WEBINARS AS A KNOWLEDGE SHARING PLATFORM FOR eHEALTH IN SOUTH AND SOUTHEAST ASIA

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Abstract

Setting up fully functional national eHealth systems is a challenge. Developing eHealth capacities in Asia can be achieved through distance learning such as webinars. The Asia eHealth Information Network (AeHIN) is a community of about 900 professionals in South and Southeast Asia, convened as a peer group dedicated to strengthening local health systems through the use of information and communication technologies. It organised the AeHIN Hour held twice monthly as a venue for knowledge sharing. This paper will describe and analyse the context, inputs, processes and products of the AeHIN Hour webinars implemented over 47 months. Data is analysed through review of literature and AeHIN Hour technical reports. Analysis revealed that the AeHIN Hour provides individuals with a platform to learn and establish connections with other experts and like-minded individuals who could assist them in their current health system strengthening efforts. AeHIN paves the way for countries to recognise challenges and issues they face which are important for substantiating existing technical assistance. Shared interests among stakeholders sustain the activity. Management of the AeHIN Hour should be strengthened in order to maximise its value in building capacities among country-level actors who would shape the course of health systems strengthening.

Keywords: eHealth; knowledge sharing; webinars; Asia

Introduction

The global community is gearing up towards fully functional eHealth systems, amid challenges and building on lessons from earlier implementations.[1] eHealth is defined as the use of information and communication technologies (ICT) for health.[2] eHealth is a necessary tool to measure progress toward universal healthcare.

Asian countries have varying stages of maturity of their respective eHealth systems. This translates to a wide-range of technical support needed for countries to experience the full potential of eHealth's positive effects on national health goals.[3] The lack of formally trained e-Health personnel (especially those with expertise in health informatics) is a recognised hurdle in supporting the development of eHealth systems.[4] The slow uptake of eHealth among health professionals is attributed to the lack of more practical training approaches; the challenge to provide such still remains.[5]

The fast-pace development of ICTs themselves led to the design and development of online platforms for learning which makes it possible for individuals in geographically-disparate locations to learn from each other.[6] Webinars and online learning platforms bridge the gap of instruction and implementation as they are proven cost-effective and convenient aids to build human competencies.[7,8]

At present AeHIN is a community of more than 900 eHealth professionals from ministries of health, and the ICT, academic, and private sectors.

It is committed to supporting country members in building country eHealth, health and civil registration and vital statistics (CRVS) information systems for social development. AeHIN uses webinars extensively as a mode to share knowledge among its members.[9] It has delivered more than 60 webinars – called the AeHIN Hour – on a variety of topics since its launch in September 2012.

This paper presents lessons learnt from implementing AeHIN webinars as a knowledge sharing platform.

A four-year old network AeHIN is already a registered independent organisation, and is moving forward more deliberately in its mission to support country efforts towards achieving Sustainable Development Goals. In line with its strategy of strengthening eHealth systems through peer-to-peer learning, results of this study intends to provide better directions for countries in providing alternative ways of knowledge sharing and capacity-building.

This study describes and analyses the context, inputs, processes and products of the AeHIN Hour webinars implemented over 47 months. The paper explains how the AeHIN Hour emerged as a knowledge sharing platform on eHealth in South and Southeast Asia, and presents results about stakeholder engagement, lessons in webinar implementation, and then describes the potential for assisting countries in the development of their national eHealth strategy and implementations.

Methods

The design and implementation of AeHIN Hour webinars were analysed through evaluation of their Context, Input, Process, Product. These categories were adapted from the education evaluation approach developed by Stufflebeam (1983).[10] The *context* is the environment in which the AeHIN Hour was developed: the problems, needs of the target population, assets, and opportunities within the defined AeHIN community. The *inputs* to the AeHIN Hour are the types (and level of) resources that enabled the webinar: the financing, equipment, ICT infrastructure, and human resources. The latter are also considered the stakeholders of the AeHIN Hour as a knowledge platform. *Processes* are activities during the preparation, conduct, conclusion and evaluation of the AeHIN webinar. *Products* are the output of the series of webinars such as webinar recordings found on the network's website.

Data are based on AeHIN project reports as well as feedback from AeHIN Hour participants. Evaluation forms were sent to webinar participants from 42 countries who attended any of the 62 webinars held from September 2012 to April 2016. Data were cleaned by removing double entries and validating email addresses from the webinar attendance lists. Qualitative responses were consolidated and emerging themes were defined. The responses were classified into four themes—what was learned, enthusiasm to join the webinars, ease of use of the technology, suggested topics.

