

Chapter 9

eHealth Policy in LMICS: National Frontiers, Global Challenges

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Introduction

The World Health Organization (WHO) defines eHealth as the use of ICT for health.¹ eHealth involves the application of tools such as telemedicine, health information systems, mobile and medical devices, e-learning platforms, and decision support systems. eHealth is employed to improve the delivery of health services and to support better health and health systems throughout the world. eHealth projects continue to expand globally. Initiatives are being implemented in more than 100 nations² with an eHealth marketplace estimated at \$96 billion and growing.³ Collectively, these developments present a timely opportunity to address persistent health system challenges, support the march toward achieving the health-related Millennium Development Goals (MDGS), deliver critical services across the continuum of care, and to promote progress on larger health systems issues such as more equitable resource allocation and improved governance and leadership.

¹World Health Organization. *eHealth resolution* (Resolution WHA 58.28). Geneva: 58th World Health Assembly Resolutions, Decisions and Annexes List; 16–25 May 2005; Available from URL: http://apps.who.int/gb/or/e/e_wha58r1.html; pp. 108–110.

²World Health Organization, *Atlas: eHealth country profiles*. Geneva: The Global Observatory for eHealth; 2011; p. 7.

³Boston Consulting Group, *Understanding the eHealth Market*, Bellagio Making the eHealth Connection Conference, 2008, p. 3.

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As the use of eHealth expands, a number of groups, including policymakers, international organizations, donors, funders, academicians, and implementers, are calling for increased agreement on the eHealth principles, standards, tools, and policies used by different countries and more alignment of eHealth projects and programs with national health priorities. For example, the report on the Global Strategy for Women's and Children's Health calls for, among other things, support of country-led health plans, and innovative, efficient approaches to integrated health service delivery.

References to increased agreement on eHealth are included in WHO resolutions,^{4,5} efforts of the Global Health Initiative (GHI)⁶ and Calls to Action by the H8,⁷ PARIS21,⁸ the Rockefeller Foundation's Making the eHealth Connection collective⁹, and the Global Health Information Forum.¹⁰ Expert coalitions, particularly in Africa and Asia, have progressed on devising technical design and standardization guidelines for eHealth, open architecture coordination, and best practices in eHealth implementation in low-resource settings. Despite these declarations and well-intentioned efforts, the challenge of effective public policy that supports such infrastructure looms large, particularly in developing countries where health care and system inequities can be more pronounced.

During the last decade, I have investigated and worked to improve eHealth policy process, resources, and coordination in LMICs through field work, education, and global diplomacy. This chapter outlines my critical synthesized learnings for the benefit of LMIC health ministers and for the larger field of global eHealth stakeholders including donors, government decision-makers, researchers, and

⁴World Health Organization. *Strengthening health information systems* (Resolution WHA 60.27). Geneva: 60th World Health Assembly Resolutions, Decisions and Annexes List; 14–23 May 2007; Available from URL: http://apps.who.int/gb/or/e/e_ss1-wha60r1.html; pp. 100–102.

⁵World Health Organization. *eHealth resolution* (Resolution WHA 58.28). Geneva: 58th World Health Assembly Resolutions, Decisions and Annexes List; 16–25 May 2005; Available from URL: http://apps.who.int/gb/or/e/e_wha58r1.html; pp. 108–110.

⁶U.S. Global Health Initiative. *Global Health Initiative at a Glance*. Available from URL: <http://www.ghi.gov/about/index.htm>.

⁷Chan M, Kazatchkine M, Lob-Levyt J, Obaid T, Schweizer J, et al. *A call for action on health data from eight global health agencies: meeting the demand for results and accountability*. PLoS Med 2010; 7(1): e1000223. Available from URL: doi:10.1371/journal.pmed.1000223.

⁸Participants of the PARIS21 2009 Consortium meeting. *Dakar declaration on the development of statistics*. Paris: PARIS21; November 2009; Available from URL: http://www.oecd.org/document/48/0,3343,en_21571361_41755755_41760432_1_1_1_1,00.html.

