

Policy Brief

## Bridging the digital divide

*Highlighting the potential of digital technology to enhance  
community-led interventions for prevention and control of  
non-communicable diseases*



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university of  
 groningen



Scaling-Up NCD Interventions in South-East Asia (SUNI-SEA) was a research consortium project delivered through a collaboration of 10 consortium members. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825026, under the Global Alliance for Chronic Diseases.

### **Scaling-Up NCD Interventions in South-East Asia (SUNI-SEA):**

The increasing prevalence of non-communicable diseases (NCDs) and their high impact on mortality, morbidity and public health, particularly in low- and middle-income countries, prompted the launch of a research project, "[Scaling-Up NCD Interventions in South-East Asia \(SUNI-SEA\)](#)", implemented in Indonesia, Myanmar and Vietnam. This four and a half year initiative began in 2019 and is a collaboration between 10 consortium members, namely University Medical Center Groningen (Netherlands), Faculty of Economics and Business, University of Groningen (Netherlands), University of Passau (Germany), Trnava University (Slovak Republic), HelpAge International, Age International, Sebelas Maret University (Indonesia), Thai Nguyen University of Medicine and Pharmacy (Vietnam), Health Strategy and Policy Institute (Vietnam) and Vietnam Association of the Elderly.

The SUNI-SEA project aims to identify the best and most affordable ways to expand programmes that prevent and control diabetes and hypertension in Southeast Asia. The project investigates which interventions work effectively and are worth the investment, to inform policy in the project countries and also in other low- and middle-income countries.

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## Introduction

In this brief you will find:

- an overview of the situation for prevention and control of non-communicable diseases (NCDs);
- key lessons learnt from the global expansion of digital technology for health;
- an overview of the SUNI-SEA project (Scaling Up Non-Communicable Disease Interventions in South-East Asia);
- a summary of the SUNI-SEA experiences with digital technology in Vietnam, Indonesia and Myanmar; and
- conclusions and recommendations.

### **The urgent need to accelerate progress in prevention and control of NCDs.**

Non-communicable diseases (NCDs) are the world's greatest killers and the biggest contributors to disabilities; 74% of all global deaths are attributed to NCDs, mainly cardiovascular disease, cancer, chronic respiratory diseases and diabetes; 80% of deaths occur in low- and middle-income countries (LMICs). In addition, by 2050 approximately 22% of the world's population will be over 60 years old and 80% of the world's older people will be living in LMICs. Because susceptibility to NCDs increases with age this means that LMICs will continue to experience the greatest burden of NCDs. This has serious implications for their populations' health and wellbeing as well as economic development. Despite this situation, progress for tackling NCDs has stalled.<sup>1</sup>

The positive news is that an estimated 80% of NCDs are preventable because they are driven by unhealthy lifestyle practices, such as tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. To achieve progress on NCDs countries must urgently accelerate the operationalisation of their political commitments and the legislative and regulatory measures necessary to achieve the World Health Organization (WHO) NCD Best Buys.<sup>2</sup> Another critical action is the need to increase investments to strengthen primary health care (PHC) and integrate NCDs into the basic package of services. Primary health care includes increasing the meaningful participation of communities and people living with NCDs alongside multi-sector stakeholders, to define their health needs, identify solutions, prioritise actions, and foster accountability of duty bearers. Critically, equity and inclusion need to be addressed with a strong effort made to reach and engage the most vulnerable and disadvantaged populations, who disproportionately experience poor health and face multiple barriers to access essential information and services. Reducing inequity is a necessary condition for achievement of the NCD programme outcomes.

An increased investment in PHC is cost effective and essential for achieving improvements in population health and wellbeing,<sup>3</sup> and pivotal to the achievement of universal health coverage (UHC) targets and the sustainable development goals (SDGs) of the 2030 Agenda for Sustainable

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<sup>1</sup> World Health Organization, *WHO independent high-level commission on noncommunicable diseases. Final report: It's time to walk the talk*, Geneva, 2019, <https://apps.who.int/iris/handle/10665/330023>

<sup>2</sup> WHO, *Tackling NCDs, Best buys*, Geneva, 2017, <https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf?ua=1>

<sup>3</sup> WHO, *Building the economic case for primary health care: A scoping review*, Geneva, 2018, <https://www.who.int/docs/default-source/primary-health-care-conference/phc--economic-case.pdf>

Development.<sup>4</sup> There is no time for complacency; accelerated action for NCD prevention and control is needed now.

