Scaling-Up NCD Interventions
in South-East Asia

SUNI-SEA

Experiences with Scaling UP Prevention and Screening of Non-Communicable Diseases In Southeast Asia

SUNI-SEA Work Package 1

Final Report

Editor Jaap Koot, UMCG

Scaling-Up NCD Interventions in South-East Asia (SUNI-SEA) is a research consortium project delivered through a collaboration of ten 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.

This report Experiences with scaling up NCD interventions is part of a series of three reports. The other two reports are Cost-effectiveness (WP2) and Guidelines and training materials (WP3). Together, these reports provide a comprehensive overview of the SUNI-SEA research project.
Also read our policy briefs Achieving Universal Health Coverage for NCDs, Scaling up community-based NCD interventions Bridging the digital divide.
Find all information about the SUNI-SEA research project on www.suni-sea.org

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 an implementation research project "Scaling-Up NCD Interventions in South-East Asia (SUNI-SEA)" which was implemented in Indonesia, Myanmar and Vietnam. This four year initiative began in 2019 and was a collaboration between ten 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 (VAE).

The SUNI-SEA project aimed 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, also in other low- and middle-income countries.

Disclaimers:

The contents of this report are the sole responsibility of the SUNI-SEA consortium and do not necessarily reflect the views of the European Union or the Global Alliance for Chronic Diseases.

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List of abbreviations

ASEAN	Association of Southeast Asian Nations
CB	Community-Based
CBO	Community-Based Organisation
CHS	Commune Health Station
FINDRISC tool	Finnish Diabetes Risk Score tool
GACD	Global Alliance for Chronic Diseases
HAI	HelpAge International
HiAP	Health in All Policies
HR	Human Resources
ICOPE	Integrated Care for Older People
ISHCs	Intergenerational Self-Help Club
ISHGs	Inclusive Self-Help Groups
KAP	Knowledge-Attitude-Practice
M&E	Monitoring & Evaluation
MOH	Ministry of Health
NCD	Non-communicable disease
PHC	Primary Health Care
SDG	Sustainable development Goals
SOP	Standard Operating Procedure
SUNI-SEA	Scaling-Up Non-communicable diseases Interventions in Southeast Asia
VAE	Vietnamese Association of the Elderly
WHO	World Health Organization

1. Executive Summary

Introduction

The ambition of the Scaling-Up Non-communicable diseases Interventions in Southeast Asia (SUNI-SEA) project was to provide guidance concerning the effectiveness and cost-effectiveness of prevention and control of noncommunicable diseases (NCDs), especially hypertension and diabetes. SUNI-SEA aims to provide an evidence-based model for an integrated community-based and primary healthcare (PHC) facility response to NCDs, which can be scaled up in national NCD control programmes.

The expected impact of the project is:

- ***Impact on prevention*** Community groups encourage healthy behaviours and provide NCD screening.
- ***Impact on early detection*** Community groups can, through screening, detect early cases of hypertension or diabetes and advise these persons to visit PHC facilities for further diagnosis and treatment.
- ***Impact on early treatment*** When people with risk factors receive adequate treatment in PHC facilities this leads to an increase of people treated and adhering to therapy.
- ***Health systems strengthening*** The linkage and synergy between community-based and health facility-based interventions encourages health seeking behaviours, improves adherence to treatment and implementation of lifestyle interventions.

Preparation for the implementation

In the retrospective phase (year 1) of the SUNI-SEA project, a review and analysis of the state of implementation of NCD prevention and control programmes in the three countries (Indonesia, Vietnam, Myanmar), was performed. Less than half of the people with NCDs were aware of their condition, and less than 25% of all respondents had ever been screened for NCDs. Therefore, the need for both horizontal and vertical scaling-up was relevant for the SUNI-SEA project. The quality of services in PHC facilities was not good enough. Retrospective studies in SUNI-SEA showed that the impact of screening was limited due to poor follow up within the health system. Community initiatives were not always aligned with PHC services.

