EXPERT CONSULTATION ON E-HEALTH FOR INTEGRATED SERVICE DELIVERY IN THE WESTERN PACIFIC REGION

5–6 March 2018
Manila, Philippines
Expert Consultation on E-Health for Integrated Service Delivery in the Western Pacific Region
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MEETING REPORT

EXPERT CONSULTATION ON E-HEALTH FOR INTEGRATED SERVICE DELIVERY IN THE WESTERN PACIFIC REGION

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NOTE

The views expressed in this report are those of the participants of the Expert Consultation on e-Health for Integrated Service Delivery in the Western Pacific Region and do not necessarily reflect the policies of the conveners.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the Expert Consultation on e-Health for Integrated Service Delivery in the Western Pacific Region in Manila, Philippines from 5 to 6 March 2018.
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Keywords:

| Health Services / Health Information Management / Telemedicine |
SUMMARY

Due to the rapidly changing demographic and epidemiological situation of countries, Member States are facing the growing burden of noncommunicable diseases (NCDs) and re-emerging communicable diseases. Improving service access and providing quality service to all are important elements for achieving universal health coverage (UHC). One identified measure is for countries to have better managed integrated health service delivery. An integrated health service delivery approach provides equitable and comprehensive health services to a defined population. This will ensure better quality and sustainable health services for all populations to improve health outcomes and leave no one behind.

E-health, defined as the cost-effective and secure use of information and communications technology (ICT) in support of health and health-related fields, has developed quickly in recent years. The rapid increase in e-health technologies, applications and innovations could potentially contribute to population health, health research, medical treatment, medicine development and health service development.

In the Western Pacific Region, Member States recognize that e-health offers huge opportunities for future health development as different e-health applications and practices have been implemented. However, situations and stages of development vary among countries. They have different approaches, implementation arrangements and scope of e-health initiatives. All countries in the Region are faced with the challenge of how to better use e-health to improve people’s health and health services.

At the two-day consultation, experts shared practical knowledge and techniques for e-health development and implementation, including electronic medical/health records, telemedicine, mobile health, real-time surveillance and big data. They further provided specific comments on the draft Regional Action Agenda on e-Health for Integrated Service Delivery. During the consultation, a range of issues related to e-health were identified based on country challenges and needs. Experts discussed a systematic framework for deployment of e-health to improve integrated service delivery and thereby advance universal health coverage, and they highlighted specific priority areas for action.
1. INTRODUCTION

1.1 Meeting organization

The Expert Consultation on e-Health for Integrated Service Delivery in the Western Pacific Region was held in Manila from 5 to 6 March 2018. The expert consultation brought together temporary advisers from 11 countries in the Region, observers from partner/international agencies and Secretariat members. The structure of the meeting enabled countries to discuss a variety of aspects related to e-health, share experiences, and identify short-, medium- and long-term priority actions to harness e-health for integrated service delivery. The list of participants is available in Annex 1, and the meeting programme in Annex 2.

1.2 Meeting objectives

The objectives of the meeting were:

1) to discuss progress, needs and challenges on e-health and integrated health service delivery development in different countries in the Region;

2) to discuss and generate inputs on key development dimensions and possible actions on how e-health could better contribute to integrated health service delivery in the Region; and

3) to review and provide expert input on e-health and integrated health service delivery for consideration by the Regional Committee at its sixty-ninth session in October 2018.

2. PROCEEDINGS

2.1 Opening session

The opening session set the context for e-health as an enabler for integrated health service delivery and defined the objectives for the two-day consultation. Dr Shin Young-soo, WHO Regional Director for the Western Pacific, delivered the opening address. Dr Vivian Lin then set the scene for the meeting by giving an overview of universal health coverage (UHC) as a way in which to consider both e-health and integrated health service delivery. The session provided participants with an overview of the relationships between health system attributes (quality, efficiency, equity, accountability, sustainability/resilience) and possible contributions of e-health along the health system attributes.

