Joint Inter-Ministerial Policy Dialogue on eHealth Standardization and Second WHO Forum on eHealth Standardization and Interoperability

10-11 February 2014
Geneva, Switzerland

World Health Organization

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS

LIST OF ACRONYMS

AFRO	WHO regional office for Africa
AMRO	WHO regional office for the Americas
CEN	European Committee for Standardization
COACH	Canada's Health Informatics Association
CSO	Civil society organizations
EHR	Electronic health records
EMRO	WHO regional office for the Eastern Mediterranean
EU	European Union
EURO	WHO regional office for Europe
GS1	Global Language for Business
HIE	Health Information Exchange
HL7	Health Level 7
ICD-11	International Classification of Diseases, 11th edition
ICT	Information and communications technology
IEEE	Institute of Electrical and Electronics Engineers
IGO(s)	Inter-governmental organization(s)
IHE	Integrating the Health care Enterprise
IHTSDO	International Health Terminology Standards Development Organization
IMIA	International Medical Informatics Association
ISO	International Organization for Standardization
IT	Information technology
ITU	International Telecommunications Union
NGO(s)	Non-governmental organization(s)
NHS	National Health Service (United Kingdom)
PAHO	Pan-American Health Organization
PHDSC	Public Health Data Standards Consortium
SDO(s)	Standards development organization(s)
SEARO	WHO regional office for South-East Asia
SMO(s)	Standards maintenance organization(s)
SNOMED-CT	Systematized Nomenclature of Medicine Clinical Terms
WHA	World Health Assembly
WHO	World Health Organization
WPRO	WHO regional office for the Western Pacific

EXECUTIVE SUMMARY

As the United Nations (UN) agency for health, the World Health Organization (WHO) recognizes the importance of health data standardization in eHealth systems and services, and the need for interoperability of data and devices between and within those systems and services.

WHO convened the second Forum on eHealth Standardization and Interoperability in Geneva from 10 to 11 February 2014. The objective was to facilitate continued dialogue among health data standards development organizations (SDOs), standards maintenance organizations (SMOs), academic institutions, subject matter experts and Member States toward the development of a policy framework for full implementation of health data standards for interoperability of eHealth systems within countries.

Participants in the Forum included delegates of Member States, representatives from SDOs and SMOs, UN agencies, academic and research institutions, implementing partners, donor organizations, subject matter experts and WHO technical programmes of both headquarters and regional offices.

Over 190 individuals from 59 countries contributed to the dialogue, including one Minister of Health; delegates of Ministers of Health from Member States; Ambassadors; representatives from Member States' permanent missions to the United Nations in Geneva; and senior officials of Ministries of Health. Other participants followed the event through live webcasting.

The Forum addressed 19 key questions (Annex B) related to six thematic areas.

The Forum's six thematic areas were as follows:

- Policy approaches in eHealth standardization and interoperability
- Successful policy interventions to overcome barriers in standards adoption
- Governance, stewardship, equity and health systems integration of data standards and interoperability
- Policy and statutory authority components
- Regional perspectives on governance and stewardship of eHealth standardization
- Essentials of a good policy framework for adoption of standards for interoperability of eHealth systems.

The outcomes of the event were summarised in the plenary session as follows.

eHealth policy for standardization and interoperability in a national context should:

- Be embedded in a national health plan, and an eGovernment plan if one exists. Its view must be long term, provide continuity, and commit to long-term investment. Development and implementation of national eHealth policies for standardization and interoperability should be a national effort and must include stakeholders from the health sector, non-health sectors of national governments, and non-state actors.

- Be patient-centred, emphasising service quality, equity, patient outcomes, patient safety and population outcomes.

- Be based on mutual trust and understanding and genuine collaboration between all stakeholders from lawmakers to patients, facilitated from the start by a participative approach to policy-making, and encompassing public and private partnerships where necessary.

- Support an evidence base for the socio-economic benefits of eHealth, and encompass user utility and outreach programmes to ensure that all stakeholders, including patients, are aware of the use, benefit and risks of eHealth and are engaged in related discourse and decision-making, and its implementation.

- Adopt appropriate electronic Health Information Exchange (HIE) technology, including at national and subnational levels, in vertical programmes, and in public and private health care facilities.

- Set health data and health IT standards to ensure interoperability at data-, device- and system-levels, in a framework containing a fixed core set of maintained standards allowing for a degree of innovation outside that core set and allowing for development based on the capacity and maturity of eHealth systems and services; and regulate an appropriate degree of adoption in the country context.

- Use existing international standards where possible and adapt specific standards to suit national contexts (taking necessary care to ensure interoperability and backward compatibility, as applicable).

- Provide unique identifiers for patients, health care workers and health care facilities, with verification and authentication procedures.

- Ensure the safety of interoperable medical devices, and ensure security, defining privacy and security policies addressing technology use in health care delivery.

- Build capacity from country and ministry level down to that of frontline health workers. This includes financial and academic capacity as well as technical and human resource capacity.

- Ensure good governance, balancing top-down and bottom-up approaches, encompassing: equity and accessibility; legality; user rights in line with human rights; privacy; responsibility; and accountability to citizens and to the state. Compatibility of technologies, efficiency, open dialogue and a shared vision on use of data are necessary for implementation. In monitoring compliance, clear goals and key indicators for monitoring and evaluation are needed, with mechanisms for social participation.

■ Support competency-based education and capacity building in health informatics, with standardized curricula and measurable learning objectives at national and sub-national levels. Training should be for the health workforce, including social workers, and should cover eHealth policy development and planning, communications and leadership as well as technical content. Training, including in-service training, can provide a valuable opportunity for partnership with academia, technical colleges and other relevant bodies.

■ Encourage relevant ministries of national governments to include eHealth core competencies in job descriptions for relevant posts.

The remaining pages of this document summarize the proceedings and outcomes of the Forum.

Note to the reader

In an attempt to keep this report simple and readable, comments are not attributed to persons.

This report condenses each Panel discussion – including interventions from the participants – according to the themes addressed, rather than attempting to provide a summary of the dialogue.

Within the themes of each panel session, in order to guide the discussion speakers were asked to address specific thematic questions (Annex C). Where applicable, the report of the Forum summarizes each session according to these questions, grouping both the content of the interventions and the subsequent discussion accordingly. Where appropriate, these questions form the subheadings in the report of each session.

Full access to the deliberations of the Forum and audio and video recording of the entire proceedings, including the opening remarks and interventions from panellists and participants, is available at http://www.who.int/eHealth/en.

