spending accounting for only 34 of all healthcare spending. Furthermore, the numbers show how common informal healthcare providers are in rural areas, where about 75 of the population receives their medical care from them. The figures also show data on Bangladesh's rapidly increasing mobile phone user base, with about 130 million people having internet access.

2.17.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.18 Paper 18: Public health interventions in the control of emerging diseases

Journal/Conference Rank: A*
Publication Year: 2023
Reference: [?]

2.18.1 Summary

The paper offers a thorough examination of the growing risk that emerging illnesses pose as a result of numerous variables such shifting climatic conditions, changing human behavior, and rising air travel. It highlights the role that public health initiatives—which center on immunization, nutritional interventions, cleanliness and hygiene, and health awareness—will play in lessening this threat. An example of the efficacy of these approaches is the use of quarantine measures to suppress COVID-19. In order to effectively address emerging diseases, the paper also covers the necessity for interdisciplinary research and a strong public health infrastructure. All things considered, it emphasizes how urgent it is to launch concerted efforts to address this worldwide health crisis.

2.18.2 Data Parameters

Several important data parameters concerning newly and re-emerging diseases and the public health measures meant to control them are included in the book. It draws attention to the elements that are causing infectious diseases to become more prevalent, including urbanization, climate change, and antibiotic resistance. It highlights how many infectious illnesses have zoonotic origins and how viruses are disproportionately represented among newly emerging pathogens. The article describes several public health treatments, such as health awareness campaigns, isolation, quarantine, immunization, dietary intervention, and hygiene and sanitation measures. It talks about current research initiatives to create vaccines against newly developing viruses as well as the function of vaccinations in illness prevention. It also emphasizes the significance of isolation and quarantine procedures, hygienic and sanitation standards, and nutritional treatments in preventing the spread of disease. Additionally, the wording highlights the

2.18.3 Datasets Used

Datasets based on predetermined standards, or offer advice on how to generate or acquire datasets for studies.

2.18.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.19 Paper 19: E and M Health in Bangladesh: Opportunities and Challenges

Journal/Conference Rank: A*
Publication Year: 2014
Reference: [?]

2.19.1 Summary

The impact of information and communication technologies (ICTs), especially mobile phones, on Bangladesh's health system development is covered in the paper. It draws attention to how ICTs might facilitate better access to health information and services, particularly in remote locations where access to qualified medical personnel is scarce. The paper describes how ICTs have developed in Bangladesh, highlighting the quick expansion of mobile phone coverage as well as the rise of e-health and m-health programs.Bangladesh's health system is characterized as pluralistic, with a range of services provided by public institutions, commercial companies, and unofficial providers. Even with notable advancements in lowering death rates, issues including inadequate access to medical professionals and drug abuse continue to exist. The paper examines how ICTs might help with these issues, using instances from the health

2.19.2 Data Parameters

Information and communication technologies (ICTs) and their impact on Bangladesh's health system are the main topics of discussion in this publication, which covers many facets of e-health and m-health projects in the nation. The history of Bangladesh's

healthcare system, the quick expansion of cell phone coverage, public and private sector e-health and m-health initiatives, and collaborations with service providers are all covered. The use of ICTs to improve access to healthcare services is highlighted in the book, along with its benefits and limitations. Examples of these include SMS-based health campaigns, telemedicine, online health information portals, and the use of mobile phones for health advice. The importance of regulatory frameworks in guaranteeing the morality and caliber of m-health and e-health services is also covered. Overall, the book offers insights on how the delivery of healthcare is changing in

2.19.3 Datasets Used

The text presents a comprehensive analysis of e-health and m-health initiatives in Bangladesh, drawing upon various sources of information and datasets to support its discussion. While specific datasets are not explicitly mentioned, the content appears to be informed by a combination of primary research, government reports, academic literature, and organizational publications. For instance, it references background information on Bangladesh's health system from sources such as the Bangladesh Bureau of Statistics and the Ministry of Health and Family Welfare. Additionally, the discussion on mobile phone coverage and usage patterns seems to rely on data from the World Health Organization (WHO) and the Bangladesh Demographic and Health Surveys. Moreover, insights into specific e-health and m-health initiatives are likely derived from reports and studies conducted by relevant organizations, NGOs, and academic institutions involved in healthcare and technology sectors within Bangladesh. Overall, the text demonstrates a multidimensional understanding of the topic, integrating insights from various datasets and sources to provide a comprehensive overview of the subject matter.

2.19.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.20 Paper 20:The Effectiveness of Public Health Interventions to Reduce the Health Impact of Climate Change: A Systematic Review of Systematic Reviews

Journal/Conference Rank: A*
Publication Year:2013
Reference: [?]