This paper will share learning from the Scaling-up NCD Interventions in South-East Asia (SUNI-SEA) project for the introduction of digital technology as part of community-led interventions for the prevention and control of NCDs. It highlights the value of digital technology in increasing the meaningful engagement and essential contributions of communities and people living with NCDs.

## Lessons learned from the global expansion of digital technology within health and care programmes

Over the last few decades, digital technology has rapidly expanded in the health sector, with an exponential increase during the COVID-19 pandemic. The pandemic has been described as the ‘great accelerator’ for the global uptake of digital technology, resulting in a surge in the use of telemedicine and digital health tools for addressing a variety of medical issues beyond COVID-19.

As early as 2005, the World Health Assembly requested members to ‘consider drawing up a long-term strategic plan for developing and implementing eHealth services, to develop the infrastructure for information and communication technologies for health, to promote equitable, affordable and universal access to their benefits.’ Since that time, up to 120 countries, including LMICs, have developed plans for implementing eHealth services. In 2020 a global strategy on digital health was endorsed by the World Health Assembly.

Learning from the implementation of digital technology has demonstrated that it is an unstoppable force with rapidly evolving technology and a vast array of innovative applications. It is also acknowledged that several important barriers need to be addressed, particularly for achieving sustainable digital technology for health at scale in LMICs, and achieving inclusive and equitable access to the benefits of digital technology for all.

### What is digital health?

The World Health Organization (WHO) defines digital health as the use of digital and mobile technologies to support health system needs.

### What is mHealth?

mHealth is defined as the medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices and other wireless devices.

### WHO digital strategy 2020–2023

Digital health should be an integral part of health priorities and benefit people in a way that is ethical, safe, secure, reliable, equitable and sustainable. It should be developed with principles of transparency, accessibility, scalability, replicability, interoperability, privacy, security and confidentiality.

<sup>4</sup> Kishore, S P, ‘Global NCD policy implementation stalls in the modern era’, *The Lancet Global Health* 11: 4, 2023, [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(23\)00124-9/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(23)00124-9/fulltext)

## Learning from the application of digital technology for health

Although there is limited evidence of the impact of mobile health (mHealth) for strengthening health care provision, particularly in LMICs, mHealth has been widely used globally and is reported to have good potential to support the delivery of health care services, improve the quality of services, increase access to services, expand the reach of health information and strengthen the quality and utilisation of data to inform health planning. Digital technology can also deliver self-care support to patients to promote healthy lifestyle practices, improve health literacy, support adherence to medications, promote self-efficacy and increase a patient's participation in managing their health condition.<sup>5</sup>

There is good evidence for the use of digital technology with health care providers relating to clinical efficacy, user friendliness and cost effectiveness, but a paucity of evidence for community-level digital health interventions. This gap highlights the need to increase the focus on learning about what communities, volunteers, patients, and caregivers want from digital technology, and what would be feasible, acceptable, and useable in their specific contexts.

The 2019 Global Digital Health Index reports that in most LMICs health workers and community volunteers need increased and effective digital health training to meet current and future demands. There is also recognition about the risk of increasing inequity in access to the benefits of digital health if inclusion and equity are not carefully considered during the design phase and throughout the process of implementing and evaluating the digital application.

Linked to inclusion and equity, there is a need for essential infrastructure so that communities and individuals can experience the full benefits of digital health. To benefit from the current and future advances in digital health, the most vulnerable people in LMICs need to have access to reliable electricity, internet access and digital literacy skills and access to affordable and feasible digital solutions that meet their needs. Tools and information need to be available in languages spoken and read by people and gaps in basic digital literacy also need to be addressed.