Discussions covered both the Universal Health Coverage (UHC): Moving Towards Better Health Action Framework for the Western Pacific Region and the preparation of the “Regional Action Agenda on e-health for integrated service delivery in the Western Pacific” (Regional Action Agenda) for consideration by the Regional Committee at its sixty-ninth session in October 2018. The session highlighted the importance of the consultation to inform the Regional Action Agenda being prepared by the Regional Office and the range of advice that is required – from effective change management processes for scaling up and knowledge transfer to planning for technological developments across countries at different stages of development. The session ended with an overall discussion of how the Regional Action Agenda can provide systematic and practical advice to Member States on how e-health can be harnessed to support integrated health service delivery.
It was recognized that Member States in the Region are undertaking health sector reform to expand access to quality services while reducing or at least controlling the cost of health care. They are also acting to manage people’s increasing expectation and demand for coordinated care through the life course. Information and communication technology (ICT) has the potential to bring major improvements in health service delivery, as the visible face of UHC. For example, e-health applications can enable populations living in rural and remote areas to access quality care, can empower patients and communities to engage at all levels of the health system, and provide timely, detailed information to assist in the prevention, early identification of needs, diagnosis and management of illness. The technology is evolving quickly so that Member States need to make a strategic decision to invest in e-health, and build capacity to harness the potential to improve service access and quality with e-health while containing costs.

2.2 Report on Regional Action Agenda scope, regional framework and situation analysis

This session introduced the regional framework, as a systematic lens by which to consider e-health for service delivery improvement. The framework reiterated that the objective of the health system is to improve the health of individuals and populations through more accessible, higher-quality, and more efficient service provision. At the centre of the approach are individuals and their families. In an age of chronic diseases and population ageing, good health outcomes are co-produced by health service providers on the one hand and individuals and their families on the other. Moving up to the level of the health care organization, key service delivery challenges include reducing geographical barriers to access. At the level of the health system itself, e-health technologies such as big data analytics can be used to improve the functioning of and relationship between different parts of the health system environment, drive health system efficiency, build resilience and improve responsiveness to health security threats.

The regional framework also recognizes that e-health can only make a worthwhile contribution if the necessary preconditions are in place, including a conducive ICT environment, readiness for information sharing and exchange, and adoption.

Essential pre-requisites for functioning ICT, such as electric power, mobile signal coverage and internet, are the basis for e-health applications. ICT conditions will influence take up of e-health in different settings. For improved service delivery, information on individuals must be properly collected, recorded, transferred and exchanged across different service levels in a safe and proper manner. Electronic medical/health records are essential tools, carrying information on individuals and transferring it between different levels in a proper manner. A unique identifier for each individual, used across government can greatly assist with the management of this data. These essential ICT foundations contribute to smooth functioning of e-health all levels.

Furthermore, ICT applications have their own characteristics. Information must be recorded, exchanged, and used to reflect in a suitable manner, according to its value and use. Information standards, interoperability and enterprise architecture are important tools to improve information storage and exchange. Privacy, security and confidentiality are critical factors in promoting the best use of information, and in preventing harm and the misuse of information.

The use of e-health will bring change in the operational processes of service delivery. To ensure optimal use of e-health and lasting benefits to all levels of the health system, some health system adoption factors must be considered. These include: engagement with patients, communities, health
professionals and managers, workforce capacity development, leadership and governance amongst others.

It was recognized that the scope of e-health applications is broad, including electronic medical/health records, m-Health, tele-health and telemedicine, electronic health information and medication systems, chronic disease and clinical management systems, electronic learning and decision-support systems for health, social media, and big data. The scope would need to be narrowed for a more focused Regional Action Agenda.

An overview was provided on where countries in the Region are at with regard to the development and application of e-health solutions across the different levels of services, and the service delivery challenges they are facing. This is connected to understanding how e-health applications can advance UHC and integrated service delivery. Country examples of application and commitment were provided, based on their stage of e-health development:

- **Countries in the initial stage:** Most of these countries are lower-middle-income countries. These countries do not yet have a clear national e-health strategy /health sector development plan, and e-health applications are not institutionalised. In general, there is limited access to quality health services for all population groups, and may have many donor-funded programmes which tend to divert human and financial resources. These countries often have small populations, limited human resources and flat service structures with limited linkage between primary, secondary and tertiary levels of care.

- **Countries in the development stage:** Countries in this group include both lower-middle-income and upper-middle-income countries. In these countries, there are clear national e-health strategies, with an implementation plan, or e-health is integrated in the health sector development plan. However, implementation is mixed as the e-health applications become institutionalised. Countries in this stage have considerable gaps in health service delivery for some population groups, experience increasing population demand, and are making efforts to improve service quality and efficiency.

