Knowledge Gaps and Research Priorities Related to Health as Reflected in the Millennium Development Goals Task Force Documents

Prepared by Margarita Hurtado, American Institutes for Research, Silver Spring, MD, USA.

Note: Most of these are implicit as only a very small minority of TFs included a specific section on this subject.

<table>
<thead>
<tr>
<th>Task Force 1. Poverty and Economic Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background Paper</strong>: This task force did not produce a background document.</td>
</tr>
<tr>
<td><strong>Interim Report</strong></td>
</tr>
<tr>
<td><strong>Health Specific</strong>:</td>
</tr>
<tr>
<td>➢ Need for regional integration for coordination of public health interventions, e.g. HIV/AIDS treatment and prevention for seasonal and migrant workers. (p.39)</td>
</tr>
<tr>
<td><strong>Non-Health Specific</strong>:</td>
</tr>
<tr>
<td>➢ One of the 8 core problems in international arrangements that impede success in achieving MDGs is that:</td>
</tr>
<tr>
<td>➢ “Key science and technology institutions are not sufficiently mobilized to address the specific challenges of health,… that afflict the poorest countries...” Recommend national science and technology plans including strengthening science advisory mechanisms for policy makers, promoting science education and focusing scientific investments in locally specific challenges in health, agriculture and the environment. (p.4)</td>
</tr>
<tr>
<td>➢ Recommends &amp; presents a subnational level map of the problem of poverty (p.10)</td>
</tr>
<tr>
<td>➢ Need to focus on the unique needs of rural and urban areas when defining strategies (e.g., different service delivery mechanisms required for each) (p.38)</td>
</tr>
<tr>
<td>➢ Need to mobilize science and technology including undertaking new basic research (e.g., on malaria) to develop solutions adapted to the needs of developing countries. (pp.50-51)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Force 2. Hunger</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background Paper</strong></td>
</tr>
<tr>
<td><strong>Health Specific</strong>: None</td>
</tr>
<tr>
<td><strong>Non-Health Specific</strong>:</td>
</tr>
<tr>
<td>➢ Genetic modification of crop plants and associated species with priority given to developing traits directly beneficial to the poor, such as drought tolerance in maize or disease tolerance in cooking bananas (p.38).</td>
</tr>
<tr>
<td>➢ General statement on the importance of “decentralized R&amp;D systems with active local innovation and adaptive research, supported by research institutions that also work on key problems identified in the field”.</td>
</tr>
<tr>
<td><strong>Interim Report</strong></td>
</tr>
<tr>
<td><strong>General</strong>:</td>
</tr>
<tr>
<td>➢ Presents explicit issues requiring further research, analytical questions and policy design questions (pp.24-25), none of these are directly related to health.</td>
</tr>
</tbody>
</table>
Health Specific:
- Table 1-2 (p.28) presents the contribution of nutrition status to Goals 4, 5 and 6 which are all specific to health.
- Not enough research on the effect of malnutrition on the efficacy and safety of anti-retroviral treatment and on resistance to opportunistic infections. (p.28)
- An information gap is the need to document social access/discrimination with respect to consumption, nutrition status, and assets by different types of ethnic/political/AIDS groups. (p.57)
- Define hunger reduction actions for urban hunger that might create synergies with rural nutritional interventions. (p.68)

Non-Health Specific:
- Need to diagnose failures in policy and capacity-building, examine the failure of political commitment as a cause of hunger esp. due to preferential investment in urban areas over rural areas or along racial, religious or ethnic boundaries (p.68)
- TF identified and selected “Hunger HotSpots” (highest priority sub-national areas for hunger reduction). For each will identify and characterize the major vulnerable groups; diagnose causal factors of hunger; conduct a critical analysis of past efforts; identify effective interventions and identify and select strategies for implementing these interventions (pp. 69, 70, 190-191).
- Need to rebuild national research systems and recommend on-site research, i.e., decentralized R&D systems with active local innovation, farmers’ participation and adaptive research supported by research institutions that also work on key problems i.d. in the field. (p.182)

Task Force 3- Education and Gender Equality: Gender Equality Report

(Note: Project Web site indicates the existence of another working group that focuses on education but no documents produced by that group were available as of March 17, 2004.)