Policy makers and governments have an important role in determining whether an existing infrastructure can adequately serve the needs of populations, support the digital transformation of health care, and have the resilience to withstand future health care crises. Future seamless integration of various data systems is essential. WHO's *MAPS toolkit: mHealth assessment and planning for scale* provides an excellent guide to help inform policy makers and other decision makers about how to manage the process of digital transformation and scale up digital technology for health in their context.<sup>6</sup>

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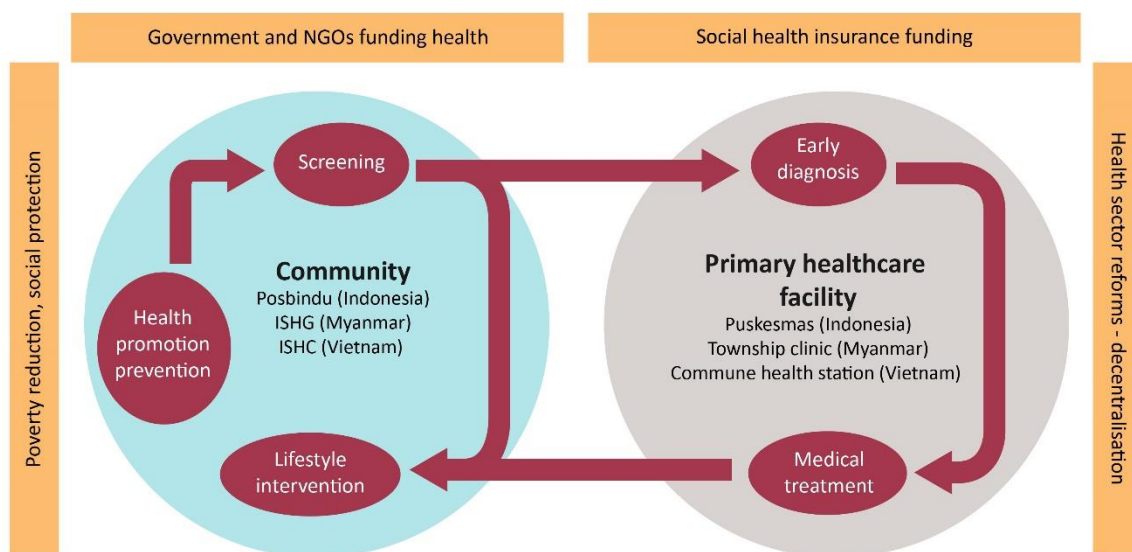
<sup>5</sup> WHO, *Shifting paradigm in frontline NCD services in the South-East Asia region*, Geneva, 2022, <https://apps.who.int/iris/handle/10665/353968>

<sup>6</sup> WHO, *The MAPS toolkit. mHealth assessment and planning for scale*, Geneva, 2015, [https://apps.who.int/iris/bitstream/handle/10665/185238/9789241509510\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/185238/9789241509510_eng.pdf?sequence=1&isAllowed=y)

## The SUNI-SEA Project: January 2019–June 2023

The overall aim of the SUNI-SEA project was to strengthen the prevention and control of hypertension and diabetes in Indonesia, Myanmar and Vietnam. This was done by examining evidence from implementation research conducted in these countries. The project evaluated community-based and primary health care interventions. As the health systems and community organisations in the three countries are different, slightly different approaches were applied.

### Project interventions at the primary health care facility and the community and the synergies between them



ISHC = Intergenerational Self-Help Clubs, ISHG = Inclusive Self-Help Groups, NGO = nongovernmental organisation, *posbindu* = integrated development post, *puskesmas* = public health centre.

Due to project delays created by the COVID-19 pandemic, the implementation of community interventions in Indonesia and Vietnam began in mid 2021. In Myanmar implementation began in mid 2022 due to the political situation.

## Digital technology as part of community interventions for prevention and control of non-communicable diseases

Open-source software was used to develop the SUNI-SEA project's NCD screening application (app) for android phones and the project database. The country teams in Myanmar and Vietnam collaborated with digital software specialists from the Society for Health Information System Programme (HISP) and used the 'District Health Information Community Tracker' software (DHIS 2) to develop bespoke screening apps. In Indonesia, the team designed the '*Posbindu Smart*' NCD screening app for *posbindu* (integrated development post) community screening events. In Myanmar, a self-care app was designed for the general adult population in the project communities

to self-assess their risk factors for NCDs, including mental health. In Vietnam, the app was designed for volunteers from community-based organisations (CBOs) to use during NCD screening events.