2.20.1 Summary

The purpose of this study was to assess how well public health interventions work to lower the disease burden of high-priority, climate-sensitive illnesses. 33 systematic studies covering various therapies for diseases like cholera, dengue, heat stress, leishmaniasis, Lyme disease, malaria, tick-borne encephalitis, and waterborne infections were included as a result of a thorough search across many databases.The GRADE technique, which takes into account variables like publication bias, risk of bias, imprecision, inconsistency, and indirectness of evidence, was used to evaluate the quality of evidence for these therapies. Because of the poor study design and substantial variability in several of the included studies, the evidence base was determined to be largely inadequate overall. Furthermore,

no adequate systematic reviews were discovered for a number of important topics, such as cyanobacteria, Chikungunya, Crimean-Congo hemorrhagic fever,

2.20.2 Data Parameters

The systematic review discussed in the text utilized various data parameters to evaluate the effectiveness of public health interventions in mitigating the health impacts of climate-sensitive diseases. These parameters included disease outcomes such as disease incidence, prevalence, and clinical manifestations related to vector-borne diseases, waterborne diseases, and the effects of extreme weather events. Additionally, entomological indices for mosquito-borne diseases were considered as health-related outcome measures. The review encompassed systematic reviews retrieved from multiple databases, including Ovid MEDLINE, ISI Web of Knowledge, Cochrane CENTRAL, and SCOPUS. It employed a comprehensive search strategy with no restrictions on language or publication year, aiming to gather relevant literature up to December 2010. The data extraction process involved assessing titles, abstracts, and full texts independently by two reviewers, using standardized forms. Quality of evidence was evaluated using the GRADE method, which considers criteria such as risk of bias, imprecision, inconsistency, indirectness of evidence, and publication bias. Through the analysis of these data parameters, the review aimed to provide valuable insights into the effectiveness of public health interventions in addressing the health impacts of climate change, facilitating evidence-based decision-making in public health policy and practice.

2.20.3 Datasets Used

In particular, the article focuses on vector-borne diseases, waterborne infections, and the consequences of extreme weather events. It also outlines a systematic review that was carried out to assess the efficacy of public health measures in mitigating the health implications of climate-sensitive diseases. The information utilized in this review was taken from the ISI Web of Knowledge, Ovid MEDLINE, Cochrane CENTRAL, and SCOPUS databases. The review did not impose any limitations on language or publication year, and it covered systematic reviews from these databases up until December 2010. Reference lists from acquired articles were also checked for more pertinent reviews. A total of 33 systematic studies covering different therapies and illness outcomes associated to climate-sensitive health hazards were found and evaluated by the review using this extensive search methodology. Standardized forms were utilized to extract the data, and

2.20.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

2.21 Paper 21: Knowledge translation strategies to improve the use of evidence in public health decision making in local government: intervention design and implementation plan

Journal/Conference Rank: A*
Publication Year: 2013
Reference: [?]

2.21.1 Summary

In local government (LG) contexts, the article outlines the design and implementation strategy for a knowledge translation (KT) intervention that aims to improve evidence-informed decision-making (EIDM) in public health, with a special focus on obesity prevention. The Knowledge Translation for Local Government (KT4LG) intervention was created using the results of four exploratory research studies. a scoping assessment of the literature on KT in the domains of public health and allied fields, identifying different KT tactics, facilitators, and obstacles. a thorough analysis of the efficacy of KT interventions that emphasizes the paucity of data and the demand for customized strategies. The EviDenT survey was carried out among LGs in Victoria with the aim of determining the organizational culture, skills, abilities, and confidence linked to EIDM, along with potential knowledge transfer methodologies recommended by the respondents. A qualitative investigation using interviews to examine LGs' decision-making procedures, finding

2.21.2 Data Parameters

The use of many data factors in the planning and execution of a knowledge translation (KT) intervention to improve evidence-based decision-making in local government public health contexts is covered in the book. These specifications originate from four exploratory investigations. First, a thorough analysis of the literature was conducted to identify the most effective knowledge transfer (KT) procedures. The analysis focused on the value of networking, skill development, and access to knowledge brokers in exchanging information. Second, in order to fill in the gaps in the literature about public health decision-making in local government contexts, a scoping study examined theoretical frameworks relevant to KT. Thirdly, information was gathered on aspects including organizational culture, confidence in applying evidence, and access to evidence through a survey of the public health staff employed by the local government. Lastly, a qualitative study investigated how Victorian local governments make decisions.