Results

Context

The pace of ICT development increased exponentially after the start of the new millennium. In December 2003 the global leadership formally recognised the strategic role of ICTs for health through the *Geneva Declaration of Principle and Plan of Action of the First World Summit on the Information Society* held in December 2003, supported by the 58th World Health Assembly Resolutions on eHealth in May 2005.[11] About a decade later did the founders of AeHIN had the opportunity to convene as an interest group. The founders recognised the need to govern the slew of eHealth initiatives and pilot tests; country-level integration and governance were already a critical imperative across countries in Asia.

During this time of growing interest and pioneering implementations, the capacity to harness the potential of ICT to actually meet national health goals was lacking. During its 1st General Meeting AeHIN priorities were identified as to "build capacity for eHealth, Health Information System (HIS), CRVS, and information systems in the countries and the region" and to "increase peer-assistance, knowledge-exchange and sharing through effective networking". Support for AeHIN came largely from the WHO Western Pacific Regional Office (WHO WPRO), which in turn and together with the AeHIN Working Council (WC), was able to engage 19 other development partners to support these expressed goals. A year later in 2013, AeHIN developed its country eHealth Capacity Building Roadmap, based on the WHO-ITU National eHealth Strategy Toolkit. Capacity building events held in the traditional face-to-face training modality would be limited to professional certificate short courses (such as on The Open Group Architecture Framework (TOGAF) and Control Objectives for Information and Related Technologies (COBIT)). Convening participants and the courses themselves required considerable resources.

The AeHIN Hour was proposed and implemented beginning September 2012, an offshoot of the 1st AeHIN General Meeting. It was thought to be the regular venue for the Network to converge and discuss common development interests. AeHIN utilised

webinars to connect its 90 founding members from 19 countries with resource persons to share experiences, strategies, and approaches to eHealth implementation.

Input

All members in an organisation have an interest on how educational sessions are designed, developed, deployed and how learners perform acquired skills. A stakeholder approach was used in evaluating the inputs and presumptive interests of the central actors to the webinar. Table 1 lists stakeholder contributions and incentives in developing and implementing the AeHIN Hour; incentives are factors that will encourage or motivate stakeholders to continue contributing to the educational activity.

In general, the stakeholders are supportive of each other, meeting interests in a mutual give-and-take way.

The AeHIN Working Council constituted the informal 'curriculum committee' and determined the topics based on AeHIN goals and input from other stakeholders, as described. The process objective is to regularly conduct the AeHIN Hour, which is easily met. What is not explicitly stated, however, are the outcome measures by which this educational activity should be evaluated, and specifically behavioural outcome objectives of the "learner"- participants. Review of the AeHIN Hour processes and outcomes was also informal and irregularly held.

Resource speakers are experts known to and invited by the AeHIN Working Council to the AeHIN Hour. They are from UN Agencies, nongovernment organisations, academe, and the government. Most are experts on health information systems and hail from Asia, Europe, North America, and Australia.

Development partners, participants and the speakers themselves recommend related or other eHealth topics (and experts) through the webinar and/or other communication channels of the Network.

The AeHIN Hour Facilitator designed and implemented various phases of the AeHIN Hour, i.e. from preparation to evaluation and report generation on the webinar. A module was designed and implemented likewise, to train other Facilitators of local country AeHIN Hours. The webinar Facilitator is part of the AeHIN Secretariat, activities of which are funded through a grant from the WHO WPRO.

"Webinar attendees", when asked of their motivation for participation, majority declare it to be for professional development. Nine AeHIN members attended the first webinar and the figured doubled in subsequent sessions.

The initial time slot was every last Friday of the month, 15:00 UTC/GMT+8. It was later on revised in consideration of the time of prayer of Muslim members; suggested likewise was to schedule it earlier in the work week rather than on a Friday early evening when the weekend began. The current time slots are every second Wednesdays and last Thursdays of the month, 16:00 UTC/GMT+8. Special AeHIN Hour webinars are occasionally held on schedules that work best for speakers. The webinar is conducted in English.

Country AeHIN Hours were also proposed and are currently implemented in five countries. Bangladesh, Cambodia and Thailand hold this is in the local language, while in the Philippines and Sri Lanka they are usually held in English.

A 25-seat Cisco WebEx Meeting Centre videoconferencing subscription was made available through the support of WHO Western Pacific Regional Office (WPRO). In September 2013, due to increasing number of attendees, the subscription was upgraded to a 100-seat licence. Sessions were also more aggressively announced by the AeHIN Secretariat. At present, a 500-seat subscription is funded by the WHO WPRO. Advertising (of commercial products or services) is not a feature of the AeHIN Hour at present; the webinar series is mainly for information sharing. As a resource shared by the WHO, use of the AeHIN Cisco WebEx Meeting Centre room is regulated by the AeHIN Working Council (WC) and Secretariat to adhere to WHO policies. (The Webex platform also served as venue for the regular online meetings of the AeHIN WC, and oftentimes with development partners.)