Background Paper
Health Specific: None
Non-Health Specific:
- The task force notes the limitations of the actual indicators and notes the need to develop indicators that “measure quality of progress toward the goal instead of just quantity of progress” (p.12).
- [Development of] interventions that give priority to marginalized and excluded populations (p.29).

Interim Report
Health Specific:
- Operational framework of gender equality includes 3 dimensions. The capabilities domain includes health as well as education and nutrition. The access to resources and opportunities domain refers to equality in opportunity to use or apply basic capabilities, including health. The security domain means reduced vulnerability to violence and conflict. (p. i-ii)
- With donor support, recommend strengthening WHO and ILO effort to work with countries in developing international systems of sex-disaggregated data and statistics in the areas of informal employment, gender wage gaps and prevalence rates of violence against women. (p. viii-ix, 85)
- WHO needs to consolidate the methodological experiences of the country-level surveys on domestic violence to develop guidelines. (p.96)
- Need to further develop methodologies for costing gender equality including the financial costs of
interventions to achieve gender equality in education, reproductive health and violence against women and note that TF is doing work in this area. (p.87-93)

Non-Health Specific: included in the above

Task Force 4- Child Health and Maternal Health

Background Paper

Health Specific:

- **Overall research priority:** “Research programs supported and implemented by the international health community need to give more attention to questions of access and utilization. This means that the bulk of research funding in maternal health and child health should be devoted to research on the implementation of interventions proven to be effective, aimed at scaling up and ensuring access and utilization in practice. This includes attention to improved delivery systems, monitoring and evaluation.” (p. 67) Specifically,
  - New research on the referral to, access to, and utilization of health care services taking into account availability of services and including the role of financial barriers, relationships between facilities and communities (including, demeaning treatment and discrimination), culturally-embedded views of appropriate childbirth practices, and locally-specific issues. (p.24)
  - Programmatic research regarding how to take successful interventions to scale (p.58)
  - Additional research on HIV prevention to: (p.52)
    - document the protective role of breastfeeding in high HIV prevalence areas
    - examine new interventions like chlorhexidine leaning and micronutrient supplementation
    - to better integrate HIV/AIDS awareness and prevention into ongoing maternal and child health care programs

- Defining equity-sensitive targets and indicators (p.64)

Interim Report

Health Specific:

- Authors stress the need for understanding of medical, behavioral or public health *interventions* as well as the context of these interventions in terms of the social, political, economic and institutional structures in which health systems are embedded and which determine access to those interventions. (p.9)

- Need to understand not only the *efficacy* of interventions but also the *effectiveness* of delivery strategies. (p.9)

- **Scaling-up** (implementing policies and programs to make the interventions available and accessible to all) is the core problem in current strategies and one that is under-theorized and under-conceptualized so further research is needed in this area (pp.10, 61).

- Authors also note that along with scaling-up, *utilization* needs to be examined (i.e., implementing policies and programs that encourage and enable those who need the interventions to use them), for example (pp.61, 66)
  - What role does trust have in utilization decisions? How do information and trust interact and what are the implications for the organization of services?

- Note the need for goals, targets and indicators that can be used to track the reduction in mortality for the poorest and other marginalized groups and to track the gap between rich and poor (p.28), that is indicators that are equity-sensitive. Also need indicators for monitoring overall impact on the health systems (e.g., assessing the strengthening of health systems) (p.88).

- Note the fact that the gender dimension of human resources for health in developing countries is
With respect to the Poverty Reduction Strategies, recommend that (among other aspects) they should be *evidence-based*, that is (p.99),
- Analyze operational and policy bottlenecks for each service delivery mode at country and subnational level
- Identify options for corrective action and the expected resulting improvements of coverage (especially of the poorest groups)
- Estimate the additional costs and impacts on MDG’s (and thus the allocative efficiency) of each strategy and policy options and select priority options.
- Need for empirical evidence on the way health systems function for poor and vulnerable groups (p.102)

Task Force 5- Major Diseases and Access to Medicines: Working Group on **Tuberculosis** *