2.21.3 Datasets Used

The text draws upon four main datasets to inform the design and implementation of a knowledge translation (KT) intervention for public health decision-making in local government settings. These datasets include a systematic review of existing literature on KT strategies, a scoping study exploring theoretical frameworks relevant to KT, a survey of the local government public health workforce, and a qualitative study examining decision-making processes within Victorian local governments. Each dataset provides unique insights into factors such as effective KT strategies, barriers to evidence use, organizational culture, and decision-making contexts. By synthesizing findings from these datasets, the intervention aims to address key challenges and enhance evidence-informed decision-making practices within local government public health contexts.

2.21.4 Paper Link

Access the full paper at http://www.example.com/jse/vol15/issue3/paper1.pdf.

3 System Design

System Design:- Rich Picture,

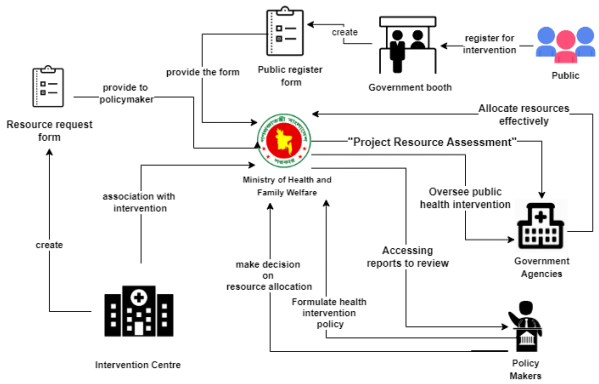


Figure 3: as is rich picture

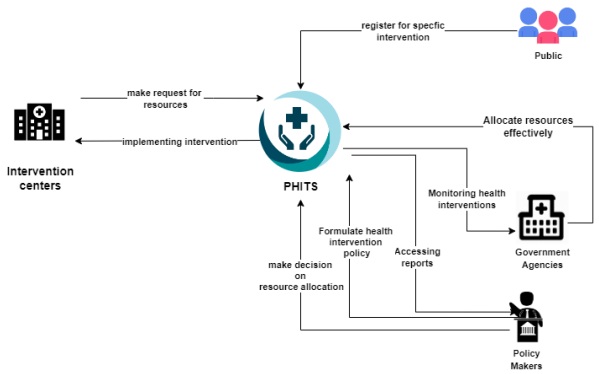


Figure 4: To be rich picture

ERD, Relation Schema, Normalized Schema, Data Dictionary. Intro about what is below:

This is an existing system that is being used to collect data for public health intervention. All the information from public health officials, data analysts, researchers, Ngos are provided to the ministry of health and family welfare and after that informations are provided to Government agencies, policy makers so that necessay steps are taken to improve quality and to develop the overoll system.

The rich picture depicts the intricate ecosystem of managing public health interventions, showcasing the diverse entities, relationships, and interactions within the system. Entities:

* Public Health Official: Illustrated as a central figure representing authority and leadership in initiating and overseeing interventions. They are depicted with a name tag, title, and organizational affiliation to highlight their pivotal role.

* Intervention: Represented by a vibrant icon symbolizing action and initiative. Each intervention is uniquely named and depicted with a brief description, start and end dates, and a budget allocated to it.

* Stakeholder: Illustrated as various figures surrounding the intervention, representing individuals or groups with an interest in or affected by the intervention. They are depicted with names, roles, and contact information, emphasizing their engagement in the process.

* Resource Allocation: Represented by arrows indicating the flow of resources from the Public Health Official to the intervention. The resources are depicted as tangible assets such as funds, personnel, and equipment, with labels indicating the amount, type, and date allocated.

* Data Collection Methodology: Illustrated as a toolkit symbolizing the methods and tools used to collect data on intervention effectiveness. The methodology is depicted with a description, emphasizing its importance in gathering relevant data.

* Outcome: Represented by a scale icon symbolizing the measurable results or impacts of the intervention. Each outcome is named and described, highlighting its significance in evaluating intervention success.

* Assessment Criteria: Depicted as benchmarks or standards against which interventions are assessed. The criteria are illustrated with names and descriptions, underscoring their role in evaluating intervention effectiveness.

* Data Analyst: Represented by a magnifying glass symbolizing analysis and interpretation of collected data. Data Analysts are depicted with names and qualifications, highlighting their expertise in analyzing intervention data.

* PHITS (Public Health Information Technology System): Illustrated as a centralized database symbolizing the storage and management of intervention-related data. PHITS is depicted with labels indicating its name, description, and data access procedures.

* Government Agencies: Represented by governmental symbols indicating involvement in funding, regulating, or participating in interventions. They are depicted with names and roles, emphasizing their influence on intervention processes.