As an independent organisation, AeHIN will eventually finance the AeHIN Hour fully from resources the Network generates.

Process

The AeHIN webinar is conducted in three phases: preparation, webinar proper, and conclusion.

In preparing the webinar, the AeHIN WC identifies and invites experts in eHealth, HIS and/or CRVS. The speaker is introduced to the AeHIN Hour Facilitator, who in turn, coordinates with the speaker to schedule the webinar, collect the speaker's information, and presentation slides. The Facilitator then orients the speaker of the programme flow and how to use the webinar platform.

Publicity materials (which include the webinar overview and instructions on how to use the Webex

Table 1. Illustrative stakeholder contributions and incentives.

Stakeholders	Contributions	Incentives
AeHIN Working Council	Leaders of the organisation, Identifies topics and introduces resource persons to AeHIN (network and Secretariat/ AeHIN Hour manager). Control: ensures topics are consistent with AeHIN goals and what members need. Control: as eHealth experts, ensures quality of discourse to be evidence-based. Control: Identifies enablers and challenges in operations, suggests ways to improve the webinar, designs policy. as eHealth experts – act as resource persons as well.	Country benefits through application of educational material from the AeHIN Hour. Passion for eHealth for patient safety and social development. Strengthening and enlarging the peer-network as venue for experience and knowledge exchange. Learn from others in the webinar. Expand own professional network. Stature and recognition, Referrals for future professional engagement.
Resource persons	Expertise and experience. Suggestions on other topics / resource persons. Suggests ways to improve the webinar.	Share knowledge & clarify misconceptions. Participate in building community-of-practice. Learn from others in the webinar. Expand own professional network. Stature and recognition. Referrals for future professional engagement.
Facilitator (AeHIN Secretariat)	Time, energy, skills. Design and application of design of AeHIN Hour operations (preparation to conclusion & evaluation of the webinar, report generation). Design and application of design on training of other Facilitators of Local AeHIN Hours. Control: Identifies enablers and challenges, suggests ways to improve the webinar, implements policy.	Professional and personal satisfaction. Pay & continued employment. Professional development. Expand own professional network. Stature and recognition. Referrals for future professional engagement.
Funders (Development Partners)	Financing of the AeHIN Secretariat and Webex Platform. As Technical Experts: Suggestions on other topics / resource persons. Identify enablers and challenges, suggests ways to improve the webinar.	Meet organisational mandate for technical assistance. Operational and financial impact of expected social value.
Attendees' supervisors (Direct supervisor of webinar attendees)	Opportunity costs of releasing the employee to attend the AeHIN Hour.	Improved (capacity) performance of employee the job.
Attendees (webinar participants)	Time, attention, energy and knowledge, participation. Suggestions on other topics / resource persons	Useful information. Skills and knowledge, tools and job aids. Improved performance and standing with employer. Expand own professional network. Opportunity for collaboration, employment.
Technical Provider (the Webex Platform)	Software platform development costs, service provision and corporate reputation.	Money, repeat business, enhanced reputation, referrals.
Other eHealth service providers	(Commercial eHealth service providers are not currently engaged by AeHIN). Resource/ service options for AeHIN members.	Stature and recognition. Referrals for future professional engagement. Expand market / distribution channels.

platform) are developed and posted on the AeHIN website, social media accounts and sent to AeHIN members through the LISTSERV AeHIN mailing list.

During the webinar proper, the Facilitator opens the webinar room, welcomes participants and speakers. Preliminary checks are made: the speaker's audio is clear and slides are loading efficiently. The Facilitator lists the house rules of the webinar and checks if all participants can hear the speaker. The formal welcome and introduction of the speaker is made by either the AeHIN WC or the Facilitator. After the speaker's lecture, the Facilitator moderates the question and answer portion. Before closing the session, the Facilitator reminds participants to fill out the AeHIN Hour feedback form, that archived materials posted in AeHIN's repository site, http://aehin.hingx.org. An invitation to the next AeHIN Hour is also made. The webinar is concluded by either the AeHIN WC or the Facilitator likewise.

Participant feedback is collected through an on-line evaluation tool. The Facilitator stores the webinar recordings and prepares the relevant reports on these webinars for evaluation by the AeHIN WC.