**Background Paper**

**Health Specific:**
- Has specific section on research priorities including the aspects below. (pp.32-35)
- **New diagnostics:** rapid drug susceptibility testing, detection of latent TB infection (p.32)
- **New drugs** (p.33):
  - To shorten and/or simplify the treatment of TB
  - More effective treatment(s) for MDR-TB
  - More effective treatment(s) of TB infection
- **New vaccines:** develop new vaccines effective in protecting the uninfected and/or preventing disease among the infected. (p.34)
- **Operational research**¹: on health policies, systems and service delivery of TB. Utilizing systems theory, resource dependency theory, and neural network modeling to examine how to create or reconfigure networks of treatment or information including examining structural, governmental and operational networks and the relationships on which they are built from the global to local levels (p.35). Some specific examples of areas to examine:
  - Lack of political commitment
  - Inadequacy of financial systems apart from CEA
  - TB and HIV program collaboration in supporting health care providers (p.28)
  - MDR-TB control re. drug supply, program oversight, development and expansion of communication and information systems. (p.28)

**Interim Report**

¹ Defined as “research aimed at developing interventions that result in improved policy-making, better design and implementation of health systems, and more efficient methods of service delivery” p.38-39 (FN 84)
Health Specific:

- Has specific section on R&D priorities regarding diagnostics, treatment, vaccines and operational research (pp.55-62). Restates original research priorities in the background paper and expands on some as described below.²
  - **Diagnostic tools:**
    - Tools rapid drug susceptibility testing
    - Tools for detection of latent TB infection
    - Better data on impact of early case detection on TB transmission
    - Cost-effectiveness of routine or clinical TB in disease-endemic countries
  - **New drugs:** develop new, effective and affordable anti-TB drugs
  - **New vaccines:** To protect the uninfected and/or prevent disease among the infected

General recommendations include the following (pp.68-71):

- **Pro-poor strategies for scaling up detection and treatment of TB:** explore measures for accountability of governments and international community. (p.68)
- **Infant and childhood TB:** (p.68)
  - Expand work on diagnostic algorithms and the study of the epidemiology of childhood TB, especially in low-income settings
  - Identify operational approaches to enabling health system workers to pursue intensified case finding and preventive treatment for children
- **Research:** Invest in “research to shape the future” including (p.70):
  - Working with the research community to define the characteristics of useful tools and the economic and social benefits of new tools
  - Promoting operational research to address constraints to TB patient demand and participation in TB care
  - Assess progress in ensuring equitable distribution of DOTS coverage across all socio-economic groups
- **Workforce:** Address the health workforce crisis by collaborating with relevant ministries to assess HR needs for general sector and TB control. (p.70)
- **Health systems:** strengthen systems primary care delivery in the context of TB care by (p.70):³
  - Developing process indicators needed for monitoring and evaluation
  - Developing generic PPM DOTS tools and protocols
  - Pursuing a research agenda to expand knowledge and evidence base (unspecified here)
- **Political commitment:** Engage in country-by-country political mapping and analysis of constraints to progress in TB control to enhance political commitment. (p.69)
- **Mobilizing communities and corporate sector:** Supporting countries in the development of information systems to include the addition of indicators on advocacy, communication and social mobilization (p.69).

---

² Interim report authors note that this section is excerpted from Global Partnership to StopTB Working Groups, http://www.stoptb.org
³ There is a new Health Systems Working Group and it has commissioned work on several areas including scaling up health interventions, health systems at the community level and harnessing new global health resources (p.47).
Background Paper

Health Specific:

- Has specific section on research priorities that includes:
  - **Basic research**: on the virus and the immune system, especially on vaccines specific to viral strains prevalent in developing countries (p.12)
  - **Clinical research**: on the disease and opportunistic infections (p.12)
  - **Social and behavioral research**: (p.12; pp.22-23)
    - sexual behavior and injection drug use
    - interests, beliefs, and concerns of particular groups
    - sources and consequences of stigma
    - effectiveness of measures to combat stigma
  - **Development of drugs, vaccines and other technologies**: (p.12)
    - microbicides and other female-controlled prevention technologies
    - simplified treatment regimens
  - **Operational research**: (p.12)
    - effectiveness of prevention and treatment approaches in particular environments
    - prevention and treatment in resource-poor settings
    - combined AIDS-TB programs

Interim Report

Health Specific:

- Authors state right out that “much is known about what works in combating HIV/AIDS” so focus more on implementation than on defining recommendations for new research. Report does include a short section on “new ideas and technologies” for prevention (pp.35-36).
- **Monitoring**: Propose additional treatment target that points to the need for a system for monitoring the proportion of women, children under 10, and members of key vulnerable populations among those receiving antiretroviral therapy in both the public and private sectors (p.19).
- **Prevention**:
  - “Single highest research priority” should continue to be the development of an effective and affordable HIV vaccine but it is a long term goal (p.36)
  - Development of vaginal microbicides (p.36)
  - Antiretroviral drugs for prevention (e.g., using low, steady does of ARVs) (p.36)
  - Development of affordable diagnostic kits for STIs (p.27)
  - New research on the significance of medical transmission of HIV through the use of unsafe medical practices (p.40)
- **Treatment- Operational Research**:
  - Approaches to scaling up treatment including the development of simplified, standardized treatment protocols (p.49) *(similar to TB and DOTS)*
  - Research in resource-poor settings on the best and most efficient methods of adherence support for ART treatment (p.52)
  - Designing models of service delivery that reduce stigma (p.54)
- **Logistics and Infrastructure**:
  - Research to determine the amount of space needed to care for a certain number of patients on
ART as part of need to expand and improve physical infrastructure (p.53)

- Development of better packaging to support adherence (e.g., blister packs, standardized pediatric formulations) (p.53)
- Development of high-potency second-line therapies that do not require refrigeration (p.53)

Social and behavioral research:
- Causes of stigma and the best ways to combat it. (p.66-67)

Task Force 5- Major Diseases and Access to Medicines: Working Group on Malaria

**Background Paper**

Health Specific:
- Paper has specific section on R&D (pp.24-32) and R&D recommendations.
- One of the strategies to achieve the MDG malaria objective relates specifically to R&D: “Strengthen research and development to improve existing methods and develop technologies that seem likely to facilitate anti-malarial interventions” (p.5)
- New vaccines: production of malaria vaccines (including consideration of the developmental stage(s) that should be targeted. (p.24)
- New anti malarial drug research and development: develop new anti-malaria drugs (p.27)
- Improved diagnostic methods: Refinement of existing Rapid Diagnostic Tests (RDT) to increase sensitivity and specificity; also new RDTs for the assessment of treatment failure or drug resistance (p.30)
- Risk mapping: Develop high resolution risk maps and calibrate and standardize rapid assessment strategies. (p.31)
- Anopheline ecology: circumstances of transmission, structure of vector populations, etc. (pp.31-32)
- Novel Anti-Vector Methods: Modification of vector populations by translating applications of molecular biology (i.e., competence inhibiting genes, promoters and transformation vectors) into useful malaria suppressive assets including construct-bearing mosquitoes. (p.32)


**Background Paper**

Note: Paper has specific sections on evidence gaps (pp.13-16) and R&D (pp.46-53).

General:
- Authors noted the lack of proper monitoring, data collection, and evaluation of program performance (p.14)

Health Specific:
- Poverty-Related Aspects:
  - Seasonal cycles of poverty and their impact on the purchase and use of medications in rural areas (p.13)
• **Gender analysis** to examine the factors that determine women’s and girls’ differential access to health care and medicine such as HIV/AIDS treatment (note closely related to the gendered structure of poverty) (p.13)

  ➢ **R&D on new medicines for diseases affecting poor populations**: including tropical diseases such as Chagas, sleeping sickness, kala-azar; and major infectious killers such HIV/AIDS, TB and malaria) (p.46)

Interim Report

Note: Unlike the background paper, the interim report does not have specific sections on evidence gaps and R&D needs.

Health Specific:

➢ **Data Collection, Measurement and Monitoring Systems:**
  • Need consistent measures of access to drugs that reflect the extent to which barriers impede access to needed drugs and that can be used to compare across countries and situations (p.26)

➢ **Increase availability of drugs through R&D on new medicines:**
  • To treat diseases of poor populations that have been neglected (e.g., HIV/AIDS, malaria and TB) (p.7)
    • Recommend greater emphasis on these in basic academic research (p.49)
  • Research on the merits and safety of indigenous medicines particularly traditional herbal medicines (p.66)

➢ **Gender-related Aspects:**
  • Unspecified “innovative outcomes research on women and children”
  • Collect and disaggregate by gender data on access and utilization as a basis for informed policies
  • Social science research relating to use of medicines by women.