In all three countries, the non-invasive and validated Finnish Diabetes Risk Score (FINDRISC), for type 2 diabetes risk prediction, was included in the screening app.<sup>7</sup> The screening apps guide the user through a step-by-step screening process, provide prompts and alerts, automatically calculating the BMI and FINDRISC score, and alerting users if risk factors are identified. The app provides guidance on follow-up actions according to the screening results. In addition, all the apps provide tailored health messages according to an individual's health status. All three digital apps included a section on informed consent, an explanation of the purpose of the app and an explanation of data security measures employed to protect user privacy. Various job aids were developed to support users, including video demonstrations, standard operating procedure manuals and information leaflets about the app.

### **Indonesia 'Posbindu Smart' android phone NCD screening application**

'Posbindu Smart' aims to make it easier for *posbindu* (integrated development post) participants and volunteers to identify and control NCDs. A secondary aim is that the app can later be integrated within the national NCD prevention app, 'ASIK'. *Posbindu* is a community-based intervention launched by the national government to support the prevention and control of NCDs.

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<sup>7</sup> Finnish Diabetes Risk Score (FINDRISC) <https://www.mdcalc.com/calc/4000/findrisc-finnish-diabetes-risk-score#next-steps>

The activities are conducted by community health volunteers and supervised by PHC officers. The aim of the *posbindu* is to meaningfully engage communities in screening for detection of NCD risk factors. The intervention targets the general population aged 15 years and over in Batang district, Central Java and Kediri district, East Java. The volunteers' main activities include screening for risk factors for hypertension and diabetes, referral of people with potential risk factors to the *puskesmas* (public health centre) and provision of health education.

#### Indonesia overview: Staff training and screening results at intervention sites

Health education and training	Kediri	Batang
Number of <i>posbindu</i> (integrated development post) staff trained for non-communicable diseases (NCDs), and use of digital screening application	58	34
<i>Puskesmas</i> (public health centre) staff trained for <i>posbindu</i> NCD role	5	5
Number of people attending <i>posbindu</i> for screening and health education sessions from January 2022 to March 2023 (Total: 9844 participants)	3,484	6,360

Health screening results	Persons	Percentage
Percentage of people screened who were advised to visit the <i>puskesmas</i> from August 2022 to March 2023		55.63%
Total number of people whose BMI was measured	836	
BMI (overweight) > 25	140	16.7%
BMI (obese) > 27	296	35.4%
Total number of people measured for blood pressure	4,854	
Raised blood pressure 120-139 / 80-89	1,956	40.3%
High blood pressure 140/90	1,751	36.1%
Total number of people assessed with FINDRISC score for diabetes risk	817	
High risk > 15-20	28	3.4%
Very high risk > 20	3	0.3%

Supervision visits from *puskesmas* staff and SUNI-SEA project team members included the opportunity for reviewing the screening results, discussing issues and reflecting on learning.





*“The application is beneficial. It allows us to know when each of our patients require NCD guidance for early detection and prevention. Because of the colours: red, yellow and green, we can later determine whether a person needs to come here or not.”*

**Ana Kamilla, 24, volunteer, Kediri, Indonesia**

### Myanmar self-care NCD screening application

The aim of the Myanmar self-care app is to empower individuals with the knowledge and tools they require to take action for the prevention and early diagnosis of diabetes, hypertension and mental health issues. The app was introduced to volunteers from CBOs during skills building sessions with provision of handout to guide the process and short demonstration videos. The project sites were 56 villages in Shan State, eastern Myanmar, and 18 Inclusive Self-Help Groups (ISHGs) based in Yangon, Mandalay and Ayeyarwady regions. Their role was to disseminate information about the app and support community members to upload and use the app as needed. Prior to the self- assessment screening, the volunteers measured people’s blood pressure, weight, height, and waist circumference. The measurements were required to be entered during the screening to contribute to the analysis of overall NCD risk. See link for more information about self-help groups in Myanmar and Vietnam: <https://www.sun-sea.org/en/self-help-groups/>

Although the 8-month implementation period was short, it provided a good testing and learning opportunity to inform future adaptation and scaling up.

