Jenna

Article

Rudan, I., 2016. Setting health research priorities using the CHNRI method: IV. Key conceptual advances. Journal of Global Health, 6(1), p.010501. doi:10.7189/jogh.06.010501.

Main finding

- This was conducted to set child health research priorities.
- Led by Igor Rudan with support from local researchers (e.g., Dr. Mickey Chopra and Dr. Mark Tomlinson from the MRC Health Systems Unit in Cape Town).
- Uses the “4D framework” to categorise research ideas:
    - Description: Assessing disease burden and determinants.
    - Delivery: Optimising existing health interventions.
    - Development: Improving current interventions.
    - Discovery: Innovating new interventions.
- Research ideas are further classified by depth: avenues, options, and specific questions.
- South Africa was the first country to implement the CHNRI method at the national level (April 2006).
- Context and Criteria for Prioritisation
    - Five standard context elements:
        - Population of interest
        - Disease burden
        - Geographic limits
        - Time scale
        - Risk preference in investment
    - Five standard criteria for scoring research ideas:
        - Answerability
        - Effectiveness
        - Deliverability
        - Maximum potential impact on disease burden
        - Effect on equity
    - Both context and criteria are flexible and can be adapted to specific settings.
- Crowdsourcing Expert Opinion
    - Uses a large group of experts to score research ideas independently via a simple system (0–100% optimism).
    - Avoids biases and group dynamics seen in traditional methods like Delphi.
    - Ensures transparency, replicability, and democratic input.
- This implementation demonstrated the adaptability and practicality of the CHNRI method for national priority-setting.
- Strengths
    - highly transparent so that everyone can see how the score was calculated
    - democratic, and reduces bias by using many independent experts
    - flexible as the criteria can be adapted for any context
- Limitations

- expert-dependent risking that the priorities may not reflect ground-level realities if community health workers, nurses, or patients are not included as 'experts,'
- resource-intensive whereby it requires significant coordination to manage the scoring from many people

Introducing to the framework

CHNRI is a method for setting priorities in health research that answers questions with the highest potential to reduce disease burden and inequity feasibly and cost-effectively. Its core principle is based on crowdsourcing (Yoshida et al., 2016). This means that it gathers the collective opinion of a large, diverse group of experts, who are asked independently, will produce a more accurate and credible list of priorities than any small committee could. While it was first used for child health, its flexibility has led to its application in over 50 global exercises, from infectious diseases to health systems research (Rudan et al., 2017).

Relevance to South Africa

The CHNRI framework is both theoretically and practically important for South Africa. In fact, it was first used nationally in South Africa in 2006, when local researchers applied the method to identify priority research areas in child health. This early application demonstrated that CHNRI can be effectively used in real-world settings. This approach supports transparent and evidence-based decision-making in resource-limited settings. It helps policymakers identify which research or health programs are likely to deliver the best health outcomes for the population, ensuring that limited funds are used as effectively as possible.

This historical example shows that CHNRI is well-suited to address South Africa's complex health challenges. It provides a clear structure to help compare and prioritise different health needs, which is especially useful given the country's quadruple burden of disease. The approach's strong focus on equity also matches the NHI objective of reducing health inequalities. By prioritising research that improves healthcare access and delivery for vulnerable groups, CHNRI contributes to making UHC more achievable.

References

Rudan, I., Yoshida, S., Chan, K.Y., Sridhar, D., Wazny, K., Nair, H., Sheikh, A., Tomlinson, M., Lawn, J.E., Bhutta, Z.A., Bahl, R., Chopra, M., Campbell, H., El Arifeen, S., Black, R.E. & Cousens, S., 2017. Setting health research priorities using the CHNRI method: VII. A review of the first 50 applications of the CHNRI method. Journal of Global Health, 7(1), p.011004. doi:10.7189/jogh.07.011004.

Yoshida, S., Rudan, I. & Cousens, S., 2016. Setting health research priorities using the CHNRI method: VI. Quantitative properties of human collective opinion. Journal of Global Health, 6(1), p.010503. doi:10.7189/jogh.06.010503.