BACKGROUND

It is widely recognized that policy-enabled environments are essential for advancing the use of information and communications technology (ICT) in health care delivery. In line with the recommendations of the first Forum on Health Data Standardization and Interoperability held in December 2012, and highlighting the importance of policy and recent WHA Resolution 66.24[1], WHO held the second Forum in February 2014. Its goal was to facilitate a dialogue on the need for policy and governance mechanisms for health data standards adoption in countries, and to draft high-level content for use in creating a policy and governance framework for full adoption of standards at national and sub-national levels.

The intent of the Forum was to facilitate an initial global dialogue among a group of Member States and non-state actors. This dialogue was synthesized to form the basis for deliberations by WHO's governing bodies on Policy for eHealth Standardization at national and sub-national levels. Due to the country-specific nature of policy, the deliberations of the Forum and the outcome are intended for further refinement and adoption in country context through successive country-level dialogues.

The outcome of the Forum is also intended as a step in the later development of a complete Policy and Governance Framework for eHealth Standardization.

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[1] 66th World Health Assembly Resolution on eHealth Standardization and Interoperability, WHA66.24, 27 May 2013. http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R24-en.pdf

OPENING REMARKS

Dr Marie-Paule Kieny, Assistant Director-General of the Health Systems and Innovation Cluster, WHO, welcomed the participants to the Forum and to Geneva. She also passed on the welcome and full support of WHO Director-General Dr Margaret Chan, along with Dr Chan's best wishes for a fruitful discussion.

Dr Kieny underlined the clear commitment by WHO and Member States to standardization of data and related eHealth systems, and reminded participants that setting norms and standards, and promoting and monitoring their implementation, is one of WHO's six core functions.

In that context she particularly welcomed the fact that this Forum was a multi-stakeholder event involving a multiplicity of partners from both the public and private sectors. She stressed that collaboration and coordination are essential to standardization, and underlined WHO's strong track record in this area, which includes collaboration with the IHTSDO on SNOMED-CT and ICD; long-term cooperation with sister agency the ITU; and work with HL7 to make their standards available free of charge to low- and middle-income countries through the WHO portal. WHO also collaborates with WHO Collaborating Centres and International SDO's such as ISO, CEN, PHDSC, IEEE, GS1 and many others, including national standardization bodies.

While national policies are essential for the adoption of health data and health IT standards at country level, Dr Kieny said that technical work alone on standardization is insufficient. To that end, she reminded the audience of the major milestone achieved in May 2013, in the adoption of World Health Assembly (WHA) Resolution 66.24 on eHealth standardization and interoperability.

A key next step towards the necessary national policies is to draft a policy and governance framework that will be useful to Member States for standards adoption at national level. Dr Kieny outlined some of the challenges. Gaps in policies and a lack of adequate governance mechanisms can make implementation of standards a hard task for some Member States. A lack of clear national-level mandates, policies, and governance mechanisms also hinders the full adoption of standards, and thereby hinders interoperability of health data systems. Therefore, she said, WHA Resolution 66.24 stresses the need for policy and governance mechanisms for standards adoption; for Member States to conduct high-level policy dialogue; and for the development of policy guidance for full implementation of standards-compliant eHealth systems and services. Dr Kieny concluded by recognizing that the Forum was a valuable chance to learn from Member States' experiences. She stressed the fundamental importance of collaboration and cooperation, and wished the Forum success.

PANEL 1: POLICY APPROACHES IN EHEALTH STANDARDIZATION AND INTEROPERABILITY

Theme: Highlights of policy approaches to adoption and implementation of health data standards for functional eHealth systems and services

The first session was composed of interventions from Member States, with delegations from six countries (Bangladesh, China, Estonia, Finland, India, Switzerland) presenting a broad overview of their experiences with standardization. In a wide-ranging high-level session focussed on the national overview, delegates addressed barriers to policy on one hand, and its enablers on the other; outlined their thoughts on the roles of local and national governments, the private sector and civil society in designing and implementing policy; and identified some of the priority policy areas for health data standardization.

Interventions provided a spectrum of different types of country experience – ranging from national strategies for e-Health in countries like Estonia and Finland with relatively long track records of implementing eHealth (the latter dating back to 1996), to the issues of designing national policy in Switzerland where oversight and budgets are devolved to 26 cantons, to problems posed by the varying readiness of parts of the Indian health system, which encompasses both single-clinician primary health clinics in poor rural areas and 7,000-bed corporate mega-hospitals. Bangladesh outlined issues surrounding the adoption of health data standards and use of ICT in a health care system facing many natural and geographic challenges. As part of their national health care reform, China remarked that over the last four years its national government has invested over 10 billion RMB (the official currency of the People's Republic of China) in eHealth projects. A national health information standards committee and pilot project on standards adoption have been established in China – though some policy, technical, legal and management barriers need to be overcome in order to achieve the full implementation of health information standards.

Key themes emerged on the essential elements of policy for adopting and implementing health data and health IT standards for eHealth systems. Some recommendations were specific in nature: the panellists and the participants were in broad agreement, for example, that policy should contain rules allowing unique identifiers for patients and health care professionals; that it should guarantee privacy and security of data; and that it should promote safety and patient-centeredness, with a focus on patient outcomes.

There was also agreement that effective collaboration between stakeholders across different sectors was crucial to an enabling policy environment. Participants agreed that policy must focus on work and collaboration of both the public and the private sectors, and where applicable that it should also help establish fair public-private partnerships.

Acknowledging that a lack of capacity was often a major barrier to adoption and implementation, consensus emerged that policy should promote training in order to

build in-country capacity to work on standards for interoperability and implement them; and that WHO and other international organizations should take a lead in defining a minimum set of standards necessary for countries – and particularly low- and middle-income countries – to address standardization and interoperability. It was also recognized that WHO and partners have a key responsibility to help avoid the global proliferation of duplicate standards, and guard against consequent disruption of the health care market.

Acknowledging these capacity limitations, participants concluded that policy should seek to counter overly rapid ad hoc implementation of standards in developing countries, especially those lacking in human resources and technical capacity – a dangerous situation likely to occur by default if not countered. Further, it was recognized that Member States need to support a movement away from ad hoc implementation of eHealth activities to well-planned implementation with adherence to international standards. This is important in order to avoid the proliferation of fragmented and diverse standards existing in some industrialized countries, a challenge identified by some panellists. It was also recognized that standards should include the standardization of terminologies in public use for medicines.