- **Countries in the advanced stage:** Countries in this group are mostly high-income and upper-middle-income countries. In these countries, the enabling environment has matured to support the broader adoption of ICT, and there are clear national e-health strategies, with an implementation plan, or e-health is integrated in the health sector development plan and there is a local ecosystem (academia, public and private sector sector) for e-health application development and implementation, with a focus on innovation. Countries in this stage have focus on integrated care that is patient centred through highly tailored services and clinical pathways.

- **Pacific island countries and areas with small population:** As the situation of these countries is unique, they face specific challenges. ICT infrastructure including power supply, Internet access and coverage, and mobile signal coverage is limited. However, due to increased external resources development and increased demand, the ICT infrastructure in those countries has changed quickly in recent years, which provides a strong foundation for future e-health development.

**Comments for the Regional Action Agenda**

- In recognizing that health is a cross-sector issue, there needs to be collaboration between different stakeholders, including governments, development partners, health professionals and the private sector to support e-health development and implementation.

- A maturity framework should be developed so that countries know understand their current state of e-health development, and what is possible to achieve with their current level of maturity. At
every level of maturity, countries should systematically identify their needs, the benefits of e-health applications and the key enablers required to support e-health implementation.

- The guidance should focus on providing the required enablers, and known pitfalls (; however, this will vary based on country context and level of readiness.
- ICT environments are rapidly evolving in countries in the Western Pacific Region, and e-health is a fast-developing area of work. It provides opportunities for countries to transform their health system to a proactive and coordinated health system.

2.3 e-Health as a mechanism to improve integrated service delivery, possible contributions and challenges – the ‘what’

This session provided an overview of the five scoping reviews that have been commissioned by the WHO Regional Office for the Western Pacific to support the evidence base and situational analysis for the Regional Action Agenda. These reviews cover topics that include health, telemedicine, electronic medical/health records, e-health implementation, and architecture and interoperability.

In this session, selected e-health reviewers presented the preliminary findings of the reviews, including search strategy and inclusion/exclusion criteria. These reviews were intended to demonstrate the “what” and possible contributions of e-health applications to improve integrated service delivery. Feedback was sought from experts on how these reviews can be better used to support the Regional Action Agenda.

m-Health (Professor Siaw-Teng Liaw)
- Multi-dimension approach to integrated care:
  - Vertical: primary secondary and tertiary care level
  - Horizontal: health care system and actors
  - Integration at the care pathway, and continuum of care requires vertical and horizontal level across health service delivery context.
- Preliminary findings:
  - Individual level: most applications involved transfer of individual information to health workers
  - Health service provider level: m-Health used as reminder and/or motivator of treatment
  - Health care organization/health system level: m-Health to support provider–provider communication and provider work planning
  - m-Health tools mostly used to access information and share personal data. m-Health used for outreach services.

Telemedicine (Dr Raymond Sarmiento)
- The rise of early telemedicine was born out of perceptions and concerns on how to improve it and healthcare delivery to populations in remote and resource-constrained locations. The fields of telemedicine and tele-health have since been converging.
- Preliminary findings:
  - Individual and health service provider: telemedicine can help to improve equitable access to care, health care outcomes, communication between patients and service providers, and across service providers, and provider/patient satisfaction. However, cost of the applications, privacy issues, change management and health workforce capacity were main challenges sighted.
Organizational level: telemedicine can improve adherence to treatment, reduced wait times, and readmissions. However, cost of the application, reimbursement of providers, and privacy and legal issues were the main challenges sighted.

Electronic medical/health record (Ms Vicki Bennett)