Blessings

Article

Black, R.E. (2016). The legacy of the Child Health and Nutrition Research Initiative (CHNRI). *Journal of Global Health*, [online] 6(1), pp.010101–010101. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC4766789/.

Main Findings

The article by Robert Black (2016) looks at the legacy of the Child Health and Nutrition Research Initiative (CHNRI). The main finding is that CHNRI transformed how child health research priorities are set globally. Before CHNRI, research priorities were often donor-driven and disconnected from the actual needs of communities in low- and middle-income countries. CHNRI introduced a systematic, transparent, and participatory approach that brought researchers, policymakers, and local stakeholders together to identify priorities.

The framework was applied across multiple areas of health such as maternal and child health, nutrition, and infectious diseases and proved flexible and replicable. Most importantly, it created greater alignment between investments and the burden of disease. Its legacy is a stronger focus on equity, feasibility, and local ownership in global health research.

Introducing the Framework

The framework we selected was the CHNRI method also known as the Child Health and Nutrition Research Initiative methodology. It is a structured tool for setting research priorities. The framework uses clear criteria such as answerability, effectiveness, deliverability, potential for reducing disease burden, and impact on equity to evaluate competing research options. Experts score research questions against these criteria, and the results are combined to create a ranked list of priorities. This ensures that the process is systematic, transparent, and accountable.

How is it used for priority setting? + Strengths and Limitations

The CHNRI framework is used to bring order to the complex task of deciding where scarce research resources should be directed. By applying explicit criteria, it helps stakeholders focus on projects that are most feasible, impactful, and equitable.

Strengths:

- With regards to **transparency**, decisions are based on clear scoring and criteria.
    1. CHNRI uses a structured scoring system where experts assign values to each research option based on the same set of criteria.

2. This reduces hidden decision-making or “behind-the-scenes” influence from donors or politics, because the process is documented and open to scrutiny.

3. Transparency builds trust among stakeholders and makes it easier to justify why certain projects are prioritised over others.

- As for **inclusivity**, it engages multiple stakeholders, including local researchers and policymakers.
    1. The framework allows participation from a wide range of stakeholders: researchers, policymakers, programme managers, and funders.

    2. By considering different voices, it avoids being dominated by one group’s interests (e.g., only donors or only researchers).

    3. Although community voices are not always directly included, the emphasis on equity in the criteria helps to reflect broader societal concerns.

- **Replicability** can be applied across many disease areas and contexts.
    1. Because CHNRI follows a step-by-step method and uses standardised criteria, it can be repeated in different health areas and contexts.

    2. It has already been applied across child health, nutrition, infectious diseases, maternal health, and mental health, showing its adaptability.

    3. Replicability ensures consistency over time and across different settings, making comparisons possible between exercises.

- **Practical utility** results in ranked priorities that are easy to use for decision-making.
    1. The output of CHNRI is a ranked list of research priorities, which is straightforward for policymakers and funders to use.

    2. Instead of abstract recommendations, it provides clear, evidence-informed guidance on where to allocate resources.

    3. This makes CHNRI particularly useful in low- and middle-income countries, where funding is limited and difficult trade-offs must be made.

Limitations:

- **Heavy reliance on expert input**, which may still carry bias. **(Risk of Bias)**
    1. CHNRI depends heavily on expert scoring, and experts may bring their own biases based on their professional background, funding ties, or personal interests.

    2. For example, researchers may prioritise interventions that align with their area of expertise or funders’ agendas, rather than community needs.

3. While stakeholder “value filters” help mitigate this, it still does not fully eliminate bias in the process.

- **Resource-intensive** requires time, coordination, and trained facilitators.
    1. Conducting a CHNRI exercise requires significant organisation: recruiting and coordinating experts, gathering data, facilitating scoring workshops, and synthesising results.

    2. This demands both time and financial resources, which may be challenging in low-resource settings.

    3. Without proper funding and facilitation, the process could lose credibility or fail to be implemented effectively.

- **Limited direct inclusion of community** voices, as it tends to focus more on expert perspectives.
    1. Although CHNRI is more inclusive than many previous approaches, it still focuses mainly on expert input rather than grassroots voices.