It was evident during deliberations that many challenges to implementing standards-based eHealth services were common to several Member States. These included technical challenges posed by semantic interoperability and the secondary use of data to provide continuity of care; the need for strong regulation of widespread systems – including laws, classification, terminologies and technical standards that are mutually supportive; a lack of specialists to design, build and manage eHealth systems; a lack of people who can translate the technical and the semantic (i.e. health care providers who can communicate their needs in the language of IT technicians, and vice versa); and a lack of capacity to use international standards like SNOMED in Member States with limited or no domestic experts. Concern was also expressed about the danger of standards becoming obstacles to innovation, and the need to avoid this through the use of appropriate management systems. Another shared concern that would be repeated throughout the two-day Forum was that of the tension between health systems' needs for clear and available data, and individual rights to privacy and security. Policy for data management and ethics was agreed to be of principal importance.

PANEL 2: SUCCESSFUL POLICY INTERVENTIONS TO OVERCOME BARRIERS IN STANDARDS ADOPTION

Themes: infrastructure and workforce barriers; regulatory and compliance barriers; financing the implementation process; evidence-informed policy tools and approaches; and policy approaches in eHealth standardization and interoperability

Overcoming infrastructure and resources barriers

The panel reached consensus on a number of aspects of a policy framework that would address challenges identified in the previous session. These included measures to increase the availability of qualified, experienced human resources for standards implementation, and ensuring that policy overcomes implementation barriers by promoting simple regulation of a basic framework allowing maintenance of standards and innovation of new standards where needed.

To prepare for such a framework in a time of widespread resource constraints, it was recognized that policymakers and advocates are obliged to focus on building evidence for the case that eHealth systems and services increase efficiency and productivity, and move countries towards sustainable health care systems.

Commercial vendors must also be engaged. It was argued, for example, that commercial vendor solutions for inter-application compatibility are currently unsatisfactory; one suggested solution was for countries to include clear text articulating the need for interoperability in every request for a vendor proposal or public procurement announcement.

It was also recognized that WHO must lead in making standards free or affordable for countries, assisting low- and middle-income Member States by providing guidance and tools, promulgating standards and levelling the playing field.

Addressing regulatory and administrative barriers

Regulatory and administrative barriers to standardization can be addressed through education programmes designed to show regulatory agencies the promise of standards in moving the global eHealth agenda forward, and to demonstrate to finance and management staff at regional, local and health facility levels how health IT leads to reductions in burden. This effort would be greatly supported by the provision of simple guidelines on standards implementation.

It was also suggested that countries might consider establishing collaborative independent national agencies to manage the sustainability of technical and semantic

interoperability and standards. This agency could contribute to overcoming numerous barriers by engaging with key stakeholders; engaging with international standards adoption forums; exchanging best and failed practices; and engaging SDOs, ensuring that they maintain existing standards and avoid market disruption with new ones unless clearly justified.

SDOs themselves can help by working to understand and respond to health care business needs, focussing on what is relevant to the immediate health care business problems of prospective users. Standards—even large and complex ones—should be provided with clear, concise guidance for swift implementation.

Current approaches and best practices

The outcomes of the discussion most relevant to policy included making sure that the education and communication initiatives previously mentioned ensure support for deployment by all stakeholders: it is important to deploy standards with the support of policy and administrative agencies, vendors, clinicians and patients. To that end, policy must impose a compelling vision and goals shared by all, thereby ensuring collaboration between the many organisations in the standards space with overlapping needs and skills. It was agreed that without mutual trust between all stakeholders little or nothing could be achieved. A degree of top-down organisation is, however, necessary, as is policy to ensure that participants exchange information and recognise and address local needs in all implementations.

Interoperability of eHealth systems requires efficient policy. While legal and organisational interoperability are the responsibility of Ministries and public health authorities, technical and semantic interoperability are also crucial, and policy requires pragmatic details in these areas to ensure market relevance and acceptance. Deployment is the key goal: emphasis should not be on particular standards, but on adoption and deployment. It was underlined again that policy must also clarify privacy and data requirements.

A simple and harmonised regulatory framework is required, based on targeted objectives: in the face of technical and financial barriers to implementation it was argued that policy should always seek to build upon existing standards and infrastructure and adapt them to health care settings rather than creating new health care-specific infrastructure; and that eHealth should not be used as justification to create markets, but instead to advance health care delivery for all persons (as outlined in the principles of Universal Health Coverage[2]). A theme emerged here that would come to dominate proceedings: while the use of internationally accepted standards was recognized to be crucial, it was argued by many that "one size does not fit all." Ministries should think global and act local, tailoring international standards and vendor solutions to country and local contexts. It was argued that vendors are able to offer valuable help in this regard because they are not constrained to countries; they can therefore use their international experience to provide information on what has worked elsewhere.

[2]   Universal Health Coverage. http://www.who.int/universal_health_coverage/en/

It was concluded that the need for top-down organization (possibly with WHO assisting countries to move towards a minimum set of standards for Member States) must be complemented by a bottom-up approach in which countries make decisions and allow for local context.

Addressing the need for relevant competency-based skills and expertise, awareness and understanding, financial resources, and political support; convincing stakeholders of the benefits of relevant policies for standards implementation

With most countries experiencing issues with the rising costs of health care, the panel agreed that efforts to make care efficient and sustainable must come from a globally coordinated joint effort on standards. Forums for discussion like this should make strong recommendations to decision-making bodies to take new approaches. The panel recognized that policies should address needs at national level first, providing leadership and financial support and outlining clearly the needs that standards are intended to meet. It was also suggested that policy should look at leveraging vendors' talents so that they start to provide competency and skill-based training to the health workforce, or build capacity in other ways.

It was recognized that SDOs, for their part, must convince governments and other stakeholders of the importance of this work, agreeing on a core set of standards that is simple to implement, consistent across levels of care and between levels of government and administrations, and with a clear evidence base. This will require a unified message comprehensible to all stakeholders. It was also argued that the development of the necessary evidence base was likely to take time – possibly 20-30 years – and that stakeholders should have realistic expectations in this regard. The WHO Secretariat reminded the audience that a special edition of the *World Health Bulletin* had already been published on eHealth evidence, and suggested that another could be published by 2016 on the impact of standards and interoperability on the quality and efficiency of health information systems.

It was concluded that WHO had a part to play in ensuring knowledge is available in countries; supporting relevant in-country discussions; and helping countries achieve interoperability between one another by supporting a common data structure and systematic approach.

Evidence-informed policy developments and approaches to assist Member States in implementation of standards; filling the gaps in policies for evidence-based adoption of standards at country level

Once again the point was strongly made that "one size does not fit all" in policy making; the tension between universality and national context must be resolved.

Within this restriction a number of themes emerged. The panel recognized that a policy-enabling environment required a commitment to evidence-based long-term investment in policies seeking to cultivate trust and coordination between all stakeholders, informed by the best available research evidence, with a focus on health outcomes. Policy dialogue should be balanced with a policy brief, and policy itself should be guided by a context map including institutional and individual stakeholders. Collaboration between these groups is fundamental; the policy process requires the willingness of policy makers to engage fully with all stakeholder groups.