- Challenges for electronic medical/health record in lower-middle-income countries: consistent power supply, IT capacity of health workers, all-day software/hardware support, sustained funding to support electronic medical/health record implementation, and focus on on electronic medical/health record for data collection and reporting rather than the provision of integrated patient care
- Challenges for electronic medical/health record in high-income countries: privacy risks, incompatible systems, lack of unique health identifiers, and information architecture and standards for interoperability, and alignment across the multiplicity of stakeholders and funders of e-health systems
- Enabling factors for success: clear national e-Health strategy/policy; unique health identifiers, governance mechanisms, policies and procedures, standards, legislation and sustained financing. These must be applied to both the public and private sector to ensure integrated service delivery.
- Principles to be considered include country ownership and stakeholder involvement; health-consumer-focus, judicious and efficient resource use; transparency and public accountability; adherence to international standards; as well as ensuring confidentiality and privacy protection.
- A Fiji case study was presented to demonstrate lessons learnt:
  - PATIS Plus is an electronic data system implemented in multiple hospitals across the country. This system captures information from health services to support evidence-based clinical management decision-making and provides timely data for management, monitoring and planning. It uses a unique common National Health Number and provides the fundamental infrastructure to support continuity of care within and between health facilities.
  - PATIS Plus has been successful in Fiji as it was specifically designed for use in the health service settings and models of care delivered in Pacific island countries and areas. The system was locally owned, and the design was driven by local clinical staff based on their own perceived needs. The use of in-country IT vendor support for system modification and development at a lower cost than acquiring this from overseas has been a key to the affordability and sustainability of the system. Lastly, there has been clinical interest in the modules, and local clinical initiatives use the system.
- It is difficult to identify grey literature and information on current e-health developments or post-implementation evaluation in countries. There may be additional materials that can be sought from donor agencies and country focal points to better understand different country contexts, as well as other factors contributing to successful e-health development and implementation. In addition to critical success factors, there is just as much value in reviewing e-health implementation “failures” to identify lessons learnt. It was recommended to focus on the “why” and “what” and collect more real-world case studies to support practical guidance for the Regional Action Agenda.

E-health architecture and interoperability (Mr Jai Ganesh)

- Information collected from different systems should be exchangeable across geographic and health-sector boundaries, and between different levels of the health system. To enable information to be shared and exchanged, interoperability must be considered.
• National standards and/or internationally standards adapted for the national context, and an explicit data architecture – describing how data are collected, stored, managed and used, and by whom and for what purposes – is needed to guide e-Health development at country and regional levels.

• Countries in the Region have applied a combination of top–down and bottom–up approaches to ensure interoperability and alignment of e-Health applications. A centralized health information architecture offers economies of scale and reduces costs through a central data repository. It is less responsive, however, to local needs and has a longer implementation timeline. A decentralized architecture is quick to deploy and adaptable to local needs, but it leads to redundancies and higher costs while limiting the ability to create a larger picture of any one health information need.

• Several countries are now using the enterprise architecture approach to design and implement their health information systems. They are in various stages of developing their health enterprise architecture with the aim of identifying and describing different components of their health information systems, their relationships and how information can be shared between them. By providing an architecture that is scalable, flexible and resilient, donors, governments, nongovernmental organizations and commercial suppliers can contribute to the development of tools and methods that reuse components and leverage core and common data and standards that reduce, not add to, the burden of data collection.

Comments for the Regional Action Agenda

• There is a need to build on the theoretical aspects in the e-health reviews and ensure a more practical approach by identifying country case studies.

• Flexibility must be maintained with relation to the architecture of the health system. For example, the provision of primary care is different across countries, and settings. Given the diversity of the countries in the Region, guidance must be developed that can be adapted for different country contexts. Lower-middle-income countries face challenges including population size, infrastructure and health workforce. Pacific countries have special challenges that include ICT infrastructure, geography, population size and more flat non-mainstream health service structures.

• A stepwise approach is essential. This should cover governance, enterprise architecture and processes. Emphasis on the ‘why’ e-health for service delivery, ‘what’ e-health can be harnessed for service delivery, and ‘how’ this can be implemented should be the core of the paper, including identifying priority areas for action.

• The linkage of e-health and integrated service delivery should be articulated in the paper.

2.4 Implementation, sustainability and scalability of e-health applications – the “how”

This session was focused on e-health implementation, and commenced with a presentation from an e-health reviewer.

e-health implementation (Ms Margaret Kennedy)

• Guiding principles for e-health implementation were introduced:
  ○ Country-led: strategies must be locally relevant
  ○ Equity-focused: address social determinants of health and inequitable access
  ○ Participatory: respond to needs of local populations
  ○ Systems strengthening: take a holistic approach that avoids further system fragmentation
Evidence-based practice: use best available evidence and cycles of continuous learning and improvement
• Results-oriented: develop strategies to monitor progress
• Ethics-based: autonomy, privacy, equity and justice
• Sustainable: focus on long-term development
• Transformative approach: shift away from traditional thinking.

• E-health was described as a transformation that requires, and is the culmination of purposeful, intentional and deliberate efforts to evolve towards a specific future state. Evolution towards transformation was described in three stages: replication, innovation and transformation.