#### Myanmar overview: Uptake of self-care application (July-December 2023)

Total number of people using the self-care screening app	1,830
Percentage of people using the self-care screening app who were identified with risk factors for NCDs and were advised to seek advice from a health care provider	44%
Percentage of people (of total number of people enrolled) who accessed basic health education on the application	86%
Percentage of people using the self-care app who conducted screening for anxiety and depression	75%



*“This application is helpful because we can't see the doctor every day. It's like having an advisor right next to me. I can check my health. I follow the suggestions because it feels like my advisor is speaking to me, telling me what to do and what not to do.”*

**Daw Myint Myint, 73, Pathein Gyi Township, Myanmar**

Three monthly monitoring and supportive supervision visits by the project team included reflection on learning and discussions on the screening data results. During this time, the team also conducted a series of focus group discussions and in-depth interviews with community members and volunteers to learn from users' experiences of the self-care application. In between monitoring visits, the CBOs and project team shared updates, learning and discussed questions via social media platforms.

### **Vietnam community volunteers' mobile phone NCD screening application**

The NCD screening application in Vietnam aimed to strengthen knowledge and skills of Intergenerational Self-Help Club volunteers (ISHCs), club management boards and local Association of the Elderly project staff for NCD prevention and control and stakeholder collaboration.

#### **Vietnam overview: Screening results**

Number of members participating in screening events	3,485 or 92.5%
Number newly identified with raised blood pressure	997
Number identified with FINDRISC score > 15 (at high risk for diabetes)	270
Number identified as obese	951
Percentage of club members participating in health education	85%
Percentage of club members joining physical exercise events	99%
Number of clubs supported by primary health care staff for screening events/ health activities	51 or 86.4%

Project communities are in Hai Phong and Ninh Binh provinces in the north-eastern area of Vietnam. The total coverage area is 59 villages, where 59 ISHCs have a total of 3,250 members. For more information, see link Self-Help Groups in Myanmar and Vietnam: <https://www.suni-sea.org/en/self-help-groups/>

Five volunteers from each club received training (with a total of 295 volunteers trained) about NCD prevention and control, and skills for using the screening app, conducting anthropometric measurements and monitoring and evaluation of activities. Guidance materials and basic screening equipment were also provided. The volunteers conducted twice per year NCD screening events. Ongoing quarterly monitoring was conducted by Association of the Elderly members and project staff. In addition, social media apps were used for regular sharing of information, discussions and feedback. Data from screening events was reviewed during the monitoring visits.



*“We were slow when we first used this application. There were many steps when using, but after receiving the tutorial, we found that it was not that difficult. I hope that in the future we still can continue using this application and that the application reduces the steps and translates all parts to Vietnamese for easy access.”*

**Nguyen Thanh Dat, 55, community member, Ninh Binh**

## Key lessons learned across the three project countries

Although the contexts, interventions and user groups varied between Indonesia, Myanmar and Vietnam, it was found that all the countries experienced similar lessons regarding the use of the NCD digital screening application.

### Advantages

After training and follow up support, most community volunteers were able to correctly use the screening app and found it useful for their work. It was well accepted and appreciated by the community. Some volunteers commented that the app provided them with a practical tool that enhanced their work and earned them increased respect from community members.

Intergenerational approaches with a mix of younger people and older adults working together for using the screening app worked well, particularly as younger people were usually more skilled for using digital technology and enjoyed teaching others. With the self-care app in Myanmar, younger people also helped translate the screening questions into Myanmar’s ethnic minority languages.

Consensus emerged from all countries that gaining optimal benefits from the NCD screening app will require a longer period of implementation, with provision of regular follow-up support to volunteers. The project intervention period was enough time to get the app up and running, build the skills of volunteers and community members and correct the glitches. With a longer period of implementation and provision of regular follow-up support to the volunteers, the screening app has

the potential to strengthen the quality and efficiency of the screening activities, reduce workload and provide valuable information to communities, PHC facilities and decision makers. The app has functions that calculate BMI and FINDRISC score, analyses risk factors, and provides follow-up actions and tailored messages; it provides alerts if there are inconsistencies or missing data, it streamlines data storage and facilitates tracking individuals' health status over time. In the future, as the volunteers become more proficient in the use of the screening app it will improve the timeliness of sharing screening results and promote an increased use of data by community groups.