The WHO Secretariat described the WHO EVIPNet programme, which worked with teams in 42 Member States to develop tools to assist in developing policies informed by the best available evidence, and to facilitate policy implementation. These support tools can be found at http://global.evipnet.org/SURE-Guides/.

PANEL 3: GOVERNANCE, STEWARDSHIP, EQUITY AND HEALTH SYSTEMS INTEGRATION OF DATA STANDARDS AND INTEROPERABILITY

Themes: informing the design and choice of policy components; compliance monitoring and evaluation; governance and stewardship mechanisms; current approaches and good practice

Country examples of governance mechanisms to oversee certification and implementation of, and compliance with, standards

After intense deliberations the panel agreed that good governance is based on equality; accessibility; legality and protection of users' rights; privacy; responsibility; accountability to citizens and to the state; compatibility of technologies; efficiency; open dialogue; and a shared vision on use of data with clear goals, key indicators for monitoring and evaluation and mechanisms for social participation. It was recognized that governance must balance top-down and bottom-up approaches, a balancing process that should be led at WHO level by analysing the implications of different approaches. Good governance – governance that is responsive, inclusive and accountable – uses legislation and related implementation and enforcement mechanisms, such as information systems certification, to enable data standardization and interoperability between systems. This includes a number of core interoperability standards tailored to the specific context and included in the procurement process for eHealth projects. Implementation requires more than decision-making or announcing policy; it requires capacity, trust, understanding, and genuine collaboration between all stakeholders. This last point, cited as a major theme in every panel of the day, was fast becoming a theme of the Forum.

Examples of existing mechanisms included the establishment in the United States in 2004 of the Office for the National Coordinator of Health Information Technology. This was the result of over ten years of work setting a policy framework and regulations as a foundation for the use of this type of data exchange nationwide. It aimed to achieve equality of access to care for vulnerable groups, especially those without health insurance. Other cited examples included Cape Verde's national promotion of policies for interoperability among various parts of government; and North American and EU approaches to standardization, which are mature enough to have identified issues that others may now avoid. It was observed that national level integration of health information systems brings benefits to subnational levels. However, this integration requires electronic health information exchange technology across vertical programmes, public and private health care facilities, and population-level data. HIE can allow secure and appropriate electronic access to health care data by patients and providers.

It was recognized that WHO's role in governance should be to lead in facilitating creation of global standardized models; to assist capacity-building by working with academics to generate minimum education standards on eHealth and eHealth standards; and to organize workshops with Ministries, health service providers (state-led and others) and other key stakeholders to test readiness for eHealth, ensure capacity for use, and ensure leadership on this critical issue.

Equity principles for developing a policy framework

The panel and the audience agreed that a balance between a top-down approach of federalised implementation and the needs of local practice is critical to achieving true interoperability – and that, once again, this must be guided by patient- and population-level outcomes. It was recognized that population-based and primary care data are essential in order to get an overall picture of health equity, and that particular attention needed to be paid to more vulnerable populations. Policy must support user participation in standardization efforts by all stakeholder groups, including frontline health workers, patients and caregivers: stakeholder awareness of benefits is crucial to achieving widespread use. ICT developments and use must take into account the viewpoints of all stakeholders, and resources allocated to the policy framework must be able to support and adapt to continually evolving technologies and changes in health care practice.

In this context policies must address equity from the position of software architectures and how they implement health information exchange. Policy must coordinate with ICT infrastructure to make services available at all levels, and vertical programmes. It must also include recommendations for language translation based on standard coding and terminologies. To address a physical equity gap policymakers should consider creating reliable high powered computing infrastructure across otherwise deprived areas, focussing on providing broadband to rural areas to allow access to computing infrastructure from a varied number of devices.

Important points were made about health data and health IT standardisation, and quality and depth of data: to increase equity data must be complete and cannot overlook either the poorest, who do not engage fully with health services, or the richest, who patronise private facilities. Linking data is crucial to equity, as is the capacity for using it for evidence-based policy making. Stakeholders must be able to access datasets for analysis and use in decision-making, and a "culture of use" should be created around the data to ensure that it is used. Simultaneous public communication is essential so that the most vulnerable and marginalised groups are aware of the services available to them, and encouraged to engage.

Engaging civil society organizations

Deliberations began with the consensus that a wider policy framework is needed "for the mutual development of policy." In this it was recognized that WHO's involvement was key. The suggestion was made of establishing a governance structure within WHO

to guide this effort. It was agreed that management of health systems benefits hugely from social participation at subnational level, through establishment of multisectoral groups including all stakeholders, and smaller representative groups. These can be complemented at national level by inter-sectoral councils for national health with the mandate to interact with civil society. It was agreed that civil society organizations (CSOs) are a key interface between communities and the health sector, and that national spaces are needed for open dialogue between the health sector, CSOs and community-level interest groups. Meaningful engagement with CSOs is a critical component of inclusive governance that can ensure more responsive and equitable outcomes for CSOs and the different constituencies they represent and with which they interact. In this context it was concluded that one fundamental responsibility of government is to act as a convener of civil society and other stakeholders, providing a mechanism by which different types of organizations with different mandates can sit at the same table.

To create an environment enabling engagement with CSOs, the Forum recognized that governments needed to apply rigorous enforcement of standards across society, along with transparent accounting showing equitable representation of diverse stakeholder interests. A cautionary note was sounded: if this principle of balanced representation is lost, trust and participation can be destroyed, thereby decreasing the effectiveness of the overall health IT programme because certain interests dominate.

Finally, it was recognized that WHO should consider establishing a gender group. This group would have the goal of ensuring greater participation of women at all levels in making eHealth systems interoperability a reality, beneficial and comprehensible to every category of user.

Panel 4: Policy and statutory authority components

Themes: composition, role and function; oversight, enforcement and compliance; certificates of authority

Critical role and functions of a statutory authority

Two of the previous day's key themes were quickly reiterated: in establishing statutory authorities for standardization, "one size does not fit all," and trust between stakeholders is critical. It was suggested by the panel that as a counterpoint to a mandatory authority, to achieve full engagement countries should consider establishing a collaborative authority based on consensus decisions of all stakeholders within a defined process, then providing a coordinating function and bringing the organizations together. It was agreed that the critical basic role of the eHealth authority is to lead eHealth policy; it must coordinate and guide programmes and activities of both private and public entities, identifying and prioritizing health care functions that support rapid standards adoption.