Scaling up strategy

The scaling up strategy of SUNI-SEA during the implementation phase (prospective phase) focused on three dimensions:

- **Increase the package of services** in the existing community programmes or in the health facilities in the research area, for example by making NCD screening and counselling available for all adults.
- **Increase the quality of service** in communities or health facilities, by building capacities of volunteers and health care professionals, to achieve a more sustainable impact.
- **Increase the coverage of services,** for example by training staff in new health facilities or initiating more community groups, reaching more people in more geographical areas.

The country teams in Indonesia, Myanmar and Vietnam developed specific action plans to address the three dimensions.

Interventions

The interventions implemented in the prospective phase of the SUNI-SEA project aimed at increasing the package of services (for example more screening, more health education), increasing the quality of services (for example capacity building, guidelines, monitoring), increasing coverage (self-monitoring tools, Posbindu at the workplace, stakeholder mobilisation). The interventions aimed to improve the NCD control programme, empower the communities and strengthen the healthcare organisations.

To improve the NCD control programme, we developed a screening tool for all three countries, that cadres (community health workers in Indonesia) and community volunteers (in Vietnam and Myanmar) could apply. We also developed health education materials, for sensitising the population and for informing persons with high risk for NCDs. We adapted clinical guidelines, to make them easier to understand for primary healthcare staff. For better recording we developed an electronic medical record system in Vietnam and Indonesia. In Myanmar, this tool served for self-monitoring by individuals in communities, linked with electronic health information modules.
For empowering the communities, we worked on community sensitisation and awareness raising of NCDs. We organised community-based screening within Posbindu in Indonesia, and within Intergenerational Self-Help Clubs in Vietnam, and Inclusive Self-Help Groups in Myanmar. In these community groups people with high risk for diabetes or hypertension were identified and advised to go to a PHC facility. In the communities also health promotion activities took place, like physical activity, cooking or socialising. In Myanmar, online self-help for mental health issues was provided.
In healthcare organisations, we concentrated on capacity building, both of cadres and volunteers as well as healthcare professionals. We also developed strategies for mobilisation of resources for NCD activities in communities.
All together these interventions led to strengthening of the whole system, and not just parts or isolated actions. In general, the interventions were successful, although due to the COVID-19 pandemic time was too short to achieve an impact on the health of the population.

Lessons learned concerning scaling up
Vietnam and Indonesia have devolved governance systems when it comes to social services. This implies that local government authorities are responsible for planning, budgeting, and implementation of social services in their communities. Scaling-up of community-based NCD prevention and control is therefore a complex process.
Community-based organisations (CBOs) play a complementary and essential role in NCD prevention and control, including community mobilisation, health promotion, healthy lifestyle approaches and monitoring of health and cross sector services. They are an extended arm of grassroots health facilities

to reach the hard-to-reach populations. Local, district and provincial authorities have an essential role in acknowledging and leveraging the effective role of CBOs.
Scaling-up goes bottom-up, often spreading slowly from place to place, based on copying good practices and observing tangible results. Lobby and advocacy target local level stakeholders and build commitment for sustainable investment in health promotion and prevention. On the other hand, quality assurance comes top down, with standards, capacity building, supervision and mentoring.

Financial resources determine to a large extent the package and the quality of prevention and control of NCDs at community level. The local funding mechanisms through community funds, local government budgets, etc. should continue contributing as done presently. In addition, the universal health coverage policy of countries is very important in this: the package of services needs to be directed towards the country's shifting demographics and epidemiological changes, i.e., the expected increase in NCDs. Health insurance should include NCD services as well as coverage of medicines in the service package of primary healthcare facilities. Preventive activities could be covered under the insurance packages. Accelerating progress and scale-up of NCD activities in PHC facilities needs adequate investment by the Ministry of Health. Without the proper investment, national targets for NCD prevention and control cannot be achieved. This investment should ensure primary health care capacity and resources (in human resources, for health, Monitoring and Evaluation, finances, medicines, and equipment).