* Policy Makers: Illustrated as individuals or groups interacting with Public Health Researchers to inform public health policies. Policy Makers are depicted with names, titles, and organizational affiliations.

* Public Health Researchers: Represented by individuals or groups engaged in research activities related to public health interventions. They are depicted with names, affiliations, and research areas, highlighting their contribution to evidence-based policymaking. Relationships:

* Arrows and connectors illustrate the dynamic relationships between entities. Relationships such as initiation of interventions by Public Health Officials, resource allocation, stakeholder involvement, data collection, analysis, and dissemination are depicted to illustrate the flow of information and resources within the system.

3.1 ERD

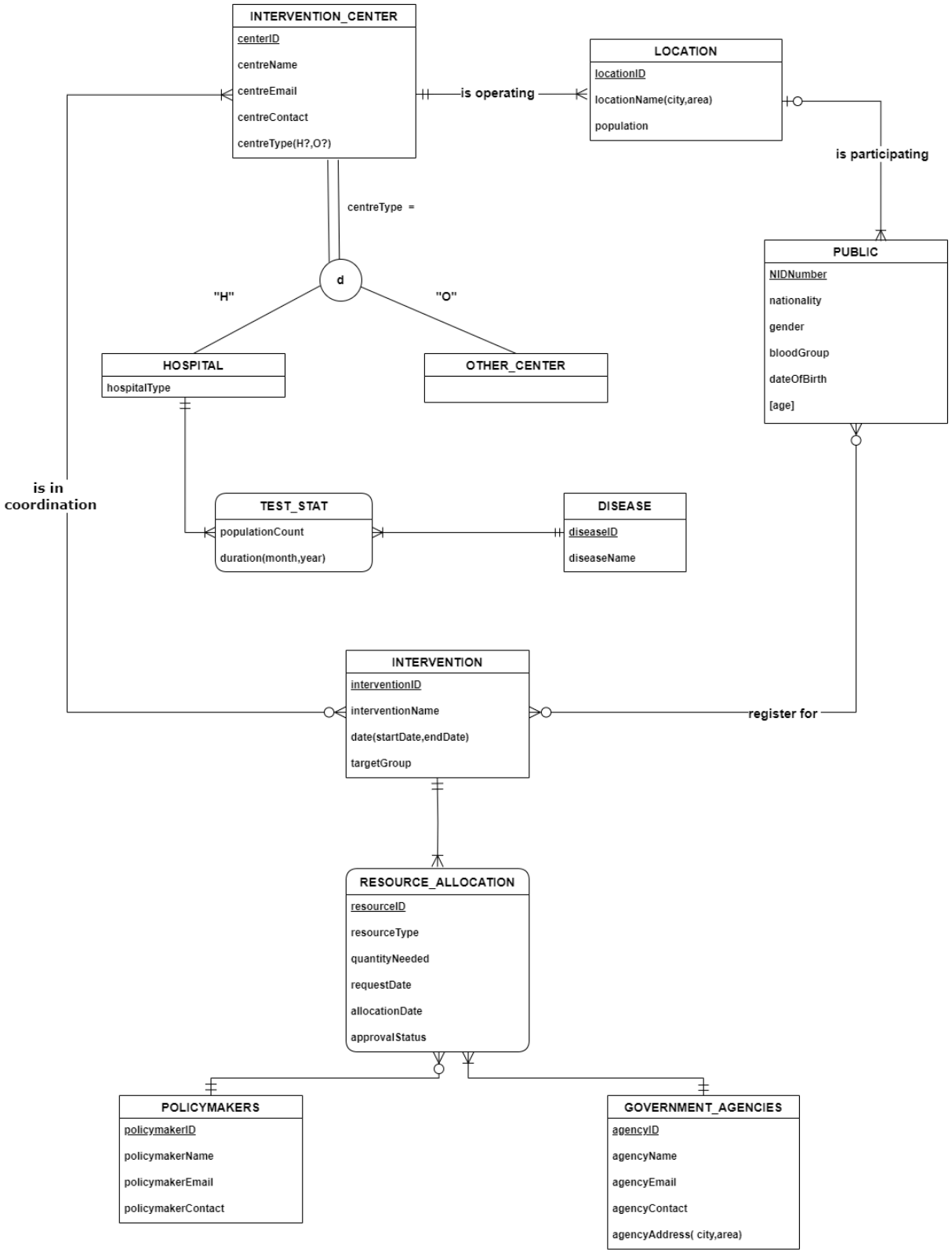
An "ERD diagram" stands for Entity-Relationship Diagram. It's a graphical representation used in database design to illustrate the entities within a system and the relationships between those entities.