    2. Local communities, patients, and beneficiaries of health interventions are often not directly involved in scoring or decision-making.

    3. This raises concerns about whether priorities truly reflect lived experiences, particularly in marginalised populations.

South African Context

In South Africa, the CHNRI framework could be highly valuable given the country’s competing health challenges like HIV, tuberculosis, malnutrition, and rising non-communicable diseases. The structured process would help ensure that limited research funding is directed to areas with the greatest health burden and where solutions are most feasible.

For example, applying CHNRI could help prioritise interventions in child nutrition, where undernutrition and obesity coexist, or in HIV research, where prevention and paediatric care remain crucial. The emphasis on equity also aligns well with South Africa’s constitutional commitment to equitable access to health.

Although, challenges may still exist. South Africa would need to adapt the CHNRI to include stronger community engagement, ensuring that voices from rural and marginalised populations are heard. On top of that, resources and coordination would be required to train facilitators and integrate CHNRI outputs into national health strategies.

References

Black, R.E. (2016). The legacy of the Child Health and Nutrition Research Initiative (CHNRI). *Journal of Global Health*, [online] 6(1), pp.010101–010101. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC4766789/.

Ethan

Priority-Setting Framework: Child Health and Nutrition Research Initiative (CHNRI) Approach

Key Findings from Articles

The CHNRI method has been extensively applied to set research priorities in child and maternal health globally and in low- and middle-income countries, including South Africa. Rudan et al. (2016) highlight that the approach is effective in systematically ranking research questions based on criteria such as answerability, effectiveness, deliverability, disease burden reduction potential, and equity impact.

A major finding is its ability to incorporate a broad range of expert opinions while reducing bias through structured scoring, which improves transparency compared to traditional consensus methods (Rudan et al., 2017). Studies show that CHNRI application leads to prioritisation that reflects both scientific evidence and stakeholder values, enhancing the practical relevance of funded research (Tomlinson et al., 2007).

However, evaluations acknowledge challenges such as expert selection biases, complexity in process management, and the need for contextual adaptation to local health systems and epidemiology (Ko et al., 2022). Despite these limitations, its adaptability has made CHNRI a trusted framework for guiding investments in maternal and child health research (Rudan et al., 2017).

Introduction to the CHNRI Framework

The CHNRI framework adopts a systematic process to define, score, and rank research priorities. It begins by gathering a diverse group of experts who propose research questions. These questions are scored against pre-established criteria, including:

Answerability: The feasibility of generating robust answers through research.

Effectiveness: Likelihood that the intervention will achieve its intended health outcomes.

Deliverability: Practicality of implementing the intervention within existing health systems.

Disease burden reduction: Potential to lower morbidity and mortality rates.

Equity: Capacity to reduce health disparities among vulnerable populations.

The scoring results produce quantitative priority scores that guide decisions transparently and democratically (Rudan, 2016).

Strengths and Limitations for Priority Setting

Strengths:

Transparency and replicability: The scoring process and criteria are explicit, reducing subjective bias found in purely consensus-driven methods.

Inclusiveness: Broad stakeholder inclusion ensures diverse views, reflecting scientific and societal priorities.

Flexibility: Criteria can be tailored to different contexts and research focuses.

Focus on equity: Explicit inclusion of equity as a criterion addresses disparities important in public health priority setting.

Limitations:

Complexity and time requirements: Managing multiple experts and scoring can prolong the process.

Potential expert bias: Representation of experts may not fully capture all relevant stakeholder views, especially community perspectives.

Data and resource dependency: Accurate scoring requires access to up-to-date epidemiological and health system data.

Adaptation challenges: Framework modification is needed for different country contexts, which requires additional expertise.

Applicability to South African Context

South Africa's dual burden of infectious and non-communicable diseases, coupled with health inequities, makes CHNRI particularly suitable for prioritising research that addresses local child and maternal health challenges (Tomlinson et al., 2007).

The framework's emphasis on equity aligns with national health goals to reduce disparities. Its use of measurable criteria helps direct resources where impact can be maximised, addressing the pressing needs of under-resourced rural and urban communities (Coovadia et al., 2009).