• E-health implementation considerations were outlined in three domains:
  • Clinical: user adoption; accessibility, timeliness and data quality; capacity development; sustainability; knowledge transfer and sharing
  • IM/IT: core functionality aligned to business needs, standardized data, interoperability, privacy and security
  • Management practices: leadership and partnership roles, leading strategic transformation, governance, standards, regulation and comprehensive change management.

• The value of e-health was presented using the Canada Health Infoway Benefits Evaluation Framework. It consists of three pillars: quality of care, access to care and productivity.

• To achieve e-health transformation, both the technical and human processes were stressed, as were shared priorities, challenges and success factors.

Comments for the Regional Action Agenda
• Most countries are not yet at the stage where they can start weaving digital health strategies into the core workflows of the health system, without updating their current processes, risk management strategies, and governance strategies that build upon established e-health knowledge, capacity and infrastructure.

• Technology alone cannot push the boundaries on co-creation in healthcare and changing models of care. Technology is not a saviour, but an enabler. A broad lens needs to be applied to consider how transformative model is conceptualized. The Canada Health Infoway Benefits Evaluation Framework was considered to be a useful framework for e-health evaluation and success measures.

• It was suggested to include a section on successful e-health implementation in the Regional Action Agenda, with possible measures for success. The overall objectives of e-health for improved health service are better quality service access with lower cost for the whole population.

e-health implementation (Dr Molly Coye)
• Indicators of success and how we understand if e-health is making a difference is critical.
• Countries must be provided with guidance on the must-do and key investments, even if technologies are evolving quickly.
• Current capacity should be described to develop future strategies:
  • Analyse current capacity and situation to make resource use efficient. Need to first understand the fundamental business needs, and then what to change and transformation goals.
  • Establish a country strategy, with consideration of different contexts including rural and island regions, for example the optimal goal is to improve access or reduce the cost of providing access.
  • Analyse what has been done with greatest impact, for example community education or provision of urgent care through community health workers.
Comments for the Regional Action Agenda

- From a technology perspective, standards are critical as they lay the bedrock for successful implementation as well as for the use of data (comparability, quality etc.). This should be a key foundational investment.
- Deciding the outcome goal with stakeholders is an initial step for transformation. Effective implementation is extremely difficult if there are different perspectives. What matters is not the technology used but better outcomes and support from professional practice. Determining what the business needs are, what the outcomes are, and how to get there is a solid investment.
- There could be some investigation of the relative difference in cost of investment for many digital solutions, in comparison to direct investment in traditional clinics, professional workforce, etc., and in relationship to the improved access and savings. For example, a case study on this could be useful.
- Consider potential timelines for the development of governance, and infrastructure. In practice this might take many years for some countries; a sense of priorities, and what must actually be done versus what is ideal is important, and how to parallel some of these work streams to speed up the development of capabilities.

2.5 Discussion of priority areas of action based on the framework/Comments from experts (group work)

**Individual**

- Use the DeLone and McLean of information systems success model:\[1\]:
  - Enabling factor/strategy
    - Quality of e-health system
    - Quality of information
    - Political or management factors
  - Outcome measure for individual
  - Goal
    - User satisfaction
    - Use of e-health
  - Integrated service delivery value
    - Quality
    - Access
    - Reduced financial burden
- Details of enabling factor/strategy:
  - Quality of e-health system
    - User-friendly design, ease of use, ICT infrastructure, enterprise architecture, individual should see benefit
  - Quality of information
    - Content, function (e.g. for screening, early detection, promotion, behaviour change for individual)
  - Political or management factors
    - Regulation, policy, budget
    - Processes, standards, standard operating procedure
    - User training, health/digital literacy

• Action for countries to support individual:
  ○ Establish unique identifier
  ○ Strengthen electronic health records
  ○ Develop health information platform
  ○ Develop national plan for e-health
  ○ Evaluate and monitor
  ○ Involve users in system design
  ○ Ensure standards and inter-operability
  ○ Safeguard privacy and security
  ○ Keep up with technology advancements and use proper technology.

Comments from the broader group
• Rethink underlying assumption that using e-health/user satisfaction means good health outcomes.
• There are some limitations for implementing the DeLone and McLean e-health information systems success model in the real world.