3.2 Normalized Schema / Normalization

3.3 Data Dictionary

4 Methodology and Implementation

Methodology: 1. Requirement Analysis: * Understanding the System: Thoroughly analyze the existing system described in the rich picture, including the flow of information,


INTERVENTION_CENTER
centerID
centreName
centreEmail
centreContact
centreType(H?,O?)
is operating
LOCATION
locationID
locationName(city,area)
population
is participating
centreType =
d
"H"
"O"
PUBLIC
NIDNumber
nationality
gender
bloodGroup
dateOfBirth
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HOSPITAL
hospitalType
OTHER_CENTER
is in coordination
TEST_STAT
populationCount
duration(month,year)
DISEASE
diseaseID
diseaseName
INTERVENTION
interventionID
interventionName
date(startDate,endDate)
targetGroup
register for
RESOURCE_ALLOCATION
resourceID
resourceType
quantityNeeded
requestDate
allocationDate
approvalStatus
POLICYMAKERS
policymakerID
policymakerName
policymakerEmail
policymakerContact
GOVERNMENT_AGENCIES
agencyID
agencyName
agencyEmail
agencyContact
agencyAddress(city,area)

Figure 5: ERD

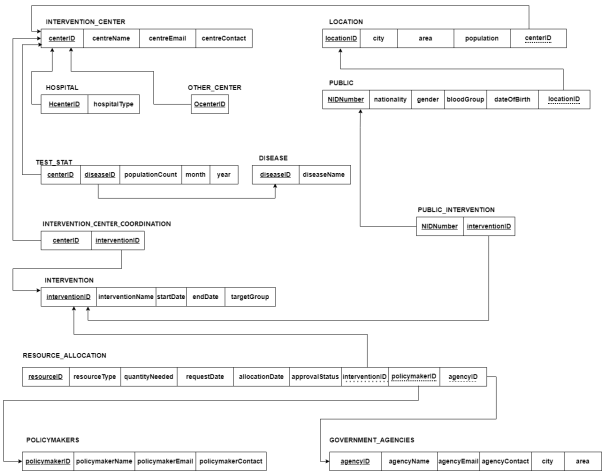

Figure 6: Normalized Schema

Disease (D)

Name	Data Type	Size	Remark
DISEASE_ID	CHAR	5	This is the primary key of the DISEASE. It contains ID of DISEASE. e.g. DENGU11
DISEASE_NAME	VARCHAR	50	It contains the name of the disease. E.g. 'Corona Virus'

Figure 7: D1

entities involved, and their interactions. * Identifying Entities: Identify all entities depicted in the rich picture, such as Public Health Official, Intervention, Stakeholder, etc. Ensure clarity on their roles and relationships. * Recognizing Relationships: Identify and document the various relationships between entities, including how they interact and exchange information. 2. Entity-Relationship Diagram (ERD) Design: * Entity Identification: Create a list of entities identified during the requirement analysis phase. * Attribute Determination: Determine the attributes for each entity, representing the data elements that need to be stored. * Relationship Definition: Define the relationships between entities, including cardinality (one-to-one, one-to-many, many-to-many) and participation constraints (mandatory or optional). * ERD Construction: Use a diagramming tool to create the ERD, representing entities as rectangles, attributes as ovals, and relationships as lines connecting them. 3. Normalization: * Analyze for Redundancy: Review the ERD for any instances of data redundancy or anomalies. * Normalization Techniques: Apply normalization techniques (such as 1NF, 2NF, 3NF) to eliminate redundancy and ensure data integrity. * Primary Key Assignment: Ensure each relation has a primary key that uniquely identifies each record. 4. Relation Schema Design: * Translate to Relation Schemas: Convert the normalized ERD into relation schemas, with each relation representing a table in the database. * Attribute Specification: Assign appropriate data types and sizes to each attribute based on the nature of the data. * Foreign Key Establishment: Define foreign keys to establish relationships between tables, ensuring referential integrity. 5. Data Dictionary Creation: * Attributes Documentation: Document each relation's attributes in the data dictionary, including their names, de-

Test_Stat (S)

Name	Data Type	Size	Remark
CENTER_ID	CHAR	5	This is the foreign key of the Test_Stat. It contains ID of Test_Stat. e.g. 1234
DISEASE_ID	CHAR	5	This is the foreign key of the DISEASE. It contains ID of DISEASE. e.g. CORONA52
POPULATION_COUNT	INTEGER	11	It contains the count of population. E.g. 123456
MONTH	VARCHAR	20	It contains the month
			Test_Stat. e.g., 'February'
YEAR	INTEGER	11	It contains the year Test_Stat. e.g., '2000'