The panel highlighted the fact that capacity issues around technical knowledge of standards and interoperability can challenge countries, particularly lower- and middle-income nations. To combat this they emphasized building capacity through education and training outreach with collaboration across sectors and geographical bodies. It was stressed that statutory authorities should look at existing structures before creating new ones, leveraging existing bodies of knowledge. Examples of trainers already providing this function included the IEEE.

In addition to training it was recognized that authorities must provide governance by defining a vision and direction for national eHealth efforts; adopting the necessary technology; ensuring privacy and security of data; setting or encouraging a regulatory framework using standards to ensure patient safety; addressing the use of medical devices in clinical and remote health care environments; regulating the use of patient data; setting national programme priorities and activities (with primary focus on patient and population health); providing an awareness-raising function encouraging wide engagement with standards; acting as assessors and clearing houses for available standards; providing certification oversight; and preventing health information piracy. Above all an authority must guard and manage patient safety, through review and evaluation; compliance and enforcement; and monitoring and tracking.

It was agreed that in order for standards to recognized as such they have to be broadly adopted, and that authorities have a responsibility to ensure this. Adoption was recognized to be a function of a number of driving factors that statutory authorities must address, including clinicians' needs for access to health data with minimum disruption;

ease of implementation; capability and readiness of the health system; engagement by vendors, suppliers and industry; and the effective use of standards.

It was recognized by the audience that WHO has a role to play, developing minimum sets of standards; creating a set of guidance documents to help countries identify and define policies; and establishing a series of working groups after this Forum in order to maintain momentum across these areas.

A question was also raised regarding the methodology of certifying interoperability between systems, especially as regards the semantic component, which correlates directly with the accuracy of information shared. It was noted that the development of processes to certify whether shared information is correct are demanding in terms of time and human resources. Certification of shared information is the responsibility of the owner of information. Member countries were encouraged to share relevant experiences and methodologies in subsequent forums and technical meetings.

Approaches for establishing an entity to serve as a certificate of authority at national level

The Forum underlined the need for a national body that can ensure implementation of health data and health IT standards at national and subnational levels. It was agreed that such a body should have expertise, but should also engage with all stakeholders, this being necessary to achieve true adoption. It was suggested by the participants that government can steer standardization by using existing National Standards Bodies, which are already in place in 163 countries: there are examples where this has worked well, and such bodies can provide a source of the long-term stability necessary for standardization that is otherwise hard to achieve in policy environments subject to change by political cycles. It was pointed out, however, that in many cases national bodies also needed to change, becoming knowledge centres for standards from all SDOs, not just a particular one.

Examples of statutory components

Some of the panel deliberated that "arms-length," collaborative authorities are more effective than mandatory ones, providing examples including the Canadian Approved Standards effort; Canada Health Infoway's EHR architecture model; and the Canada's Health Informatics Association (COACH) credentialing and education models. Examples of numerous collaborative models with varying capacity levels were discussed and Denmark was cited as an example of policy developed with interoperability in mind to allow market growth. It was even argued that in some cases a formal structure is not the first answer at all; rather, more collaborative arenas—even informal ones—involving all stakeholders can initially be more efficient than setting up a formal structure.

Other issues

The participants discussion in this session raised a number of issues. One was around the capacity of market drivers to become de facto authorities: the IEEE802 series for wired and wireless communications was cited as a model where industry worked together to create standards accepted by the market. There was argument against this model, on the basis of worries about how market acceptance fits into the picture of policy for privacy, security and patient safety.

Other questions included how to define a minimum set of standards when requirements differ greatly even between different stakeholders in the same country; how to convince stakeholders to spend money on standardization in a restricted financial context; and – in countries where the health system has been devolved – how to avoid the risk of a statutory body encroaching on devolved authority. Issues were also raised around identifying the point of readiness for adoption, especially in large countries with complex health systems encompassing different actors and institutions of differing states of readiness; identifying the point of implementation for a standard; and the pros and cons of different certification models. With regard to this last point, there was call for WHO to produce a guidance document for model selection.

PANEL 5: REGIONAL PERSPECTIVES ON GOVERNANCE AND STEWARDSHIP OF eHEALTH STANDARDIZATION

Themes: perspectives from select Member States; perspectives from WHO regions; role of WHO

This session was composed of interventions from country delegations and WHO regional offices, with delegations from eight countries presenting broad overviews of their experiences with standardization, and a further six WHO regional offices outlining their experiences supporting countries in this area. A rich discussion ran over time as countries – as others had done in the first session – addressed barriers to policy and its enablers; the roles of local and national governments, the private sector and civil society in designing and implementing policy; and priority policy areas for health data standardization. Members from WHO regional offices provided overviews of eHealth progress in their respective regions, and insight into policy barriers and enablers from various regional perspectives.

Condensing across this broad perspective, the following themes emerged.

Countries still have a lot of work to do: there is widespread absence of or weakness in national strategies; but there are many examples of good practice too, and sharing of more and less successful examples, from small and big countries, is of central importance. There is a need for ministry- and country-level capacity building across all regions, and an accompanying need for WHO leadership and support. Participation of international standards associations in the policy process is also essential, in order for standards to be designed in accordance with national needs. It is also important in many contexts to investigate and enable context-appropriate public-private partnerships.

Key policy enablers include political will, with Ministries of Health providing transparent recognition, ownership and support; having health data standards implementation as a key element in national strategies for eHealth, with clear implementation procedures and support for local level professionals; having well-defined national governance processes for standards implementation; and ensuring that all relevant ministries, national health standards associations, private sector representatives, patient organizations and other key stakeholders are engaged.

There is widespread need for development and equitable use of resources and infrastructure to allow the use of Health IT and sharing of information between health organizations and across borders. Reliable networks, internet access, and electric power are widely needed. These must be accompanied by legal frameworks to support the implementation of eHealth standards and ensure security of information. Full stakeholder engagement is crucial, right down to patient level: patient focus and patient awareness are essential to the success of eHealth initiatives.

While developing and maintaining interoperable standards poses one challenge, the fundamental issue remains how to take the use of standards forward, ensure they are uniformly adopted and followed, establish mechanisms for their maintenance and compliance, and resolve questions of data ownership.

Within all of these issues and throughout all contexts certain needs appear constant: capacity building and coordination are of primary importance around the globe; stakeholders should be engaged in the policy process from its inception; the dialogue around policy should be conducted in language that people understand; people must be accountable to their commitments and what they implement; national and regional collaboration should be fostered by building communities of practice with shared visions; planning is needed at national and subnational levels; certification and accreditation processes are of great importance; and as a means of driving adoption, countries should consider making eHealth integration necessary for the accreditation of health care facilities.