Health service provider
• From UHC perspective, what is integrated service delivery:
  ○ Multidisciplinary
  ○ Virtual consultation
  ○ Clinical pathways
  ○ Provider feedback
  ○ Shared plan
• Advice for governments and providers to adopt e-health for improved health service delivery:
  ○ Establish data system
    ▪ Tackle problem with unique identified data
    ▪ Identify and connect providers
  ○ Central e-Health Programme Management Group
    ▪ As adversary group
    ▪ Knowledge from international case (helpful to developing countries)
  ○ Data standard
• In the context of financial workload incentives
  ▪ Access
  ▪ Reduced financial burden
• Case introduction:
  ○ Republic of Korea:
    ▪ Facing opposition to e-health from doctors, there is concern about a decrease in patient visits and reimbursement
    ▪ Conflicts between Ministry of Health and Ministry of Industry, there is different knowledge and understanding about e-health, which makes collaboration difficult
    ▪ Legislation – in current system, medical consultation occurring through a means other than face-to-face is illegal, and not counted on national insurance system as a consultation
  ○ Japan:
    ▪ Legislation issues are similar to the Republic of Korea
    ▪ Lack of unified data makes professional–professional communication difficult.
Comments from the broader group

- Need to determine the factors for success at the health service provider level, for example identifying patient needs, acquisition of the appropriate skills.
- In order to develop actions for the health service providers, understanding of the individual-level outcome would be helpful.

Health care organization/health system

- Definition of organization level:
  - As e-health service providers, organizations are not limited to health organization, but also enlarged social, finance and education organization.
  - An organization (in discussion) is able to manage change and has governance functions.
- Key capacity for organization
  - Human capacity
    - Human resources, health provider, ability to deliver integrated service, training health workers etc.
  - Technical capacity (conform to standards)
    - Technological knowledge
  - Information capacity (conform to standards)
    - Control quality of information and planning
  - Management commitment
    - Driver for operational implementation
    - Key for governance
- Management and governance
  - Governance level
    - Standards based on culture
    - Organizational policies and strategies to manage risks and achieve vision
  - High level
    - Analyse local requirement
    - Conform to national standards and policy
    - Technologically robust, agnostic
    - Multisectoral e-governance
  - Outsider
    - Research and development from external institutions, academia
    - External relations
    - Community engagement
  - Aim
    - Comfort with ICT
    - Readiness of informatics capability and maturity.

- Discussed the Asia e-health Information Network (AeHIN)
  - Governance
  - Architecture
  - 6Ps: policy, people, process, Patient Master Index (PMI), project management and partnership.
  - 7Ss: strategy, skill and expertise, stakeholder engagement, standards interoperability, scalability, sustainability and security.
2.6 Implementation guidance and wrap-up (plenary)

The plenary followed and was used to summarize the two-day consultation and group work and to further discuss and clarify issues raised by experts. The feedback from the expert consultation will be used to inform, and revise the Regional Action Agenda. The Regional Action Agenda should not be prescriptive and take into consideration the variability of country contexts and the enabling environment for successful e-health development and implementation. The Regional Action Agenda should emphasise the need for continuous investment to drive service system improvement along side developments in e-health, such as human resources, financing, legislation and regulation. The Regional Action Agenda should clearly identify priority areas for action and investment. Partners from outside of health, including finance, social care, ICT, private sector, and academia and research should be engaged in e-health development and implementation.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

Countries have adopted different approaches including electronic medical records, telemedicine, mobile health, real-time surveillance and big data. Uptake has been uneven due to the varying levels of ICT infrastructure. In some countries many pilots have been initiated but not scaled. Countries are also challenged by the rapidity of e-health developments. Many e-health solutions are constrained by challenges such as poor ICT infrastructure and access, aligning investments and implementations with national e-health policies/strategies, incompatible architecture and standards which limit scalability, and patterns of funding which do not support sustainability and adaptation over time.

The draft Regional Action Agenda provides a framework to demonstrate how e-health can act as an enabler for integrated service delivery at the individual, health service provider, health care organization and health system levels.

Countries can successfully harness e-health for integrated service delivery through a range of priority actions. Member States can introduce e-health applications that are more likely to yield service delivery benefits, such as electronic medical/health records and telemedicine. However, key applications will vary in accordance with general ICT environment, national priorities and service needs. Countries can improve information sharing by developing and applying enterprise architecture and information standards. Successful implementation across the health system requires end user engagement, and an e-health policy/strategic plan in line with national health priorities to strengthen leadership and governance, and guide, and monitor e-health developments. There is a need for continuous investment to drive service system improvement along side developments in e-health.