Figure 8: D2

Other_Center (O)

Name	Data Type	Size	Remark
OCENTER_ID	CHAR	5	This is the primary key of the Other_Center. It contains ID of Other_Center. e.g. SUR982

Figure 9: D3

scriptions, data types, and constraints. * Validation Rules: Specify any validation rules or constraints on attributes, such as range checks or format requirements. * Default Values: Document any default values for attributes where applicable, ensuring consistency and completeness of data. Implementation: 1. Requirement Analysis: * Understand the flow of information from public health officials, data analysts, researchers, NGOs to the ministry of health and family welfare, and then to government agencies and policy makers. * Identify entities such as Public Health Official, Intervention, Stakeholder, Resource Allocation, Data Collection Methodology, Outcome, Assessment Criteria, Data Analyst, PHITS, Government Agencies, Policy Makers, and Public Health Researchers. * Recognize relationships like intervention initiation, resource allocation, stakeholder involvement, data collection, analysis, and dissemination. 2. Entity-Relationship Diagram (ERD) Design: * Use tools like Lucidchart or draw.io to create an ERD. * Represent entities as boxes and relationships as lines connecting them. * Define cardinality and participation constraints. 3. Normalization: * Analyze the ERD for redundancy and anomalies. * Apply normalization techniques (1NF, 2NF, 3NF) to eliminate these issues. * Ensure each relation has a primary key. 4. Relation Schema Design: * Translate the normalized ERD into relation schemas. * Assign appropriate data types and constraints to attributes. * Define foreign keys to establish relationships between tables. 5. Data Dictionary Creation: * Document each relation's attributes, data types, and constraints. * Include descriptions of the purpose and usage of each attribute. * Specify any default

Hospital (H)

Name	Data Type	Size	Remark
HCENTER_ID	CHAR	5	This is the primary key of the Hospital table. It contains ID of Hospital. e.g. AMZ98
HOSPITAL_TYPE	VARCHAR	100	This is the actual data of understanding the type of Hospital. e.g. Eye hospital

Figure 10: D4

Intervention (I)

Name	Data Type	Size	Remark
INTERVENTION_ID	CHAR	5	This is the primary key of the Intervention. It contains ID of Intervention. e.g. Sheba1192
INTERVENTION_NAME	TEXT	50	It contains the name of Intervention. E.g Sheba
START-DATE	NUMBER	2	It contains the start date of Intervention. E.g. 20
END_DATE	NUMBER	2	It contains the end date of Intervention. E.g. 25
TARGET_GROUP	TEXT	100	It contains the targeted group for intervention. E.g. JC Penny

Figure 11: D5

values or validation rules. Conclusion: This methodology provides a structured approach to designing and implementing a database system for managing public health interventions. By following these steps, we can ensure that the database accurately captures the intricate ecosystem described in the rich picture, facilitating effective data collection, analysis, and dissemination for informed decision-making in public health.

4.1 Which framework and softwares are being used

4.2 Interface Design and Implementation

4.2.1 Dashboard

5 Result Analysis

.

6 Conclusion and Future Work

Future Work: Development of a Data Analytics and Visualization Platform Objective: The aim of this future work is to enhance the existing system for managing public health interventions by incorporating advanced data analytics and visualization capabilities. This platform will enable stakeholders to gain deeper insights from the collected data, facilitate evidence-based decision-making, and improve the effectiveness of public health

Public_Intervention (B)

Name	Data Type	Size	Remark
NID_NUMBER	CHAR	10	It contains the number of NID and it is a foreign key.
INTERVENTION_ID	VARCHAR	20	This is the foreign key of the Intervention. It contains ID of Intervention. e.g. Sheba1192

Figure 12: D6

Intervention_Center (V)

Name	Data Type	Size	Remark
CENTER_ID	CHAR	5	This is the primary key of the Intervention_Center table. It contains ID of Intervention_Center. e.g. Sheba9810
CENTER_NAME	VARCHAR	50	This contains the name of the Intervention_Center. e.g., 'Sheba'
CENTER_EMAIL	VARCHAR	100	It contains the email of Intervention_Center. e.g. 'Sheba9810@gmail.com'
CENTER_CONTACT	VARCHAR	25	It contains the contact number of Intervention_Center. e.g. +880182225312

Figure 13: D7

interventions. Components and Features: * Data Integration and Processing: * Implement robust mechanisms for integrating data from various sources, including public health officials, researchers, NGOs, and government agencies.

Develop automated data processing pipelines to clean, transform, and prepare data for analysis.