Call for action
SUNI-SEA's synergy approach has proved that community empowerment and close collaboration between PHC facilities and communities can result in increased knowledge and awareness about NCDs, increased early detection and actions for addressing risk factors, and improved early treatment of NCDs at primary healthcare level. It is high time to implement two paradigm shifts globally:

1. Give NCDs the highest priority in healthcare, as these chronic diseases are responsible for the greatest number of deaths, the highest morbidity, and are affecting the poorest countries most. Allocate more funds to NCD prevention and control.

2. Emphasise prevention and early detection of NCDs, as this reduces human suffering, prevents complications of NCDs, and saves costs. Mobilise the human capital in communities for improvement of health and wellbeing.

1 Introduction

1.1 Addressing non-communicable disease

Noncommunicable diseases (NCDs), including diabetes, cancer, cardiovascular diseases, chronic respiratory diseases, and mental illness, account for 74% of all deaths worldwide due to their chronic character and contribution to ill health and disability worldwide. NCDs are both a cause and an effect of poverty, with people living in low- and middle-income countries disproportionately affected. Addressing NCDs is crucial for attaining the health-related Sustainable Development Goals and Universal Health Coverage.

Many countries, including Indonesia, Myanmar and Vietnam, have put in place strategies, policies and plans to address the growing burden of NCDs. However, implementation is extremely challenging. In these countries, there is insufficient funding and expertise to adequately address NCDs. Awareness about the symptoms of NCDs is low and not many people know whether they run the risk of getting an NCD. Few people with NCDs are diagnosed, and few with a diagnosis get the appropriate treatment. This requires innovative approaches that can have the greatest impact on prevention, early detection and early treatment of chronic disease. To reach more people, it is essential to reach out to communities. Strategies for addressing NCDs include community-based health promotion, screening, periodic health check-ups, treatment in primary healthcare facilities and medicines in the basic package of health services.

In the context of the scaling-up programme of NCD prevention and control by the Global Alliance of Chronic Diseases (GACD) the research project Scaling-Up NCD Interventions in Southeast Asia (SUNI-SEA) was implemented from January 2019 until June 2023 in Indonesia, Myanmar and Vietnam. The project was funded by the European Union under the Horizon 2020 research and innovation programme.

1.2 The ambition of SUNI-SEA project

Our ambition of the SUNI-SEA project was to provide guidance concerning the effectiveness and efficiency of prevention and control of NCDs, especially hypertension and diabetes.