The participants agreed that the enormous diversity across countries and stages of e-health development means that pathways, timelines and priorities for harnessing e-health to support service delivery will differ. The consultation helped identify priority actions for countries and WHO to harness e-health for integrated service delivery in the Western Pacific Region, for discussion at the sixty-ninth session of the Regional Committee in October 2018.
3.2 Recommendations

The following recommendations are overall directions for the Regional Action Agenda development:

1) WHO is requested to revise the draft Regional Action Agenda based on the comments generated at the consultation.

2) WHO is requested to generate more evidence of the current situation in countries, and link with the actions raised in the Regional Action Agenda.

3) WHO is requested to provide the revised Regional Action Agenda to generate further comments from experts and other key partners.
ANNEXES

Annex 1. List of temporary advisers, observers/representatives and Secretariat

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Dr Peter COWLEY, Coordinator, Health Policy and Financing, Division of Health Systems

Ms Katherine Anne SILBURN, Coordinator, Equity and Social Determinants, Division of Health Systems

Dr Abeyasinghe RABINDRA, Coordinator, Malaria, Other Vectorborne and Parasitic Diseases, Division of Communicable Systems

Ms Navreet BHATTAL, Technical Officer, Health Intelligence and Innovation, Division of Health Systems

Dr Warrick Junsuk KIM, Technical Officer, Noncommunicable Diseases Division of NCD and Health through the life course

Mr Sameer PUJARI, Technical Officer, Prevention of Noncommunicable Diseases WHO Headquarters Geneva, Switzerland

Ms Surabhi JOSHI, Technical Officer, Prevention of Noncommunicable Diseases WHO Headquarters Geneva, Switzerland

Ms Maki KAJIWARA, Technical Officer, Services Organization and Clinical Interventions WHO Headquarters Geneva, Switzerland
### Annex 2. Meeting programme