Advanced Analytics:

* Utilize machine learning algorithms to perform predictive analytics on intervention outcomes, resource utilization, and stakeholder engagement.

* Implement statistical analysis tools to identify trends, correlations, and patterns in the data.

Interactive Visualization: * Build interactive dashboards and visualizations to present key performance indicators, intervention impact metrics, and other relevant insights.

* Enable stakeholders to explore data dynamically, filter information based on different criteria, and drill down into specific details.

first [2].

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Intervention_ Center_ Coordination (C)

Name	Data Type	Size	Remark
CENTER_ID	CHAR	5	This is the foreign key of the Intervention_ Center_ Coordination. It contains ID of Intervention_ Center_ Coordination. e.g. Sheba9810
INTERVENTION_ID	CHAR	5	This is the foreign key of the Intervention_ Center_ Coordination. It contains ID of Intervention_ Center_ Coordination. e.g. Sheba1192

Figure 14: D8

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[10] Muhamad Saiful Bahri Yusoff, Ahmad Fuad Abdul Rahim, Abdul Aziz Baba, Shaiful Bahari Ismail, Mohamad Najib Mat Pa, et al. Prevalence and associated factors of stress, anxiety and depression among prospective medical students. *Asian journal of psychiatry*, 6(2):128–133, 2013.

[1].
[3].
[4].

Government_Agencies (G)

Name	Data Type	Size	Remark
AGENCY_ID	CHAR	20	This is the primary key of the Government_Agencies. It contains ID of Government_Agencies. e.g. Shasto532
AGENCY_NAME	VARCHAR	50	It contains the name of Government_Agencies. E.g Shasto
AGENCY_EMAIL	VARCHAR	20	It contains the email of Agencies. E.g shasto532@gmail.com
AGENCY_CONTACT	NUMBER	15	It contains the contact number of the Agency. E.g 0167750.....
CITY	VARCHAR	255	It contains the city of the agencies. E.g Dhaka
AREA	VARCHAR	255	It contains the area of the agencies. E.g Malibagh

Policymakers (M)

Name	Data Type	Size	Remark
POLICYMAKER_ID	CHAR	20	This is the primary key of the Policymakers. It contains ID of Policymakers. e.g. Jadroo123
POLICYMAKER_NAME	VARCHAR	50	It contains the name of Policymakers. E.g Jadroo
POLICYMAKER_EMAIL	VARCHAR	20	It contains the email of Policymakers. E.g Jadroo123@gmail.com
POLICYMAKER_CONTACT	VARCHAR	20	It contains the contact number of the Policymakers. E.g 014080.....

Figure 15: D9

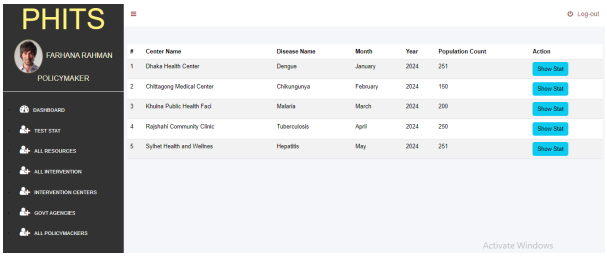

Figure 16: fig 1

[5].
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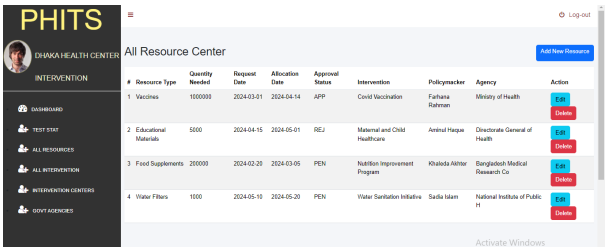