⁹Rockefeller Foundation. Making the eHealth Connection, Sign on signatories [Internet]. New York (NY):Rockefeller Foundation; [cited 2012 Jan 8]. Available from URL: <http://ehealth-connection.org/ehealthpetition/212>.

¹⁰Participants of the Prince Mahidol Award Conference (PMAC) 2010 Global Health Information Forum. *Call to action: global health information forum*. Bangkok: PMAC; January 2010; Available from URL: http://www.pmaconference.mahidol.ac.th/index.php?option=com_content&view=article&id=201%3Acall-to-action-final&catid=966%3A2010-conference&Itemid=152.

other experts. The insights from this work will prove helpful in building future cooperative initiatives in many developing countries.

LMIC eHealth Policy—National Considerations

Policy is a set of statements, directives, regulations, laws, and judicial interpretations that direct and manage the life cycle of an issue.¹¹ Studies conducted by WHO, the Health Metrics Network, and others have revealed that policy is among the weakest components of country eHealth and health information systems. This failing is a growing tension point in low- and middle-income countries (LMICS) where eHealth projects and programs continue to expand. A recent study found eHealth projects or programs operating in 58 LMICs on the continents of Africa, Asia, Europe, and the Americas. Countries most frequently cited as eHealth hotspots are as follows: Kenya, India, Tanzania, Rwanda, South Africa, Peru, Vietnam, Thailand, the Philippines, Indonesia, and China. While eHealth project reach is significant, so are budgets. LMIC eHealth projects have an average dedicated budget expenditure of \$900,000 USD per annum.¹² This suggests a powerful and wide scope for health technology initiatives with an acute need for effective tools and policies.

LMIC countries that introduce and implement eHealth generally encounter one or more of the following policy development issues:

1. Drafting a high-level eHealth policy roadmap;
2. Translating high-level eHealth policy into language for national legislation;
3. Updating an already established eHealth policy; or
4. Facilitating cross-border eHealth policy collaboration with other countries.

One of the first helpful steps to undertake in the policy development process is to review relevant information in global, consensus-based principles, declarations and calls to action related to eHealth. Examples of such documents include declarations by the H8 (<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000223>),¹³ PARIS21 (<http://www.paris21.org/sites/default/files/DDDS-en.pdf>),¹⁴ participants of the 2010 Global Health Information Forum

¹¹Richard J, et al. Telehealth policy—looking for global complementarity. *Telemed Telecare* 2002;8 (Supp 3).

¹²Gerber, T and Seebreghts C. *Aligning eHealth Initiatives for Results*, p. 3. Study Results Available from URL: <http://www.globalhit.net/IDRC-Results/>.

¹³Chan M, Kazatchkine M, Lob-Levyt J, Obaid T, Schweizer J, et al. A call for action on health data from eight global health agencies: meeting the demand for results and accountability. *PLoS Med* 2010; 7(1): e1000223. Available from URL: doi:10.1371/journal.pmed.1000223.

¹⁴Participants of the PARIS21 2009 Consortium meeting. *Dakar declaration on the development of statistics*. Paris: PARIS21; November 2009; Available from URL: <http://www.paris21.org/sites/default/files/DDDS-en.pdf>.

(http://www.pmaconference.mahidol.ac.th/index.php?option=com_content&view=article&id=201%3Acall-to-action-final&catid=966%3A2010-conference&Itemid=152),¹⁵ and the 2007 World Health Assembly Resolution 60.27 (http://apps.who.int/gb/ebwha/pdf_files/WHASSA_WHA60-Rec1/E/cover-intro-60-en.pdf) on Strengthening Health Information Systems.¹⁶

A second helpful step in the eHealth policy development process is to review and better understand how other countries have addressed with these issues. The World Health Organization's Global Observatory for eHealth (<http://www.who.int/goe/data/en/>) is an excellent place to start for insight on these issues as is the eHealth Resource Section of the Asian eHealth Network (<http://www.aehin.org/Resources/eHealth.aspx>) and the ICT Toolkit for Women's and Children's Health(<http://www.who.int/pmnch/knowledge/publications/ict/en/>).