PANEL 6: ESSENTIALS OF A GOOD POLICY FRAMEWORK FOR ADOPTION OF STANDARDS FOR INTEROPERABILITY

Themes: essential policy elements for implementation of standards at national level; critical success factors for implementation of standards

In advance of the plenary, this session provided panellists with the opportunity to distil discussion to the essentials for a good policy framework.

Important elements and components of a policy framework

The Forum recognized that long-term policy commitments were crucial: to provide the requisite support, commitment and accountability, eHealth policy must be embedded in national health plans, or in eGovernment plans if they are in place. There was consensus that plans must be affordable, effective and acceptable; must have specific components dealing with eHealth; and must include participatory mechanisms for involving all stakeholders, including parliamentarians, CSOs, patients, health workers, academia, patients and health care service providers. Implementation plans must clarify who does what – which institutions, which individuals, and their linkages – and all stakeholders must have familiarity with the standards and their benefits. There was also repeated emphasis on the need for policy to ensure privacy and security of data.

It was also widely recognized that policy and planning must include data for population identification; unique identifiers for patients, health care workers and institutions; and short-, medium- and long-term indicators. To bring down costs and increase efficiency, eHealth policies and their implementation should be based on full adoption of international standards, and then customized to country context and local realities.

There was also a strong argument that SDOs must ensure that everybody has access to relevant nomenclatures, and that standards must be freely available, especially for low-income countries (though there were some dissenting voices to this last point).

Critical steps in adopting and implementing the policy framework

It was argued that countries should work on the basis of expected outcomes: "if standards and interoperability are the answer, what's the question?" It was stressed that standardization and interoperability should be outcome-driven, and that standards implementation has a number of key steps. These include identifying the needs that data standards can address; ensuring accessibility; holding thoughtful and engaged consultations on specific themes for deep discussion; thorough context mapping based on need; and the building of the necessary organizational arrangements to achieve mutually beneficial outcomes. It was stressed that partnerships should only be engaged

when need is identified, and with shared values and visions; and that they need not always be monetary in nature.

Two basic areas of requirements were proposed for implementation: socio-cultural, and technical. The socio-cultural aspect requires awareness of the wider ecosystem and its great complexity; all participants must be recognized or outcomes will fail. Within the technical aspect there was consensus that most Member States needed a framework where core immutable standards are defined and maintained, with the expectation that outside this core set standards could still be susceptible to innovation. Efficient, equitable rollout was advocated, with the use of international standards and the avoidance of proprietary solutions. The importance of collaboration was also stressed again, including collaboration across other fields and spheres (such as the legal, cultural, and economic domains, as well as across regional contexts and authorities). It was also pointed out that while policies must be consistent with overall government objectives, they must also preserve continuity as technology, ideology and governments change.

The point about privacy and security of data was elaborated by an intervention suggesting policymakers should conduct advocacy to data protection agencies. These agencies have very different frames of reference to health actors and privacy regulations can be a significant barrier to interoperability; it is therefore important to engage with the education of privacy organisations regarding the nature and needs of health care.

Finally, the importance was underlined of learning from all available experiences: countries with the opportunity for implementation should appreciate the value of examples of successful and less successful implementations. Systematic research can help inform elements of a policy framework, the processes leading to the framework, its responsiveness to changing needs, and how the policy is implemented to achieve its objectives. Each implementation of standards should be approached as an experiment that must be regarded as unique, and ongoing work must be adapted to particular conditions and monitored with appropriate outcome-based measures.

Acquisition of and access to health informatics standards by Member States

It was pointed out that SDOs responsible for development and maintenance of standards cannot provide standards for free without finding a means to fund the development and maintenance of those standards. Forum attendees therefore requested separate discussions to elaborate this matter.

Similarly, Member States requested clarification through separate discussions of the use and maintenance of open standards and their relevance to standards implementation at national- and sub-national levels.

In addition, Member States asked for technical assistance in measuring the financial return on investment of standards implementation. The participants suggested further discussion the ways to assess the business models used by various SDOs.

Issues

The forum discussed the HINARI model, a public-private partnership that provides free or low cost access to many online journals and electronic books to over 5000 institutions in 116 eligible Member States. The HINARI model was referred to as an example of a gateway for providing health informatics standards to Member States.

Other proposals were offered from the participants, including a proposal for donors to channel funding through ISO, getting ISO to negotiate with SDOs and make a deal whereby for a certain amount of money standards could be made freely available to countries; getting WHO to look at different national blueprints, keeping a census and mapping trends in standards usage, rather defining a core set of standards; and the rapid publication of a series of papers/analyses to see what standards are in use around the world, and map them against needs. It was also pointed out that it is crucially important to map standards to those development goals on which global consensus has already been achieved.

PLENARY SESSION

Theme: propose a draft text for policy framework for eHealth standardization and interoperability

The plenary session was an opportunity to present the rapporteur's summary of the Forum. This summary was proposed as a starting point for the drafting of a policy framework for eHealth standardization and interoperability.

The summary was presented and a number of interventions were taken from the audience, some of which were incorporated into the summary points to create the revised version presented here. These points are to be validated through a subsequent consultation process before work begins on drafting the framework.

Themes of the Forum

eHealth policy for standardization and interoperability in a national context should:

- Be embedded in a national health plan, and an eGovernment plan if one exists. Its view must be long term, provide continuity, and commit to long-term investment. Development and implementation of national eHealth policies for standardization and interoperability should be a national effort and must include stakeholders from the health sector, non-health sectors of national governments, and non-state actors.

- Be patient-centred, emphasising service quality, equity, patient outcomes, patient safety and population outcomes.

- Be based on mutual trust and understanding and genuine collaboration between all stakeholders from lawmakers to patients, facilitated from the start by a participative approach to policy-making, and encompassing public and private partnerships where necessary.

- Support an evidence base for the socio-economic benefits of eHealth, and encompass user utility and outreach programmes to ensure that all stakeholders, including patients, are aware of the use, benefit and risks of eHealth and are engaged in related discourse and decision-making, and its implementation.

- Adopt appropriate electronic Health Information Exchange (HIE) technology, including at national and subnational levels, in vertical programmes, and in public and private health care facilities.

- Set health data and health IT standards to ensure interoperability at data-, device- and system-levels, in a framework containing a fixed core set of maintained standards allowing for a degree of innovation outside that core set and allowing for development based on the capacity and maturity of eHealth systems and services; and regulate an appropriate degree of adoption in the country context.

- Use existing international standards where possible and adapt specific standards to suit national contexts (taking necessary care to ensure interoperability and backward compatibility, as applicable).

- Provide unique identifiers for patients, health care workers and health care facilities, with verification and authentication procedures.

- Ensure the safety of interoperable medical devices, and ensure security, defining privacy and security policies addressing technology use in health care delivery.