Figure 17: fig2

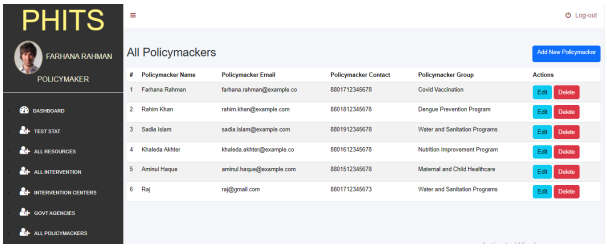

Figure 18: fig 3

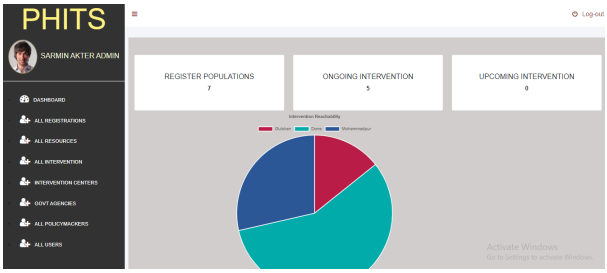

Figure 19: fig4

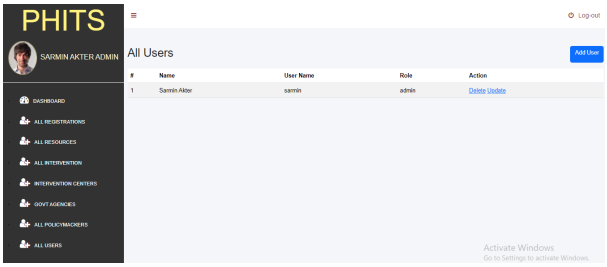

Figure 20: fig5

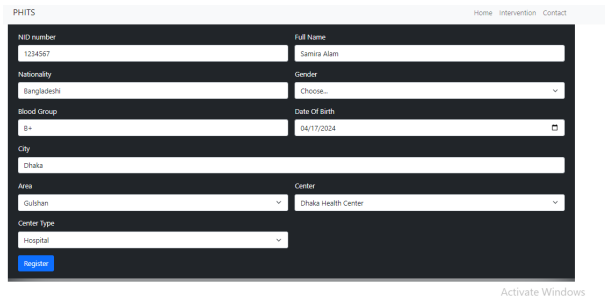

Figure 21: fig 6

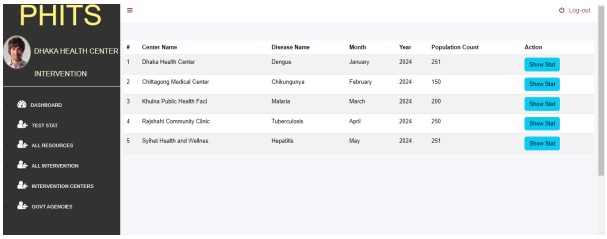

Figure 22: fig 7

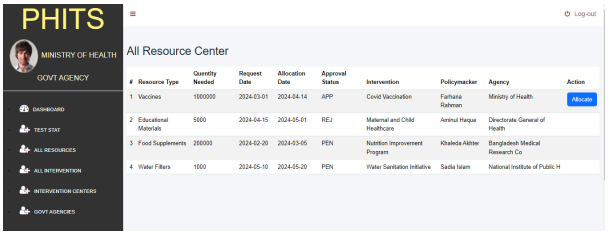

Figure 23: fig 8

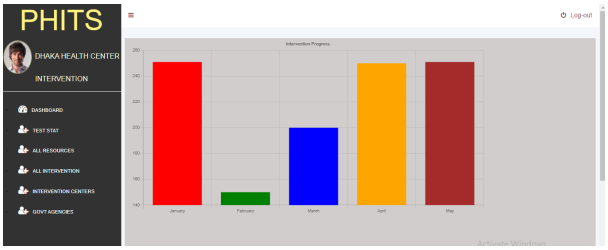

Figure 24: fig 9

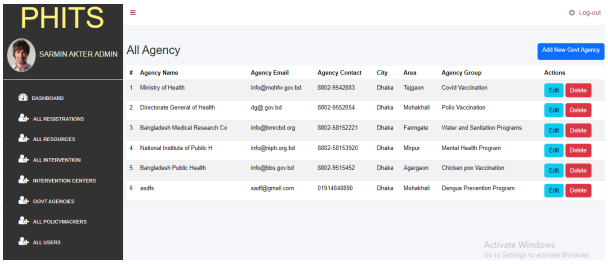

Figure 25: fig10

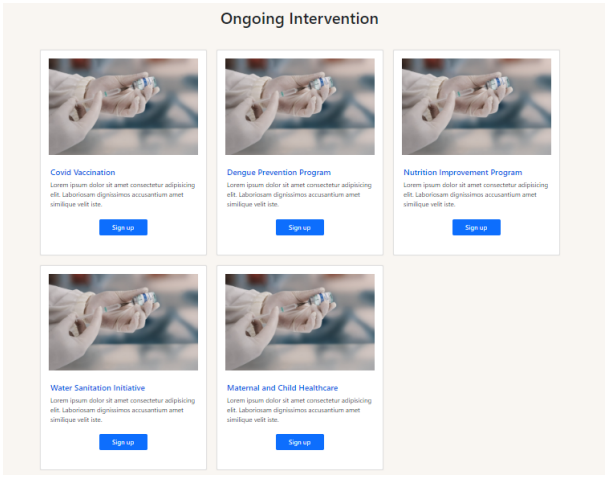

Figure 26: fig11