And finally, as national LMIC ministers and others plan the introduction and/or expanded implementation of health information systems, a multitude of in-depth policy questions must be considered. The list of queries below can serve as a launching pad for such a discussion. Key questions are in the areas of: (1) data stewardship; (2) governance and accountability; (3) workforce training and capacity building; (4) architecture and interoperability; and (5) financing.

Key LMIC eHealth Policy Questions

Data Stewardship

1. What are appropriate eHealth information-sharing and data policies?
2. What policies are required for effective eHealth information transfer and reporting between regional, district, and national facilities? Will policy require personal identifiers?
3. Will policy mandate the appointment of a Chief Data Officer at the national and/or district levels for effective eHealth information management?
4. Will policy mandate the establishment of an eHealth data repository? If so, what are the appropriate requirements to govern such repositories?

Governance and Accountability

1. What key policies strengthen the government's institutional capacity to conduct eHealth policy planning, management, regulation and enforcement?

¹⁵Participants of the Prince Mahidol Award Conference (PMAC) 2010 Global Health Information Forum. *Call to action: global health information forum*. Bangkok:PMAC; January 2010; Available from URL: http://www.pmaconference.mahidol.ac.th/index.php?option=com_content&view=article&id=201%3Acall-to-action-final&catid=966%3A2010-conference&Itemid=152.

¹⁶World Health Organization. *Strengthening health information systems*. Geneva: 60th World Health Assembly Resolution List; 2007; Available from URL: http://apps.who.int/gb/ebwha/pdf_files/WHASSA_WHA60-Rec1/E/cover-intro-60-en.pdf.

2. How can diverse governmental parties responsible for eHealth policy be effectively coordinated and managed? Is a multi-stakeholder committee required?
3. How can non-governmental actors and private sector players be encouraged to participate in eHealth policy development and implementation? Will policy incentivize or mandate such participation?
4. How can eHealth data be collected in compatible formats and submitted regularly to relevant authorities using harmonized reporting?
5. How can eHealth policy integrate and align with national health strategic and reform plans, relevant international mandates, and donor program requirements?

Workforce Training and Capacity Building (Human Resources)

1. What policies support adequate eHealth staffing levels, effective staff training, and retention related to HIS? What lessons can be learned from capacity-building policies and efforts in areas of health care?
2. How can policy support an expansion of in-country legislative specialists and/or increased technical assistance to draft or update eHealth policy?
3. What eHealth policy information can be offered on a free, open access basis to increase knowledge transfer?

Architecture and Interoperability

1. What are the key elements of policy that will support integrated eHealth (e.g., system integration and better interoperability)?
2. What policies can be put forward at the country and global level to ensure increased participation in the standards development process and more cost-effective standards access?
3. How can the international standards harmonization process and policy support eHealth strengthening?

Financing

1. What type of donor collaboration and cooperation can support eHealth development nationally and across borders?
2. What funding and business models lead to eHealth sustainability and how can they be supported and incentivized through policy?
3. How can collaborative public and private sector eHealth funding models be encouraged?
4. How can informative and regularly updated documents about eHealth progress be created for diverse stakeholder such as ministers, system users, healthcare providers, patients, and the media?

Global Issues

1. How can eHealth policy priorities be integrated into the health agendas of global institutions and moved forward?
2. How can effective eHealth policy across borders be achieved?

Emerging LMIC eHealth Policy Gaps

As efforts advance to gather information about existing eHealth policy in LMICs, key questions, roadblocks, and clear policy gaps have emerged. Overarching challenges identified through in-country and global policy stakeholder engagement to date include things such as:

- **The difficulty and time-intensive nature of crafting meaningful and detailed legislation from high-level policy statements;**
- **Policy Teeth**—“Policy” can have very different meaning in LMIC context, for example, policy can be an outline of a plan that has not even been considered by the legislature.
- **Locating existing regulations related to eHealth which are nested in diverse, often antiquated laws, and governed by numerous ministers.** Common national laws to be examined in eHealth policy formulation include but are not limited to: national health strategic and reform plans, sanitary codes, national statistical acts, marriage, birth and death registries, privacy and security practices, freedom of information acts, digital signature requirements, hospital and healthcare provider reimbursement, e-government, and health systems strengthening initiatives. Policy alignment with requirements from donors and international bodies must also be considered.
- **Achieving effective stakeholder engagement and coordination on eHealth policy within the government and between the public and private sectors in fragmented systems with multi-sectoral responsibility is difficult.** National ministers that may be involved in national eHealth policy can include Ministers of Health, HIS, Public Health and Social Welfare, Sanitation, Labor, Finance, Telecommunications, ICT or eHealth, Justice, Immigration, and Education. The National Statistics Office and experts in charge of such issues as e-government will also be consulted.
- **A shortage of qualified policy staff and experts at the national level and a revolving door of consultants;**
- **Inadequate education on standards and interoperability issues and lack of a standard collaborative to fill the gap;**
- **Addressing tricky and controversial data access issues;**
- **District and local solutions at play**—LMICs have more locally driven and customizable strategies: e.g., open source tools and community and non-traditional health workers.
- **Maintaining eHealth project financing and sustainability in an environment of competing priorities and political instability.**
- **Donor Alignment is an issue**—Multiple donors mean multiple policy alignment, evaluation, and reporting issues.
- **The Overlay of Global Goals and Institutions**—Policymakers look to MDGs, WHO, and regional bodies for guidance and policy alignment. eHealth often must be seen and dealt with through the prism of major global health issues such as health system strengthening, health equity, universal health coverage,

civil registration and vital statistics, and/or capacity building or large-scale infrastructure reform. Constantly realigning eHealth with the global health flavor of the month can dilute, muddy, and obscure health technology programs, implementation, and results.

LMIC eHealth Policy: A New Model

Clear and workable policy is a key anchor for successful LMIC eHealth implementation. However, to move forward in this area, attention must be focused on:

- Increased sharing of eHealth implementation experiences;
- More dialogue between eHealth movements (eHealth, mHealth and health information systems);
- Bolstering available resources on policy best practices;
- Supporting the development of country-level laws and growing advocacy related to eHealth in LMICs;
- Finding new and cost-efficient ways to address challenging policy gaps;
- Building reuse considerations and interoperability principles into eHealth;
- Forming a collaborative of national eHealth Stakeholder Councils;
- Conceiving new project funding models less tied to entrenched money sources and issue agendas;
- Informing donor thinking and giving, as well as larger global health policy discussions.

In pursuit of these goals, my recent strategic work has been to develop a framework for a new, iterative, and resource-rich eHealth policy model that empowers LMIC health ministers and includes the following on a regional and global scale.

Policy resources and activity	Description
Policy guides	A summary of existing notable activities national-level eHealth policy, an analysis of gaps that should be addressed and a guide for countries drafting or updating eHealth policy
Expert group discussions	Expert multi-stakeholder groups that discuss technical, legal, organizational, and policy issues in eHealth, leveraging global or regional meetings, and on-line discussion forums
eHealth legislative templates	Develop ready-to-use legislative templates that will guide countries in drafting and introducing eHealth policies
Resource center	Create a systematically updated center will contain eHealth policy resources and an online collaborating space to aid users
International policy resolution	Promote an official and actionable eHealth policy resolution could be taken up by global or regional bodies
Rapid response teams	Form flexible teams of noted technical, organizational, and policy experts that can be quickly deployed based on country or regional need

Important work continues on developing components of this model and seeking significant and collaborative funding for its deployment.

Conclusion

The provision of LMIC eHealth policy tools is crucial at this time when the UN Millennium Development Goals deadline is close at hand and many countries are moving toward health technology implementation. eHealth fundamentally supports more equitable, empowering, and sustainable health systems. And, policy can be a very powerful tool in achieving these objectives. As United Nations Secretary General Ban Ki-Moon states, “the right policies and actions, backed by adequate funding and strong political commitment, can yield results.”¹⁷

¹⁷Moon, Ban Ki. *The millennium development goals report 2009* (Foreword Remarks). New York: The United Nations; 2009; Available from URL: http://www.un.org/millenniumgoals/pdf/MDG_Report_2009_ENG.pdf.