Products

Participants. The webinar targeted AeHIN members and eHealth professionals in South and Southeast Asia. From September 2012 to April 2016, the total number of participants in all 62 regional AeHIN Hours was 1160, although there were 528 unique individuals. On average, individuals attended 2-3 sessions over the 47 months. There was an average of 18 attendees per webinar, with a range of seven to 63 for the regional AeHIN Hour webinars. Each individual would have attended two-three webinars during the 47-months. For the local AeHIN Hours, participants ranged from two to 100; highest attendance was for the DHIS2 Individual Tracking system in Community-based clinic for Community Health Workers webinar of the Bangladesh AeHIN Hour.

Of the 528 unique individuals from 24 countries who attended the webinars, 41% were AeHIN members, most (59%) were non-members. Participants were: 42% males, 24% females; the remaining 33% did not supply this information. Of the 528 participants, 43 (8%) became members immediately after attending a webinar. This number is small and unexpected but nevertheless encouraging.

The demographics of the affiliation, fields of expertise, frequency of participation, expertise of frequent attendees and their affiliation is shown in Figure 1.

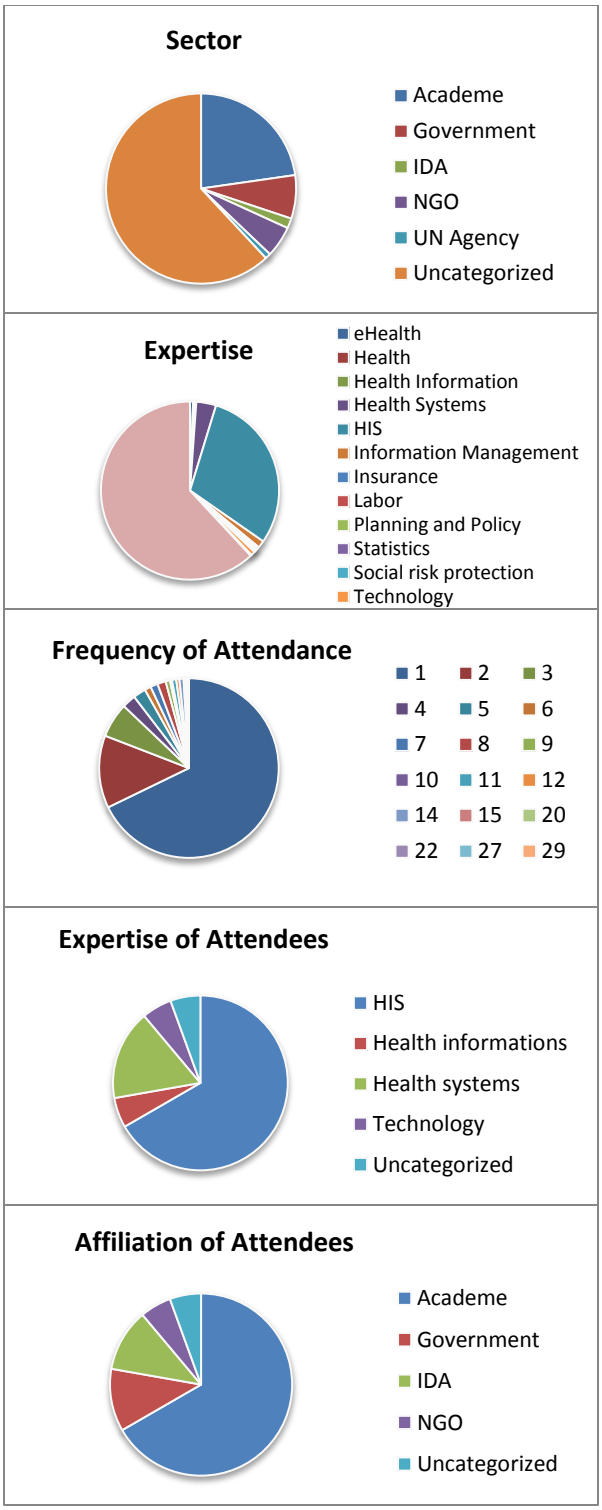

Figure 1. Pie charts a-e show a) the sectoral affiliation of participants, b) the field of expertise of participants, c) the number of times unique individuals joined webinars, d) the field of expertise of 18 most frequent AeHIN Hour attendees and e) the affiliation of 18 most frequent AeHIN Hour attendees.

Many of the participants were experts in health information systems (30%) and health systems experts (4%) and were from the academe (23%) or government (7%). More than half of the participants (62% in both fields of expertise and affiliation) were non AeHIN members, and did not offer this personal information. More than half of the participants attended once (68% of 528) while 18 individuals (3%) attended 10 or more webinars. Most participants attended one webinar only and most of them were non-members (75% of 358, or 270 persons).