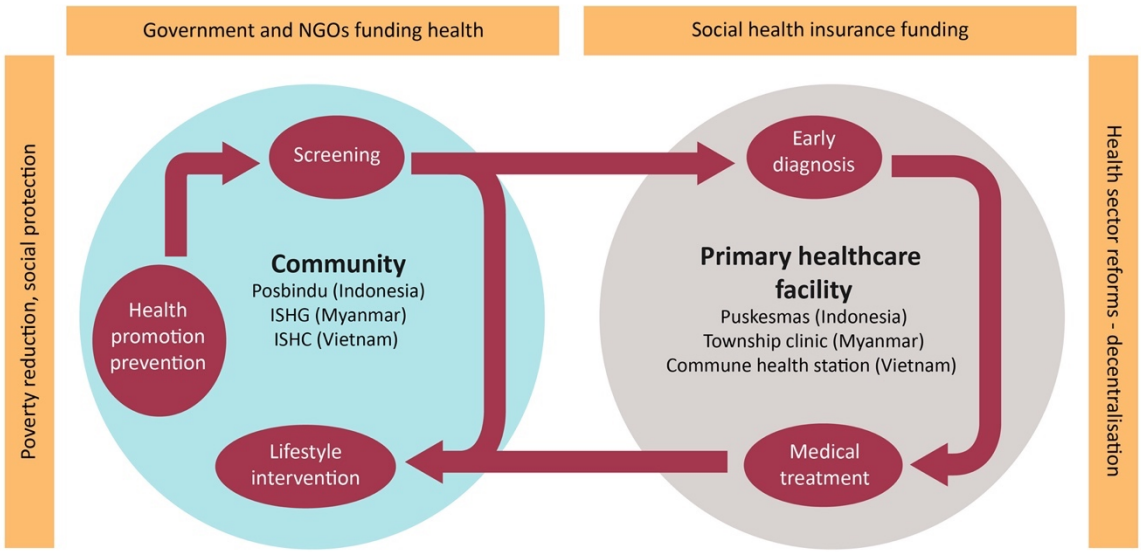

Figure 1 Synergies between community-based and PHC-based interventions

SUNI-SEA aimed to provide evidence for an integrated response to NCDs by communities and primary healthcare facilities, which can be scaled up nationally and globally. The ambitions are summarised in figure 1, SUNI-SEA's synergy model, which shows the synergies that can be achieved if the different elements of community-based and primary health care-based interventions are carried out well.

In this project, we aimed to achieve:

- ***Impact on prevention*** Community groups encourage healthy behaviours and provide NCD screening, thus reducing health risk behaviours. Linking NCD prevention to solidarity, self-reliance and social participation in community groups has a sustainable impact. There are positive effects on both men and women, and on lower socio-economic groups.
- ***Impact on early detection*** Community groups can, through screening, detect early cases of hypertension or diabetes and advise these persons to visit PHC facilities for further diagnosis and treatment. When community groups become self-reliant this early detection can become an integrated part of social life in communities.
- ***Impact on early treatment*** When people with risk factors for diabetes or hypertension are detected in their community, peer groups promote lifestyle changes, e.g., healthy diet, physical exercise. Adequate treatment starts close to their home in primary healthcare facilities and is easily followed up in the same facilities. The scaling-up process of the integrated community-based and PHC-based interventions leads to an increase of people treated and adhering to therapy.
- ***Health systems strengthening*** The linkage and synergy between community-based and health facility-based interventions encourages health seeking behaviours, improves adherence to treatments, broadens knowledge and awareness of NCDs and their risk factors and enhances uptake of insurance and accountability for primary healthcare provision.

1.3 Objectives of the SUNI-SEA project

The three main objectives of the project were:

1. Identify a set of evidence-based interventions and scaling-up strategies by analysing contextual factors, core components, and effective scaling-up strategies for both PHC and community-based (CB) interventions in work package 1.
2. Perform cost-effectiveness analysis of ongoing interventions and of entire scaling-up programmes for prevention and management of hypertension and diabetes in Vietnam, Myanmar and Indonesia in work package 2.
3. Improve and test guidelines and instruments for scaling-up prevention and management of hypertension and diabetes worldwide in work package 3.

1.4 Phasing of the project

The project was divided in four phases, with a retrospective phase consisting of 1) a situation analysis and selection of most appropriate interventions, 2) a community-based baseline survey, 3) an implementation phase in which interventions with a high-potential impact were carried out, 4) and a community-based endline survey to measure the impact, combined with a general evaluation of the project. Due to the COVID-19 pandemic in 2020 and 2021 at times limited activities were permitted, due to infectious disease control measures, or due to other priorities of health services. The delay could be partially compensated by a no-cost extension of six months in 2023.

2 Preparing for NCD interventions

2.1 Situation analysis in Indonesia, Myanmar and Vietnam in 2019

In the retrospective phase (year 1) of the SUNI-SEA project, a review and analysis of the state of implementation of NCD prevention and control programmes in the three countries, was performed. Also literature reviews were conducted. [1, 2] Unhealthy behaviour was commonly found in the countries. Tobacco use was very high among men, especially in Indonesia (74%). There were stop-smoking programmes, which did not reach the people sufficiently. Advertising and sales of tobacco were not restricted. Alcohol consumption varied widely, with high levels in Vietnam and Myanmar and low levels in Indonesia. In urban areas counselling services may have been offered to reduce alcohol intake, but there was little law enforcement, e.g., on drunk driving. Unhealthy diets were increasing, with obesity percentages ranging from 18% of the adult population in Vietnam to 28% of the adult population in Indonesia. Due to urbanisation, fast food, and sedentary lifestyles obesity was on the rise, as well as type 2 diabetes.