However, operationalising CHNRI in South Africa requires tackling data limitations, ensuring diverse expert representation from local health sectors, and integrating community voices to

reflect lived realities. Investment in capacity-building for local researchers and decision-makers is essential to sustainably embed CHNRI-based priority setting within health governance structures (Rudan et al., 2017).

References

Coovadia, H., Jewkes, R., Barron, P., Sanders, D., & McIntyre, D., 2009. The health and health system of South Africa: historical roots of current public health challenges. The Lancet, 374(9692), pp.817–834.

Ko, M., et al., 2022. A global roadmap to 2030. PLOS One.

Rudan, I., 2016. Setting health research priorities using the CHNRI method. Journal of Global Health. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC4938380/

Rudan, I., et al., 2017. A review of the first 50 applications of the CHNRI method. Journal of Global Health. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC5481891/

Tomlinson, M., et al., 2007. Setting priorities in child health research investments for South Africa. Bulletin of the World Health Organization. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC1952202/

MUNTU TLADI

1. Selected Article & Feedback

Article: *Global research priorities to accelerate programming to improve early childhood development in the sustainable development era: a CHNRI exercise* by Tomlinson, Mark; Darmstadt, Gary L.; Yousafzai, Aisha K.; Daelmans, Bernadette; Britto, Pia; Gordon, Sarah L.; Tablante, Elizabeth; Dua, Tarun. Published 2019. Scholar.sun.ac.za

Feedback:

- **Relevance & urgency:** The article addresses early childhood development (ECD), which is increasingly seen as critical in LMICs because deficits in early years have long-term consequences across health, cognition, economic productivity. The timing (SDG era) makes it especially relevant. Scholar.sun.ac.za
- **Broad stakeholder input:** The process drew input from many stakeholders; this helps with legitimacy and ensuring that priorities reflect both scientific evidence and what is feasible on the ground. Scholar.sun.ac.za
- **Clear thematic goals & actionable priorities:** The results are organized into thematic goals (e.g. improving impact of interventions, implementation, integration).

This gives policy makers concrete entry points. Scholar.sun.ac.za

- **Transparent methodology:** They describe how many options were considered, how scoring was done, etc. This enhances trust and reproducibility. Scholar.sun.ac.za

Things the article could improve or where limitations show:

- **Context heterogeneity:** Because this is "global," diversity of settings means that what is feasible or high-priority in one country may not be as relevant in another. The general priorities may need adaptation locally.

- **Implementation gap:** The article focuses on research priorities. It is less clear how these research priorities will translate into policy or programming change in different settings. Political, financial, and systems constraints may block uptake.

- **Inequality of voice:** Even though many stakeholders are included, there remains risk that some voices (e.g. caregivers, community level, marginalized groups) may be less strongly represented; their views may differ in what they consider priorities.

- **Resource & cost considerations:** The scoring may account for feasibility, but actual cost, resources, funding availability in specific contexts might undermine ability to pursue some priorities even if they are ranked high.

2. The CHNRI Framework: What It Is

Short summary of CHNRI approach (drawn from general CHNRI literature):

- CHNRI = Child Health and Nutrition Research Initiative. A method for systematically and transparently setting priorities for health or nutrition research.

- Key steps generally include:

    1. Define the context (geographic scope, time horizon, risk preferences, target population).

    2. Gather a long list of possible research options/questions.

    3. Select priority-setting criteria (for example: answerability, effectiveness, feasibility, potential impact on disease burden, equity).

    4. Experts score those research options via those criteria.

    5. Adjust scores perhaps using stakeholder weights.

    6. Rank research options based on scores.

7. Optionally, derive thematic priorities from top ranked options to make them more digestible / actionable.

- Flexibility: The CHNRI method is adaptable (you can modify criteria, the stakeholder groups, scoring approach) depending on context.

3. How It Is Used for Priority Setting — Strengths & Limitations (Using the 2019 ECD Article as Example)

Strengths (with respect to the ECD article and CHNRI more generally):

- **Systematic & transparent:** The process forces explicit consideration of many options, and requires scoring based on transparent criteria. This helps reduce bias and improves credibility.