Those who attended 10 or more webinars were all AeHIN members except one. The 18 most-frequent attendees' expertise was in health information systems (67%) and most of them were in academia (66%).

Webinar topics

AeHIN developed a National eHealth Capacity Roadmap.[12] It started with and built on the WHO-ITU's National eHealth Strategy Toolkit, a guide for countries in developing, maintaining, strengthening, and accelerating national eHealth efforts for national development. The Roadmap ensures that the considerable investment in eHealth capacity building is based on sound governance, planning, management, and optimisation procedures.

Webinar topics were classified according to the seven components of the WHO-ITU National eHealth Strategy, described briefly as follows:

*Leadership and governance. T*opics related to lead organisations and mechanisms that set national goals and fundamentally set down an enabling national eHealth environment. These also include topics that align, organise, manage and evaluate eHealth activities requiring national government investment.

Strategy and Investment. Sessions devoted to defining the national roadmap as well as funding mechanisms for its execution.

Legislation, policy and compliance. Webinars that discuss the legal foundations and defined programmes to operationalise the national eHealth strategy. These guide and compel the various eHealth players to align themselves with the national direction and strategy.

Workforce. Topics related to mechanisms that hone eHealth skills, encourage and regulate the practice of a broad range of human resources (health-care staff, health technology providers, and health IT workers). Health informatics professionals are of special need of developing countries, and members of the AeHIN.

Standards and interoperability. Webinars that convey the imperative that health information is semantically and syntactically unified and harmonised regardless of end-user health IT applications. This paves the way for consistent collection and exchange of health information by making data and systems compatible.

Infrastructure. Discussions that refer to national (and possibly private sector) investment in the physical hardware and networks required to ensure electricity, and that ICTs are in place and of good quality to allow an eHealth-enabled health environment.

Services and applications. Sessions about the eHealth tools and innovations that end-users – patients, health workers and managers – utilise to efficiently respond to the needs of patients, health-care providers, managers, and administrators.

The number of topics covered by year is shown in Table 2.

Maiden topics for webinars were developed from eHealth implementation challenges identified during the AeHIN general meeting launch in 2012. Country representatives expressed the need to have more structured yet general discussions on eHealth, Health Information Systems, CRVS, Information Systems, aggregate data management and advocacy skills to promote eHealth. These reflected the need for more

Table 2. AeHIN Hour topics categorised according to components of the WHO-ITU Toolkit.

Categories	2012	2013	2014	2015	2016	Total
Leadership and Governance	1	2			1	4
Strategy and Investment			1	3		4
Legislation Policy Compliance	1					1
Workforce	1	2	3	3		9
Infrastructure						
National Standards and Interoperability	1	5	5	3		14
Services and Applications		5	8	8	3	14
Others		2		1		3
Country Update					3	3

rigorous know-how on the fundamentals of digital health and its links to health systems strengthening.

Out of the 62 regional AeHIN Hour webinars, most topics (24.4%) focused on Services and Applications. This reflected the rapid flourishing of such innovations, and where excitement with what works abounded. There was only one session on Regulation and Legislation, and there were no sessions that covered Infrastructure concerns (Appendix A).

The AeHIN Academy was launched subsequently and its first offering consisted of a series of discussions on the seven components of a National eHealth Strategy.[3] The topics were presented, each session flowing on from the previous. This series was premised on its potentials to assist countries in the development of their national eHealth strategies. Yet, out of the 106 individuals who signed up and attended the first sessions of the course, only 23 (22%) completed the programme and 'graduated'. Or, conversely, there was a 78% attrition rate – a number that reflects the same very low completion rates that plagued massive open online courses.[13,14] Further, the webinar feedback does not evaluate if in fact there was learning.

Participant feedback

At the end of each AeHIN Hour, participants were asked to answer a five-question evaluation survey. Three parameters were rated using a scoring system ranging from 1 to 5, where 1 was lowest and 5 highest. These rated how much they felt they learned from the session, and the ease of participation and navigating the Webex platform (registration, Q and A using voice and chat, as well as feedback / evaluation). Participants were also asked to rate their level of participation in the webinar.(Figure 2)