- Build capacity from country and ministry level down to that of frontline health workers. This includes financial and academic capacity as well as technical and human resource capacity.

- Ensure good governance, balancing top-down and bottom-up approaches, encompassing: equity and accessibility; legality; user rights in line with human rights; privacy; responsibility; and accountability to citizens and to the state. Compatibility of technologies, efficiency, open dialogue and a shared vision on use of data are necessary for implementation. In monitoring compliance, clear goals and key indicators for monitoring and evaluation are needed, with mechanisms for social participation.

- Support competency-based education and capacity building in health informatics, with standardized curricula and measurable learning objectives at national and sub-national levels. Training should be for the health workforce, including social workers, and should cover eHealth policy development and planning, communications and leadership as well as technical content. Training, including in-service training, can provide a valuable opportunity for partnership with academia, technical colleges and other relevant bodies.

- Encourage relevant ministries of national governments to include eHealth core competencies in job descriptions for relevant posts.

Requests were also noted for WHO leadership in:

- Identifying and providing a core set of minimum standards

- Providing technical support for implementation of standards in collaboration with IGOs, NGOs and SDOs

- Helping unify data and setting standards for coding and data sharing across countries

- Helping build policies for data sharing.

- Setting interoperability goals and providing support to countries in achieving them

- Coordinating activities of health data and health IT standards development and maintenance organizations to serve WHO Member States.

- Continuing to host for a to facilitate discussion on aspects of standardization and interoperability

- Providing guidelines to support countries in decision-making on standards and related policy.

ANNEX A – MEETING AGENDA

Joint Inter-Ministerial Policy Dialogue on Standardization and Second WHO Forum on eHealth Standardization and Interoperability
Executive Board Room, WHO Headquarters
10-11 February 2014 - Geneva, Switzerland

Agenda

"The use of eHealth and mHealth should be strategic, integrated and support national health goals. In order to capitalize on the potential of ICTs [Information and Communications Technology], it will be critical to agree on standards and to ensure interoperability of systems Health Information Systems must comply with these standards at all levels, including systems used to capture patient data at the point of care. Common terminologies and minimum data sets should be agreed on so that information can be collected consistently, easily and not misrepresented. In addition, national policies on health-data sharing should ensure that data protection, privacy, and consent are managed consistently."

Keeping Promises, Measuring Results

Commission on Information and Accountability for Women's and Children's Health. WHO, 2011, p14.

Forum objectives:

◼ Facilitate a dialogue on the need for policy and governance mechanisms for adoption of health data standards in countries

◼ Propose a policy and governance framework for standards adoption at national and sub-national levels

Day 1 – Monday, 10 February 2014

08:30–10:00	**Coffee and registration**
10:00–10:15	*Welcome remarks* Dr Marie-Paule Kieny, *Chair of the Forum* Assistant Director-General, Health Systems and Innovation Cluster, World Health Organization *Objectives and expected outcomes* WHO Secretariat

10:15–12:00	**Panel 1: Policy approaches in eHealth standardization and interoperability**

■ Highlights of policy approaches to adoption and implementation of health data standards for functional eHealth systems and services

Plenary discussion

12:00–13:30	**Lunch**
13:30–15:00	**Panel 2: Successful policy interventions to overcome barriers in standards adoption**

■ Infrastructure and workforce barriers

■ Regulatory and compliance barriers

■ Financing the implementation process

■ Evidence-informed policy tools and approaches

Plenary discussion

15:00–15:30	**Break**
15:30–17:00	**Panel 3: Governance, stewardship, equity and health systems integration of data standards and interoperability**

■ Process of informing the design and choice of policy components

■ Compliance monitoring and evaluation

■ Governance and stewardship mechanisms

■ Current approaches and good practices

Plenary discussion

17:00–17:10	**Announcements and adjourn**
18:00–20:00	**Reception** *WHO Restaurant*

Day 2 – Tuesday, 11 February 2014

09:00–10:30	**Panel 4: Policy and statutory authority components**
	■ Composition, role and function
	■ Oversight, enforcement and compliance
	■ Certificate of authority
	Plenary discussion
10:30–11:00	**Break**
11:00–12:30	**Panel 5: Regional perspectives on governance and stewardship of eHealth standardization**
	■ Perspectives from select Member States
	■ Role of WHO
	Plenary discussion
12:30–14:00	**Lunch**
14:00–15:30	**Panel 6: Essentials of a good policy framework for adoption of standards for interoperability**
	■ Essential policy elements for implementation of standards at national level
	■ Critical success factors for implementation of standards
	Plenary Discussion
15:30–16.00	**Break**
16.00–16.45	**Propose a Policy Framework for eHealth Standardization and Interoperability**
	Plenary discussion
16.45–17.00	**Conclusion**

ANNEX B – LIST OF PARTICIPANTS

Representatives of WHO Member States

Last name	First Name	Country of Origin
Abbasi	Ghulam Asghar	Pakistan
Abou Mrad	Lina	Lebanon
Abu Al Hassan	Haider	Kuwait
Al Jobori	Mia	Sweden
Alimuzzaman	Mohamad	Bangladesh
Asser	Mari	Estonia
Azad	Abul Kalam	Bangladesh
Bertoni	Alberto	Italy
Bonner	Gabrielle	Germany
Corrales-Hidalgo	J.	Panama
Dabre	S.M. Gisèle	Burkina Faso
de Milo Terrazzani	Johannes	Monaco
Deane	Samuel	Barbados
Deniz	Umut	Turkey
Djukic	Vladimir	Serbia
Dominguez Labrador	Elena	Spain
Erhola	Marina	Finland
Farndon	Kathy	United Kingdom
Fones	Guy	Chile
Halen	Anna	Sweden
Hämäläinen	Päivi	Finland
Hannan	Abdul	Bangladesh
Hardhana	Boga	Indonesia
Hartono	Setyo Budi	Indonesia
Heyward	Madeleine	Australia
Hosek	Martin	Switzerland
Islam	Kazi Mohiul	Bangladesh
Jain	R.K.	India
Kamau	Onesmus	Kenya
Kim	Ganglip	Republic of Korea
Kink	Pille	Estonia
Kulikov	Alexey	Russia
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Maurille	B.	Benin
Miah	Md. Neazuddin	Bangladesh
Mic	Daniel	Czech Republic
Min	In-Soon	Republic of Korea