In 2019, in Indonesia, Myanmar, and Vietnam, policies were in place, and governments were committed to reducing NCDs. Guidelines had been developed, and NCD programmes had been designed in all three countries, but implementation was lagging.

In Indonesia, the community-based programme Posbindu aimed to screen on NCDs and counsel adult people above 18 years. The programme aimed to detect risk factors in an early stage and advise people on diagnosis and treatment in PHC facilities (Puskesmas). This national programme was only reaching 25% of the target population in 2019. In Myanmar, in 2019 the Ministry of Health (MOH) was rolling out the Primary Healthcare Essential NCDs (PEN) intervention programme. NGOs were working with the community-based programme Inclusive Self-Help Groups (ISHGs) on health and well-being, of which health promotion and screening for NCDs was part. In Vietnam, in 2019 the government was rolling out a national programme for screening and early detection of NCDs at grassroot health service level (Commune Health Stations), and screening via mass organisations was implemented. In Vietnam, non-governmental organisations (NGOs) supported the community-based programme Intergenerational Self-Help Clubs (ISHCs) on health and well-being and socio-economic development in communities. Basic screening and health education was part of the activities.

The NCD programmes in the three countries were not reaching enough people (especially men and younger persons were less often reached).[3] Less than half of the people with NCD were aware of their condition, and less than 25% of all respondents had ever been screened for NCDs. Therefore, the need for scaling-up was relevant for the SUNI-SEA project.

In all three countries, the service providers at community and primary healthcare level did not always have sufficient competencies for screening, counselling or health promotion. The guidelines provided were not always understandable for the grassroot health workers or volunteers, who may have limited health literacy competencies. [4]

The quality of services in primary healthcare facilities were not good enough. Retrospective studies in SUNI-SEA showed that the impact of screening was limited due to poor follow up within the health system. Community initiatives were not always aligned with primary healthcare services. Governments in Indonesia, Myanmar and Vietnam may be committed to reducing NCDs, but in practice, resources were not always enough, especially medicines. The health workers with capabilities for treatment of patients often did not work at the primary healthcare level. They were mostly found in district health facilities. The health information systems did not always provide the required data to monitor the performance of the PHC level.

Research done in the three countries during the retrospective phases, was not conclusive regarding the evidence for effectiveness and cost-effectiveness of community-based interventions in Indonesia,

Myanmar and Vietnam. There were mostly small-scale or isolated activities, e.g., campaigns to reduce salt intake or information campaigns on healthy diets.
In the retrospective phase, the researchers also conducted literature reviews to investigate the most successful approaches and concluded that an integrated approach would work best, and that collaboration with multiple stakeholders (community groups, community-based organisations, healthcare professional, and healthcare organisations) in the design and implementation of the activities would be mandatory to achieve an impact.

2.2 Scaling up strategy in SUNI-SEA: focus on quality improvement

In literature, scaling up is often described as horizontal and vertical scaling up [5]. Horizontal scaling up is aiming at reaching more people with existing services (for example NCD screening in new geographic areas), while vertical scaling up aims to increase the services for people already reached (for example adding NCD screening to health education programmes). In the retrospective phase of the SUNI-SEA project, we analysed contextual factors for the scaling-up and identified the most important barriers and facilitators[2]. Based on the findings from the retrospective phase, the SUNI-SEA project saw the necessity to add a third dimension to the traditional model of vertical and horizontal scaling up, namely the dimension of quality improvement. The SUNI-SEA project planned the scaling-up strategy in the following way:

- **Increase the package of services** in the existing community programmes or in the health facilities in the research area, for example by making NCD screening and counselling available for all adults, who are already participating in community health programmes.
- **Increase the quality of service** in communities or health facilities to achieve a more sustainable impact. Ensure that health workers and volunteers apply quality procedures, have equipment or medicines.
- **Increase the coverage of services** reaching more people in more geographical areas. For example, training staff in new health facilities or initiating more community groups in areas where previously no services were provided.