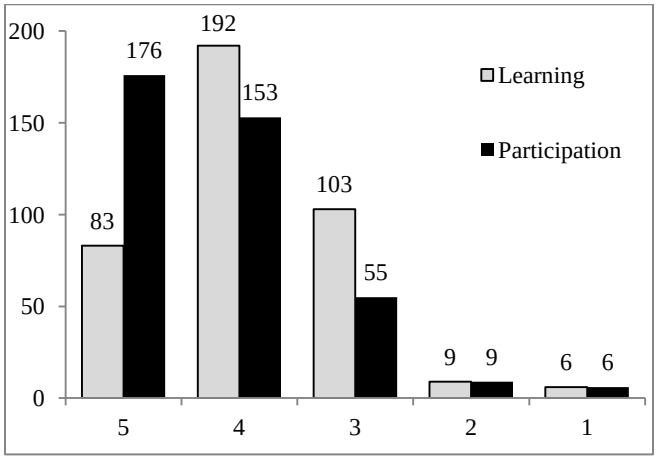

Figure 2. Participant feedback.

Two open-ended questions were also included: Identify major take-aways (lessons) of the session, and suggest ways to improve the AeHIN Hour.

Out of the 1160 surveys sent, only 400 responses were retrieved (34% retrieval rate). Almost half of the respondents 192 (48%) gave a rating of 4 or 5 when asked how much they learnt during a webinar. Almost all 322 (81%) considered themselves to have actively participated in the webinar.

For "ease of participation and use of the Webex platform", almost half of the participants 176 (44%) gave the highest possible rating of 5; one individual gave the lowest rating of 1. Technical problems with the Webex were encountered, especially among first-time participants who, unfortunately, comprised the majority. This was despite the orientation which was conducted at the start of each forum.

Qualitative responses on improving the webinars were of two general categories; first was on suggested topics, which essentially was a demand for "more country specific presentations". Participants across the 62 sessions queried about implementation enablers and challenges of countries. The second was on process improvements such as requests for explaining each webinar's background information more extensively, for audio and/or platform testing before actual webinar sessions, clarification regarding local time slot in respective countries, and improvements such as dividing the discussion to keep participants engaged. These were addressed throughout the 47 months of the AeHIN Hour, but since many are first-time participants, the same problems were encountered.

Other comments were essentially commendations, especially on country-level implementations and online publicity of the AeHIN Hour on social media. There were some requests for use of the Webex platform, which subsequently led to the organisation of local webinar series as well.

Expanding locally: country AeHIN hour

AeHIN members took the initiative to conduct local AeHIN Hours for country-level participants. This began in 2014 with four countries; Bangladesh (through staff of GIZ assisting the Bangladesh health ministry), Cambodia (proponents of the *Better Health Service* Project), Philippines (Medical Informatics Unit of the University of the Philippines Manila), and Thailand (Thai Health Information Standards Development Centre).

In 2015 a milestone was achieved where local AeHIN Hours were formalised through a Memorandum of Agreement between AeHIN and the

local implementers, namely the Health Informatics Society of Sri Lanka and the Philippine Medical Association. Beginning this year too, closer monitoring was done by the AeHIN Secretariat through reports submitted by the Local AeHIN Hour Facilitator.

From March 2015 to March 2016, 40 local AeHIN Hours were conducted by partners in Cambodia (seven sessions), Sri Lanka (eight), Philippines (18), Thailand (six), and Bangladesh (one). Most topics again centred on Services and Applications, while none were held on Workforce and Infrastructure concerns. (Appendix B)

Discussion

Vision

The AeHIN Hour needs clarification, and management processes need to be strengthened. Initially, AeHIN Hour was guided by its over-all process goal "to share experiences, strategies, and approaches in respective eHealth implementations." Each speaker contributed to the curriculum from the basis of their expertise.

The sessions did not follow a strict curriculum but fell within topics on the WHO-ITU eHealth components. They were conducted based on the diverse interests of the network membership and limited goal of the AeHIN Hour as a knowledge-exchange platform among peers. There is now a need for clear, measurable and outcomes-based objectives for AeHIN Hours. This would also allow AeHIN to evaluate webinars more rigorously as knowledge products and / or as a process that generates knowledge.

Nevertheless, the AeHIN webinar demonstrated its utility for knowledge sharing and led to identifying other eHealth information needs. Webinar topics were suggested by participants from sessions, and enabled them to verbalise not only success of their country implementation but also status, issues, and challenges in their eHealth systems. Topics continued to expand to showcase more innovative interventions, best practices, and updates on eHealth in the region.

Whereas the webinar was held regularly and covered a plethora of topics, the process to track whether the number and/or depth of discussions were contributing significantly to the participants' capabilities was not in place. There was modest attendance of 18 participants, despite all education investments.