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Padilla Rodriguez	Liliana	Mexico
Perche	Moacyr Esteves	Brazil
Podvinskis	Peteris	Latvia
Poll	Sylvia	Costa Rica
Purwadianto	Agus	Indonesia
Raman Singh	Dipendra	Nepal
Realini	Gilles	Monaco
Sadat	Md Azam E	Bangladesh
Schmid	Adrian	Switzerland
Sein	Aye Aye	Myanmar
Serna	Liga	Latvia
Sinha	Arbindra Kumar	Nepal
Thonnet	Michèle	France
Tinoco	Roxana	Costa Rica
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Technical Area Experts

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Eskandar	Hani	Switzerland
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Ferguson	James	United States
Frame	Shannon	Switzerland
Fraser	Hamish	United Kingdom
Gehron	Michael	United States
Geissbuhler	Antoine	Switzerland
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Gilhooly	Denis	United States
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Harrison	Oliver	United Kingdom
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Hay	Christian	Switzerland
Horowitz	Marc	United States
Ingerson-Mahar	Michael	United States
Jaffe	Charles	United States
Jamoussi	Bilel	Switzerland
Jolliffe	Bob	Ireland
Khan	Mohammad	United States
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Klein	Gunnar	Sweden
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Laflamme	Lucie	Sweden
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Lemaire	Jean-Paul	France
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Manset	David	France
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Millar	Jane	Denmark
Mirza	Muzna	United States
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Moidu	Khalid	United States
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Naboulsi	Halima	France
Newman	Carl	United States
Newsham	Don	Canada
Nguyen	Liem	Vietnam
Niehaus	Engelbert	Germany
Njoka	Eliud Karingo	Kenya
O'Donnell	Kevin	United States

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Pardave	Marco	Mexico
Payne	Jonathan	United States
Pelaprat	Mary Lou	Switzerland
Raimundo	Maria	Switzerland
Romao	Mario	Belgium
Rossing	Emil	Switzerland
Rubio	César	Spain
Santas	Xenophon	United States
Severance	Hayley	United States
Sheikh Ahmad	Md Khadzir	Malaysia
Sinha	Chaitali	Canada
Slade-Jones	Hadley	Qatar
Sloane	Elliot	United States
Song	Seungjae	South Korea
Staring	Knut	Norway
Suarez	Walter	United States
Sweete	Donald	Denmark
Thouvenot	Veronique Ines	France
Udayasankaran	Jai Ganesh	India
Veltos	Philippe	Switzerland
Vreeman	Daniel	United States
Wyborn	Andrew	United Kingdom
Ye	Maurice	Burkina Faso
Zhong	Daidi	China

Members of WHO Secretariat

Last name	First Name	WHO HQ/Region
Al-Shorbaji	Najeeb	WHO HQ
Campanella	Nando	WHO AMRO
Chikersal	Jyotsna	WHO SEARO
Coltart	Ian	WHO HQ
Cornu	Catherine	WHO HQ
Dzenowagis	Joan Helen	WHO HQ
Gaitan	Ruiz	WHO HQ
Günther	Sarah	WHO HQ (volunteer)
Hamilton	Clayton	WHO-EURO
Imo	David	WHO HQ (volunteer)
Karam	Ghassan	WHO HQ
Kieny	Marie-Paule	WHO HQ
Krishnamurthy	Ramesh Saligrama	WHO HQ
Landry	Mark S.	WHO WPRO
LI	Jian	WHO HQ
Majdzaddeh	Reza	WHO EMRO

Mbabazi	Pamela Sabina	WHO HQ
Mehl	Garrett	WHO HQ
Mikhail	Miriam	WHO HQ
Mohamed	Hani Farouk	WHO EMRO
Moujokani	Jeremie	WHO AFRO
Moussy	Francis Gabriel	WHO HQ
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Parker Sweatt	Catherine	WHO HQ
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Roberts	Ian	WHO HQ
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Schnitzler	Johannes	WHO HQ
Senga	Mikiko	WHO HQ
Szilagyi	Tibor	WHO HQ
Timimi	Hazim Bakir	WHO HQ
Ustun	Tevfik Bedirhan	WHO HQ
van Ommeren	Mark	WHO HQ
Velazquez Berumen	Adriana	WHO HQ
Velez	Laura	WHO HQ
Wachsmuth	Isabelle	WHO HQ
Zandi	Diana	WHO HQ
Zhang	Qi	WHO HQ

ANNEX C – THEMATIC QUESTIONS

Panel 1: Inter-Ministerial Dialogue: Policy approaches in eHealth standardization and interoperability

Highlights of policy approaches to adoption and implementation of health data standards for functional eHealth systems and services

■ Are there any policy barriers to implementation of standards you are facing in your country? If so, would you provide a brief synopsis?

■ What are the most significant policy enablers for health data standards implementation at national and sub-national levels in your country? What policy issues need further attention?

■ What are the priority policy areas for health data standardization you think are important?

■ What is the role of government, private sector and civil society in facilitating compliance to policy?

Panel 2: Successful policy interventions to overcome barriers in standards adoption

- Infrastructure and workforce barriers; Regulatory and compliance barriers; Financing the implementation process; Evidence-informed policy tools and approaches

■ How do we overcome infrastructure and resources barriers?

■ How do we address regulatory and administrative barriers?

■ Are there any current approaches or best practices?

■ How to address the need for relevant skills and expertise, awareness and understanding, financial resources, and political support? And how to convince the stakeholders the benefits of relevant policies for standards implementation?

■ What are some of the evidence–informed policy development and approaches that are needed to assist Member States in implementation of standards? How can the gaps in the evidence-based standards adoption policies be addressed at country-level?

Panel 3: Governance, stewardship, equity and health systems integration of data standards and interoperability

- Process of informing the design and choice of policy components; Compliance monitoring and evaluation; Governance and stewardship mechanisms; Current approaches/good practice

- What are some good country examples of governance mechanisms in-place to oversee the certification, implementation and compliance to standards

- What are some equity principles we need to take into account for developing a policy framework.

- How do we engage civil society organizations?

Panel 4: Policy and statutory authority components

- Composition, role and function
- Oversight, enforcement and compliance
- Certificate of authority

- In the context of standards adoption at national-level, what are some of the critical role and functions of a statutory authority?

- What are some of the approaches for establishing an entity or that can serve as a certificate of authority at national-level?

- Are there some examples of key statutory components-the directives, evaluation component, HR capacity, education, training and outreach, that we can learn from?

Panel 5: Regional perspectives on governance and stewardship of eHealth standardization

- Perspectives from select Member States
- Role of WHO

- Brief Interventions from Member States

- WHO Regional Focal points on eHealth would provide perspectives

Panel 6: Essentials of a good policy framework for adoption of standards for interoperability

- Essential policy elements for implementation of standards at national level
- Critical success factors for implementation of standards

- What are the most important elements and components of a policy framework ?

- What are the most critical steps in adopting and implementing the policy framework?