The introduction of the screening app has strengthened the volunteers' and community members health literacy and digital literacy skills. It opens up increased future opportunities for them to access a wider range of health information and resources and to increase their online networks and sharing of learning across communities. Older people of all ages and backgrounds in the project have demonstrated an interest to leverage the benefits of digital technology. With the right infrastructure, adequate support to further develop their digital skills and increased adaptation of the application to fit with their needs, older people in rural areas of LMICs will become active and engaged users of digital technology.

Country teams also reported that the use of the digital NCD screening app will help CBOs to gain increased recognition of their role in preventing and controlling NCDs and strengthen their linkages and collaboration with PHC facilities. This project demonstrated that they can make a tangible contribution towards the prevention and control of NCDs.

The digital NCD screening app provides the community leadership with locally generated evidence of the status of NCDs in their communities. It is a powerful advocacy tool for them to share with local authorities and decision makers to gain increased support and actions for prevention and control of NCDs.

*“Using a tablet and the DHIS2 application to report data helps me not to have to report by paper forms. I just enter data into the application and press sync function, then data is sent very quickly, saving money and time.”*

**Female community health volunteer, Hai Phong, Vietnam**

## Challenges

There were some infrastructure and internet connection problems as well as incompatibility issues of the application with various mobile phone models across all countries, especially in the more remote and underserved communities. Although the DHIS 2 mobile app was able to be used offline, an internet connection was required to download the app to the mobile phone and for uploading the screening data to the database after completion. It was also found that some models of mobile phones were incompatible with the digital software app. This challenge illustrated the importance for governments to increase their investment in digital technology infrastructure as a necessity and a right, not as a luxury expenditure, and particularly to prioritise harder-to-reach communities and to decrease inequality and exclusion. In addition, there is a need for increased innovation focused on

meeting the needs of people in LMICs through the design of new digital apps and mobile phones that are feasible, affordable, acceptable and inclusive of all people.

Low digital literacy skills in some communities affected the volunteers' confidence in using the app. Some cases in Indonesia and Vietnam saw volunteers reverting to using paper forms first, and later entering the data onto the digital app. This considerably increased their workload, reduced the quality of data and delayed the timely identification of people with risk factors. Some volunteers were also concerned about their increased workload and delays in the screening process if they used the digital data app, which might create long queues and dissatisfaction among community members. This situation illustrates the need to involve community members, volunteers and other key stakeholders in the design of the app from the very early stages of development to gain their trust and ownership, and to ensure that the app is more inclusive and user friendly. Importantly, longer-term support is required to build the confidence and skills of people who are new to digital technology. Younger people in the communities have demonstrated their willingness and capacity to be effective mentors and supporters for introducing digital technology.

Strengthening the communication and collaboration between the PHC facility staff and the community particularly for a well-functioning, two-way referral system for people with NCD risk factors requires focused effort, leadership and commitment from health managers and community leaders, with ongoing monitoring of the system and prompt actions to address challenges.



*"I had a chance to attend the training on the NCD and self-care application for health volunteers in Yangon. I gained a lot of new knowledge and information. During the course, the trainers instructed on how to use the NCD self-care application. It was not very easy for me at first. Later, I became familiar with it and found it convenient. I shared the application in our community and translated Burmese, which is the language used in the app, to Kayin language. I have used the application myself. I also persuade others to use it. I helped over 10 people, mostly older people, to install the application and shared with them how to use it."*

**Saw O Pwal, 28, Ayeyarwaddy, Myanmar**

The project found that establishing regular connections between community groups and health facility staff is essential to build trust and confidence. In Indonesia and Vietnam, the PHC staff were invited to participate and contribute to volunteer training events and stakeholder meetings to share learning and plan activities. In Vietnam, more than three-quarters of the PHC facilities in the project sites provided support for community-level activities during the project. Another lesson learned was the importance of clear understanding and agreement about the role and responsibilities of PHC and communities for NCD prevention and control activities. In Vietnam, formal agreements were developed during the project between the local health sector management, the Vietnam Association

of the Elderly and communities for continued collaboration on NCDs. The establishment of formal systems and structures for sharing and utilisation of community-generated NCD data is also a long-term advocacy priority.