Management of the AeHIN Hour should be strengthened. The WC should consider designating a focal point specifically to oversee the AeHIN Webinar. Improvements are needed in the registration of and gathering feedback from participants, and maximising the webinar for its recruitment potential for AeHIN. Lessons from implementation of distance learning including massive open online courses (MOOCs) should be considered more deliberately.

Because of the nature of AeHIN, deeper consideration should be given to the strategic value of the AeHIN webinar in the light of gains (efficacy for knowledge sharing) and challenges (efficiency).

Maintaining shared interests

Stakeholders' having a shared interest is key to maintaining the webinars. There were three important incentives identified: 1) professional development (improved standing, meeting one's professional responsibilities), 2) personal satisfaction, and 3) financial gains (pay, money). Enhancements of the AeHIN Hour should be hinged on these, as steps towards sustaining the webinar.

Participant characteristics are typically defined to help educators or educational institutions in targeting more specific populations who would potentially benefit from such offerings. Many have attended the AeHIN Hour and some have been attracted to the Network through this route. But there is no compelling reason for those who have so far attended to continue to participate, unlike the formal distance learning graduate degree or short courses with certification programmes. Mirroring the general challenges of on-line learning, the AeHIN webinar is neither able to keep nor attract participants to come back for subsequent discussions. AeHIN has not been purposeful in such tasks as targeting or retaining participants. More focused attention should be given to this mode of recruitment into the Network. Fully engaging all participants who have varying interests and cultures is always a challenge in webinars meant for an international audience. The Network leadership needs to more fundamentally review the goals of the webinars and clarify the type of participants and quality of participation they envision for this forum.

Country experiences guide members

In a region with varying maturity of eHealth implementations, knowledge-sharing posits greater benefits than setting up systems in isolation. Webinars designed by AeHIN provided an avenue for experts and learners from the government, academe, and professional agencies to learn together and identify

possible solutions to challenges experienced by participants in their own countries. It facilitates a cyclical flow of information that brings about further creation of new knowledge for attendees.

The AeHIN Academy, a feature of the AeHIN Hour, was conceived to be a more structured series of topics. It was launched in 2014 and centred on the components of the National eHealth Strategy – intended mainly to strengthen country-level advocates' skills in their roles as implementers of the National implementations. The low completion rate and insufficient participant evaluation methods are some areas for improvement. AeHIN is contemplating strengthening of the AeHIN Academy in the near future; lessons from this first foray must be considered more cogently.

Conclusion

Webinars delivered by AeHIN have the potential to guide countries as they build their national eHealth strategies and infrastructure. The AeHIN Hour provided individuals with an extensible platform not only to learn but to establish connections with other experts and like-minded individuals who could assist them in their current eHealth/health information systems situation. It paved the way for countries to recognise challenges and issues they face which are important for substantiating existing technical assistance. Shared interests among stakeholders sustained the activity. Management of the AeHIN Hour should be strengthened in order to maximise its value in building capacities among country-level actors who shape the course of health systems strengthening.

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Conflict of Interest. The authors declare no conflicts of interest.

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Appendix A

Regional AeHIN Hour webinars categorised according to components of the WHO-ITU Toolkit (with complete title).

Year	Leadership & Governance	Strategy & Investment	Legislation Policy Compliance	Workforce	Infrastructure	National Standards and Interoperability	Service and Applications	Others	Country Update
2012	WHO ITU Strategy Toolkit		HIS/CRVS regulation	Good eHealth Practice on RHeA and OpenHIE		Developing Health Data Dictionaries			
2013	* Learning from Canada Health Infoway * Placing Countries In-Charge of their eHealth Destiny			* Health Informatics Training in Indonesia * Clinician Led eHealth Records: A Knowledge Approach to the Sharing of Health Information.		* Cambodia Patient ID, Data Privacy, Security, & Confidentiality * Integrating the Healthcare Enterprise for Developing Countries * Health Facility Registry * EHR Adoption in Taiwan * EA as a Strategy for Developing Countries	* mHealth for Non Communicable Diseases * Optimising HIS: Initiative Works on Integrating OpenMRS to DHIS2 * Translating OpenMRS to DHIS2 * mHealth for Interoperability * Getting Started with HingX	* Innovation is the Key to Achieving Health Related MDG * Updates from MedInfo 2013	
2014		* AeHIN Hour with Information and Communication Technologies for Women's and Children's Health: A Planning Workbook		* eHealth Capacity Building The Importance of Health Informatics * Learning Public Health Informatics Nuts and Bolts: Competency-based Informatics		* Enterprise Architecture and the Role of Archimate and TOGAF * Effective Use of Information Systems for Non-profit organisations * Innovation in Healthcare IT Standards: The Path to Big Data	* Get back our eHealth to our Hands with Open Source Software and Open Standards * Online Meeting for eHealth Moving Forward * Telemedicine Advances in Asia		