- **Wide participation:** Involving many stakeholders including experts from different disciplines (health, education, social policy etc.) improves the breadth of perspectives.

- **Actionable output:** The result is not only a ranked list of questions, but thematic goals that policymakers and funders can use to focus resources (e.g. scaling interventions, worker training).

- **Global relevance, but with room for contextual adaptation:** The global ECD priorities give direction across LMICs; individual countries can adapt them to local disease burden, capacities, resources.

- **Focus on both impact and implementation:** The article emphasises not only what should be done (which interventions) but also how to deliver them (implementation, integration), which is often the weak link.

Limitations:

- **"One-size-fits-all" risk:** Global priorities may not take full account of country-specific realities (differing infrastructure, resource constraints, cultural/social determinants).

- **Feasibility vs aspiration gap:** Some high-ranked priorities may require systems, workforce or financial capacity that low-resource settings may not have.

- **Cost / affordability constraints under-emphasized:** Although feasibility or deliverability are criteria, precise budgeting, opportunity cost, and funding constraints might still make some priorities difficult to implement.

- **Representation and voice issues:** Even with many stakeholders, certain marginalized voices (communities, caregivers, local implementers) may still be

underrepresented.

- **Time lag / updating needed:** The ECD field evolves; new evidence emerges, contexts change (e.g. COVID-19, economic downturns). Priorities set in 2019 may need updating.

- **Translation into funding & policy:** Setting priorities doesn't guarantee that funders will follow them, or that policy change, programming or scale-up will occur accordingly.

4. How It Works (or Could Work) in the South African Context

Thinking about South Africa, which has relatively better data, mixed public/private health systems, high disease burden in many areas, inequality, and is implementing reforms (e.g. NHI), here's how the CHNRI approach (e.g. as in the 2019 ECD article) might fit and what adaptations might be needed.

Potential Fit / Opportunities:

- South Africa could use a CHNRI exercise focused on priority research (and even priority health interventions) relevant to UHC/NHI. For example, research gaps in ECD, school health, childhood malnutrition, developmental delays, early stimulation, etc.

- The rich existing health information systems, universities, research institutions, plus civil society, means there are many potential stakeholders to engage.

- South Africa's policy debates (e.g. NHI, strengthening PHC, integrating mental health, etc.) could benefit from such systematic prioritization to allocate scarce research or implementation resources.

- Could help with aligning donor funding, academic research agendas, and government priorities to improve coherence.

Challenges / Adaptations Needed:

- **Local context specificity:** The global ECD priorities will need to be adapted to provincial and district level, considering differences in resources, capacity, burden, and social determinants.

- **Stakeholder inclusion:** Ensuring strong representation from under-served communities (rural, informal settlements), parents/caregivers, non-medical sectors (e.g. education), community organisations. Their priorities may differ, especially in what is acceptable or feasible.

- **Feasibility given resources:** Some research or interventions may be excellent in idea but expensive to scale given health workforce, infrastructure, or funding constraints. SA budget limitations mean priorities must consider cost and budget impact more concretely.

- **Implementation planning:** The research priorities should be linked with policy makers and implementers so that research informs actual programme design, policy change, scale up, not just publication.

- **Update cycles:** Priorities set should be revisited periodically (e.g. every 3-5 years) to reflect changes in epidemiology, social determinants, economy, or disruptions (like pandemics).

- **Integration across sectors:** For ECD, many of the determinants lie outside the health sector (nutrition, education, poverty, parental leave, early learning). Thus prioritization should involve multisectoral perspectives.

- **Ensuring funding alignment:** Probably the biggest barrier is that even if research priorities are set, securing funds (government, donors, private) to implement them remains difficult. So, part of the priority-setting process in SA must involve funders and financial commitment.

Reference

Tomlinson, M., Darmstadt, G.L., Yousafzai, A.K., Daelmans, B., Britto, P., Gordon, S.L., Tablante, E. and Dua, T. (2019). Global research priorities to accelerate programming to improve early childhood development in the sustainable development era: a CHNRI exercise. *Journal of Global Health*, [online] 9(3). Available at: https://pubmed.ncbi.nlm.nih.gov/31673352/.