---

Task Force 6- Environmental Sustainability

**Background Paper**

Health Specific: None

Non-Health Specific:

➢ Two priority research areas mentioned are:
  • **Environmental degradation** (p.5): Research on overall crops system resistance (not just specific crop varieties) to a diverse range of diseases and pathogens.
  • **Functioning of the ecosystem** (p.9):
    • Better understanding of interventions by examining them more within the context of development
    • Better understanding of the functioning of complex ecosystems and their response to exogenous shocks
    • Better understanding of the links between biodiversity/ecosystem change and human well-being

---

4 Includes a dissenting statement by the industry representatives that does not state any explicit R&D priorities for reaching MDGs.
- Conduct cost-benefit and cost-effective analyses of biodiversity and ecosystem services. (p.9)
- Developing ways to better communicate existing and newly gained scientific information so policy makers and the public can understand it in order to implement the needed actions. (p.9)
- Creating locally specific and adaptive frameworks of action (p.17)
- Need to develop appropriate indicators to measure and map biodiversity

**Interim Report:** Not available as of March 17, 2004.

---

**Task Force 7 - Water and Sanitation**

**Background Paper**

**Non-Health Specific:**

- Need for technological innovation in drainage and solid waste disposal. (p.66)
- Research into the feasible approaches to the planning and incremental implementation of programs for the broader range of sanitation services taking into account effective demand and financial capacity. (p.67)
- Need to develop databases and better mapping techniques (p.26).

**Interim Report**

**Non-Health Specific:**

The report proposes a set of critical actions including the following that involve additional data collection and analysis (pp. 92-109):

- Proposition 11 on monitoring and evaluation calls for a focus on access to services rather than infrastructure, also it should include (pp.98-99)
  - Aspects such as convenience, reliability, sustainability, and adequacy of water supply and sanitation of services.
  - Equity of access by women and the poor, in particular
- Proposition 14 calls for incorporating analysis of gender and water into policy development and program design, for example, considering (p.101)
  - Differences and inequalities between and among women and men, such as the interrelationship (and visibility) of productive and domestic uses of water
  - Women’s and men’s access to and control over water and other key resources linked to water such as land, credit and extension services
  - Gender biases within institutions working on water resources
- Proposition 15 calls for innovations in both hardware (e.g., in wastewater management in large urban areas) and software as well as innovation in institutional and financial mechanisms (pp.102-103). Also propose creating an “international strategy forum” to prioritize work on key technical obstacles to meeting the goals (linked to an innovation fund).
- In a section on key actors and responsibilities, the Task Forces proposes the following activities relevant to research priorities and knowledge gaps (pp.110-114):
  - Promote and finance R&D that fosters innovation in hardware and software
  - Learn more about the characteristics of households that lack access to water supply and sanitation services to better understand obstacles to expanding access
  - Better document the economic benefits of improved water and sanitation services
  - Increase R&D on technologies aimed at meeting several MDGs simultaneously
- Foster R&D of appropriate affordable sanitation technologies
- Conduct research and disseminate findings on effective strategies for providing sustainable water supply and sanitation in challenging settings (e.g., unregularized urban communities, small towns)
- Review and address any gender biases within institutions, policies and programs

Note: * Non-health sector specific but are related to health since water and sanitation are some of the main determinants of health status.

Task Force 8- Improving the Lives of Slum Dwellers

Background Paper

Health Specific: No specific focus on health.
Non-Health Specific: None, but does have an appendix on the research the TF has conducted to define a strategy for working on the corresponding MDG.

Interim Report
Non-Health Specific:
- Calls for increased use of disaggregated data rather than urban averages to better characterize the problems of the urban poor.
- Notes that the main challenge in projects dealing with land tenure upgrading remains scaling-up
- Recommends building spatial and information systems for land management

Task Force 9- Open and Rule-Based Trading System

Background Paper

Note: The background paper is very general. The authors state that it is an initial and incomplete examination of the topic. Authors mention that research priorities will be specified in the interim report.

Interim Report: Not available as of March 17, 2004

Task Force 10- Science, Technology and Innovation

Background Paper

Note: The paper focuses on strategies for funding and promoting research and improving research systems, rather than on defining content-specific research priorities. It identifies policy and institutional mechanisms to for promoting the use, adoption and development of science and technology.

Interim Report
Note: Like the background paper, the focus of this report is on mechanisms to promote science, technology and innovation and it does not address content-specific research priorities. As the authors state,

“This paper outlines elements of a global action program to apply science, technology, and innovation in order to meet the…MDGs…” (p.19)

General:
Notes the importance of investment in under-funded research of relevance to developing countries and its particular importance in several fields including public health, in particular pharmaceutical research (p.68).