				Training Programmes at CDC * The nursing contribution to health information worldwide		Interchange * SNOMED CT - the global language of healthcare * ISO	* Mobile Technology for Community Health * Big Data: Applications and Opportunities in Healthcare * An Overview of the Health Information and Intelligence Platform (HIIP) for the Western Pacific * A Critical Appraisal of Clinical Decision Support * Real-time Cross-platform Alerting System with Simple Email Infrastructure		
2015		* How to Achieve National eHealth Goals through Partnerships * Innovation in Primary Care: Insights from the Primary Care Innovator's Handbook * Scaling up Telemedicine: The MOMENTUM-TREAT		* Extending the Global Reach of Community Health Nursing Education * Boosting Australasian Profile in Informatics in Primary Care * Strengthening Country RHIS Strategic Approaches by		* Three decades of eHealth at the Hong Kong Hospital Authority * SS-MIX: A Ministry Project to Promote Standardized Healthcare Information Exchange * New Zealand embraces SNOMED CT for trusted, actionable health information	* Running a Government Funded Telemedicine Network: The Ontario Experience * Leveraging Public Health Data from a Network of Outpatient EHRs: the New York City Experience * #HealthXPh:	AeHIN Performance Review 2011-2014 and Online consultation for General Membership for Activities 2015-2017	

		Framework		the MEASURE Evaluation			Tweet chat on emerging technology and social media in healthcare * Telehealth in Canada: Breaking down distances to bring care closer to patients * How does Telehomecare support Chronic Disease Management? * Sharing and Reusing Health Training Content: An Introduction to ORB and Oppia Mobile * The Mobile Alliance for Maternal Action: Scale, Sustainability and Impact in South Africa, Bangladesh and India * Telehealth Services – Quality Planning Guidelines		
2016	IT Governance: a simple solution to the complex problem of						* mHealth for the Elderly * OpenMRS Online Training (Introductory Session)		* Special AeHIN Hour - Monthly Country eHealth Updates (PHILIPPINES) * Special AeHIN

	building national scale health information systems						* OpenMRS Implementation 101		Hour - Monthly Country eHealth Updates (MALAYSIA) * Special AeHIN Hour - Monthly Country eHealth Updates (SRI LANKA)

Appendix B

Country local AeHIN Hour topics categorised according to components of the WHO-ITU Toolkit.

Country	Leadership & Governance	Strategy & Investment	Legislation Policy Compliance	Workforce	Infra-structure	National Standards & Interoperability	Service and Applications	Others	Country Update
Bangladesh							DHIS2 Individual Tracking system in Community-based clinic for Community Health Workers (Bangladesh)		
Cambodia	A free talk forum on ICTen for Cambodia						* Social Media for Health Education * Hospital Database Structure Meeting (focus on GNU) * Telemedicine in a national hospital * Health Social Protection Information System Version 4 (HSPIS 4)		CRVS in Cambodia
Sri Lanka	* Enterprise Architecture for Health	* Strategic Planning for e-Readiness: Experience of the Department of Health Services – North-Western Province	* Policy Issues in Implementing eHealth solutions in Sri Lankan Hospitals				* Automated Estimation and Ordering Process for a Pharmaceutical Logistics Application * How to build a social media and web presence for a professional medical association * Electronic Indoor Morbidity and Mortality Report - Simple but effective separation diagnosis reporting		

							solution for a developing nation * Impact of Electronic Health Record in Sri Lanka: Case Study of Government Hospitals * GIS & Mobile data collecting in Epidemiology and Public Health		
Thailand						* Direction and Development of clinical laboratory standard, LOINC, for Thailand's Comptroller General Department's Reimbursement List * Development of clinical laboratory standard, LOINC, for Reimbursement List in Civil Servant Medical Benefit Scheme (CSMBS)		* Thai Informatics Year in Review * Introduction of pharmaceutical product procurement: the first meeting	
Philippines	* IT Governance: a simple solution to the complex problem of building national scale health information systems	* Introduction to Medical Coding: Another dimension of patient care aims to raise awareness about the implications of medical coding on providing quality healthcare					* Integrated TB Information System: A Tool for TB Control * Introduction to Epidemiology and Available Online Tools: Research e-tools utilisation for Health Research	* New Medicines: From the Lab to the Market * Pharmacovigilance centered on Drug Safety * Effective Drug Regulation * Best Practices for Medication Safety * Biopharmaceuticals * Medical Ethics * Post 2015 END TB Strategy - Is it a realistic Goal?	