Figure 2 Dimensions of scaling up NCD interventions in SUNI-SEA

In the prospective phase, the SUNI-SEA project focused on all three elements and gained experiences in reaching more people, improving the package of services and enhancing quality of prevention and care.

2.3 Planning interventions in the SUNI-SEA project

As explained in paragraph 2.1, we started by carrying out a situation analysis in the three countries where we implemented the SUNI-SEA project. In the retrospective phase, we planned interventions to address critical issues for improving NCD prevention and control in communities and PHC facilities. For structuring the interventions and assessing possible impact, we used the 'model of fit' (David C. Korten, 1980)[6] (figure 3). This model is also used in the WHO guidelines for scaling-up [7].
Three elements are interdependent (as shown in the arrows) and need to be addressed in a comprehensive manner, in order to achieve impact:

- ***Community:*** The community is a complex organisation and has formal and informal structures, for example local government authorities, community-based organisations, informal elders, religious leaders, networks. Social, cultural and political factors influence communities. Members of the community express demands for services to healthcare organisations (or even to perform health-related activities) and are dependent on decisions of healthcare organisations for services to be delivered. In the interaction with healthcare organisations, community participation, co-creation and co-ownership is shaped.
- ***Healthcare Organisation of health services:*** The healthcare organisation consists of multiple layers of primary health care, hospital care, and management. It is a dynamic organisation with its socio-cultural beliefs and practices, being closely integrated with policies, protocols, resources and other health system structures. The organisation is responsible for implementing the NCD control programme and must be capable of implementing tasks as required. Here is where quality comes in. The healthcare organisation interacts directly with the community.
- ***NCD Control Programme for implementing NCD interventions:*** Based on epidemiological, social and cultural factors, the NCD control programme is developed (as explained in the introduction). There is an increasing need for hypertension and diabetes services. The NCD programme must deliver outputs, which will reduce hypertension and diabetes in the community. The programmes must be acceptable and accessible for community members. The programmes define the tasks for the health care organisations and must guide healthcare organisations in resources management.

Figure 3 shows the three elements of the community, healthcare organisation and NCD control programme with the related planned interventions. The interventions are based on the situation analysis we performed at the beginning of the project and aimed at achieving the best possible impact. In the approach of SUNI-SEA, the interventions must be mutually reinforcing and must be applied in a comprehensive scaling up programme. In the next chapter, we explain the interventions carried out in the prospective phase.