## Ways forward

All three country teams will continue to use the learning and evidence from the SUNI-SEA project to strengthen their community work for NCD prevention and control and scale up the interventions to new areas. Continued advocacy with relevant cross-sector stakeholders including the private sector is an important priority for achieving increased support and resources to expand the interventions, and use of inclusive digital technology for health to reach more people, particularly in the most underserved communities.

In Indonesia, advocacy for the integration of the 'Posbindu Smart' app into the national NCD 'ASIK' app will continue, as will work to adapt the 'Posbindu Smart' for offline use to prevent the exclusion of volunteers who lack a regular internet connection. Myanmar plans to scale up their self-care app through a network of CBOs and local nongovernmental organisations. Their long-term vision is to re-establish collaboration between nongovernmental organisations and the government when the situation becomes more conducive to this. In Vietnam, the Association of the Elderly is mandated by the government to scale up the ISHC model across the country in incremental steps. The role of volunteers for prevention and control of NCDs has been integrated into the national ISHC replication guidelines to support the continuity of the NCD activities in newly established clubs. Continued advocacy for increased investment in digital technology for CBOs and increased acknowledgement and support from the government for community-based interventions is another priority.



*“Regarding the application, there is indeed an intended link and collaboration between the government data applications (government-initiated platforms) and the SUNI-SEA application. The aim is that later the SUNI-SEA application can merge into one national system and our application will positively impact the national data management platform. Therefore, it will enable earlier screening at the community level to better find new cases and make referrals to health centres.”*

**Imam Maruf, Kediri Public Health Centre, Indonesia**

## Conclusions

- Digital technology is valued by communities and is a feasible tool for CBOs to use to enhance the quality of community health interventions and strengthen their role, participation and contribution to NCD prevention and control programmes.
- Ensuring equity and inclusion of all people needs to be a key consideration when introducing digital technology for health. There is a strong risk of increasing inequality and exclusion in access to essential information and services if there is not an intentional and continued focus on this issue.
- Development of effective and sustainable digital technology requires long-term commitment and resources from decision makers and meaningful participation of key stakeholders from the beginning, including PHC staff, community volunteers, local leaders and national cross-sector government departments. Digital technology cannot be a short-term project. Establishing, institutionalising and leveraging the benefits of digital technology for health for all is a long-term goal and a necessary vision for the future.
- It is important to take a systems-wide approach from the beginning of the design process for digital technology. Data linkages and data utilisation should be considered at different levels of the system, with strong efforts to avoid duplication of work and leverage available technology, resources and best practices from across the national digital technology community.

## Considerations for decision makers

- Prioritise increased investment in digital technology to leverage its power more people and communities who are most at risk of being left behind being reached. Integrate equity and inclusion into the design of digital health programmes from the beginning, keeping in mind that inequity and exclusion can be exacerbated by systems-generated barriers. Identify solutions to overcome these barriers, and audit and share equity metrics.
- Stimulate and support digital literacy for older people. It is needed to keep them meaningfully involved in society and to combat social isolation and loneliness.
- Provide increased support and resources to CBOs, strengthening their linkages to government systems and people living with NCDs to maximise participation and contributions towards improved health for all.
- Develop and strengthen cross-sectoral partnerships and collaboration with a wide range of stakeholders, including the private sector, to benefit the design, implementation and sustainability of digital health tools. Partnering with governments, health ministries, public health providers and research institutes will increase reach as well as generate additional support for innovation and research to benefit digital health and ensure its sustainability.
- Work towards integration of digital technology into cross-sector health in all policies and plans. This has the potential to generate additional funds for increasing access to digital technology, digital literacy training, broadband internet and other essential infrastructure for expansion of digital technology.