<table>
<thead>
<tr>
<th>Time</th>
<th>Day 1, Monday, 5 March</th>
<th>Time</th>
<th>Day 2, Tuesday, 6 March</th>
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</thead>
<tbody>
<tr>
<td>8:00-8:30</td>
<td>Secretariat meeting (Room 408-I)</td>
<td>8:00-8:30</td>
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<tr>
<td>8:30-9:00</td>
<td>Registration</td>
<td>8:30-9:00</td>
<td>Reflections on Day 1</td>
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<tr>
<td>9:00-10:00</td>
<td><strong>Session 1. Opening</strong>&lt;br&gt;Chair: Gao Jun&lt;br&gt;• Opening remarks (Regional Director) [10 mins]&lt;br&gt;• Participants’ introductions [20 mins]&lt;br&gt;• Administrative announcements (Gao Jun) [5 mins]&lt;br&gt;• Setting the scene: RCM processes, and harnessing e-Health on the road towards Universal Health Coverage (UHC) (Vivian Lin) [20 mins]</td>
<td>9:00-10:30</td>
<td><strong>Session 4. Actions to realize the potential of e-Health for integrated health services</strong>&lt;br&gt;Chair: Gao Jun&lt;br&gt;• Introduce priority action areas based on framework and draft Regional Action Agenda document (Navreet Bhattal) [20 mins]&lt;br&gt;• Discuss priority areas of action based on the framework/Comments from experts: [60 mins, group work TBC]&lt;br&gt;  a. Individual&lt;br&gt;  b. Clinical Encounter&lt;br&gt;  c. Organisation&lt;br&gt;  d. Health Systems&lt;br&gt;• Summary/key messages [10 mins]</td>
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<td>10:00-10:30</td>
<td>Group photo and coffee/tea break</td>
<td>10:30-11:00</td>
<td>Coffee/tea break</td>
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<td>10:30-12:00</td>
<td><strong>Session 2. Report on Regional Action Agenda outline, scope, Regional framework and situation analysis</strong>&lt;br&gt;Chair: Anjana Bhushan&lt;br&gt;• Introduction of Regional Action Agenda outline, scope, Regional framework (Gao Jun) [15 mins]&lt;br&gt;• Introduction of situation analysis and progress to date (Navreet Bhattal) [15 mins]&lt;br&gt;• Comments on regional framework and situation analysis/progress to date [55 mins]&lt;br&gt;• Summary/key messages/changes to the draft Regional Action Agenda document (Gao Jun) [5 mins]</td>
<td>11:00-12:30</td>
<td><strong>Session 5. Actions to put e-Health in practice and support an enabling environment</strong>&lt;br&gt;Chair: Gao Jun&lt;br&gt;• Introduce priority actions areas to support an enabling environment for e-Health, including cross-cutting actions by groups of countries (Navreet Bhattal) [15 mins]&lt;br&gt;• Discuss priority areas of action based/ Comments from experts [70 mins, group work TBC]&lt;br&gt;• Summary/key messages [5 mins]</td>
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<td>12:00-13:00</td>
<td>Lunch break (Cafeteria Function Room)</td>
<td>10:30-11:00</td>
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<td>13:00-14:00</td>
<td><strong>Session 3A. e-Health as a mechanism to improve integrated service delivery, possible contributions and challenges – the ‘what’</strong>&lt;br&gt;Chair: Kate Silburn&lt;br&gt;• Summary/key messages from the evidence reviews – 1. e-Health applications (eMR/eHR, m-Health, Telemedicine) (Vicki Bennett, Teng Liaw Siaw, Raymund Sarmiento) [30 mins]&lt;br&gt;• Comments from experts on key messages from the reviews, and linkages between e-Health and integrated service delivery (contributions, challenges, lessons learnt, identify areas where benefits can be harnessed (real gains), additional case studies) [30 mins]</td>
<td>11:00-12:30</td>
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<td><strong>Session 3B. e-Health as a mechanism to improve integrated service delivery, possible contributions and challenges – the ‘what’</strong>&lt;br&gt;Chair: Kate Silburn&lt;br&gt;• Summary/key messages from the evidence reviews – 2. Enabling factors to allow e-Health to improve integrated health services (e-</td>
<td>12:30-13:30</td>
<td>Lunch break: Lunchtime presentation on the ‘Be He@lthy Be Mobile’ initiative (Sasubhi Joshi and Sameer Pujari)</td>
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<td>12:00-13:00</td>
<td>Mobility break/Coffee will be served</td>
<td>13:00-15:00</td>
<td><strong>Session 6. Implementation guidance and wrap up</strong>&lt;br&gt;Chair: Gao Jun&lt;br&gt;• The way forward, including recommendations for WHO and member states</td>
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<td>13:00-14:00</td>
<td>Lunch break (Cafeteria Function Room)</td>
<td>13:30-15:00</td>
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<tr>
<td>14:00-14:15</td>
<td>Reflections on Day 1</td>
<td>14:00-15:00</td>
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<td>14:15-15:30</td>
<td>Reflections on Day 1</td>
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<td>15:00-16:30</td>
<td>Reflections on Day 1</td>
<td>16:30-17:00</td>
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Time indicates the start of the event, and Day 1 or Day 2 indicates the day of the event. The meeting programme includes sessions on various topics, such as e-Health, integrated service delivery, and policy discussions.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Duration</th>
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<tbody>
<tr>
<td>15:30-15:45</td>
<td><strong>Health implementation, architecture and interoperability</strong> (Jai Ganesh) [10 mins]</td>
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<td>10 mins</td>
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<td>- Comments from experts on key messages from the reviews, and linkages between e-Health and integrated service delivery (contributions, challenges, lessons learnt, identify areas where benefits can be harnessed (real gains), additional case studies) [60 mins]</td>
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<td>60 mins</td>
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<td>- Summary/key messages [5 mins]</td>
<td>(Navreet Bhattal)</td>
<td>10 mins</td>
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<td>15:45-17:00</td>
<td><strong>Session 4. Implementation, sustainability and scalability of e-Health applications – the ‘how’</strong></td>
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<td>- Presentation e-Health implementation (Margaret Kennedy) [10 mins]</td>
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<td>- Comments from experts on potential impact of e-Health applications, success stories and cautionary tales, how can we make sure e-Health implementation is successful, how can countries ‘leapfrog’ [50 mins]</td>
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<td>50 mins</td>
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<td></td>
<td>- Summary/key messages [5 mins]</td>
<td>(Vivian Lin)</td>
<td>5 mins</td>
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<tr>
<td>17:00-18:00</td>
<td><strong>Reception (Al Fresco area)</strong></td>
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<td>60 mins</td>
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Coffee will be served 15:45 - 17:00

Closing remarks