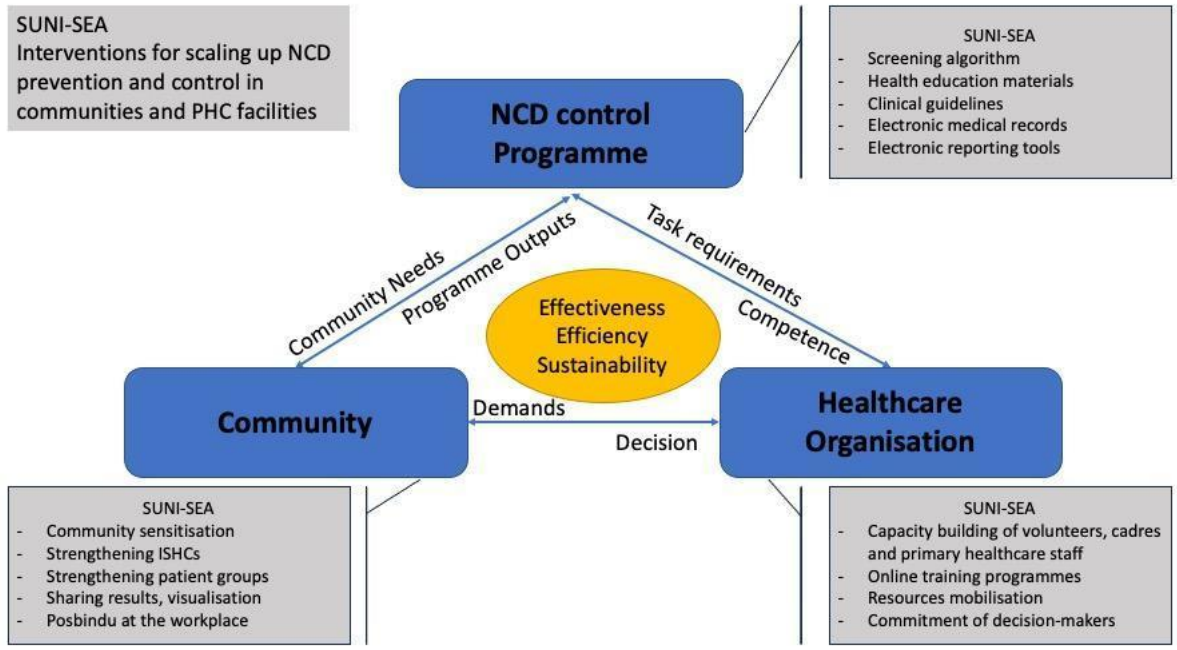

Figure 3 Structure of interventions in the SUNI-SEA project

3 Interventions in the SUNI-SEA project

The interventions implemented in the prospective phase of the SUNI-SEA project aimed at increasing the package of services (for example more screening, more health education), increasing the quality of services (for example capacity building, guidelines, monitoring), increasing coverage (self-monitoring tools, Posbindu at the workplace, stakeholder mobilisation). By the end of the project, in the spring of 2023, we evaluated the interventions through different surveys, interviews and focus group discussions. The measured impact of the interventions among the users of services through a baseline and endline survey, which are reported in work package 2 Cost-Effectiveness.

3.1 The NCD control programme

3.1.1 Screening tools and manual

In the SUNI-SEA project, we analysed NCD screening manuals developed by WHO (STEPS programme), Integrated Care for Older People (ICOPE), and other manuals used by the MOH in Indonesia, Myanmar and Vietnam. We also analysed data from the FINDRISC tool, a tool to identify people at risk for developing diabetes. We adapted the tools for application by community health volunteers and combined all tools into one simple screening manual, used in all three countries. The manual consists of a series of questions, simple measurements (weight, height, abdominal circumference, blood pressure), and further advice for follow-up, based on a flow diagram of screening and consultation. The answers and measurements are routinely recorded and offer a wealth of data for analysis. The screening tools in the three countries were integrated into ICT applications and the FINDRISC tool was added as an instrument. In Myanmar, the electronic screening tool was incorporated into a self-assessment and management tool for NCDs.
We developed a training manual for using the screening tools, and measurements (see 3.3.1 Capacity building). The screening was meant to signal risk and possible early signs of NCDs, not replacing diagnosis. People were advised to visit a PHC facility in case risks or symptoms were identified.

In the evaluation, we found that the screening tools were very relevant and user-friendly. Nearly all volunteers were able to perform measurements like taking blood pressure, measuring body weight,

or abdominal circumference. Some had more problems with calculations like Body Mass Index, WHO NCD risk scores, or FINDRISC scores. Under time pressure, sometimes the screening was not completed as required. For example, counselling based on the assessment was skipped. The tool was also tried in community groups in Cambodia and found to be easily applicable.

3.1.2 Health education materials

We developed health education materials and counselling manuals concerning NCDs, based on existing materials from Indonesia, Myanmar and Vietnam, and adapted the materials to local contexts where needed. Often, we worked together with community organisations in the development of the materials. Now we have posters, flyers, folders and other written materials to be used during screening and health promotion activities. In addition, we have short videos and clips that are combined with electronic self-screening tools.
We also used the health education materials for community mobilisation. In addition, locally more traditional means of communication were applied to spread health education messages, with loudspeakers, meetings during market days, or local radio. We also used the materials such as counselling support instruments, to provide participants with take-home messages. The materials were made available to peer groups of persons with chronic health conditions.
The community-based endline survey in Indonesia and Vietnam found an increase in knowledge among visitors of Posbindu in Indonesia and ISHC screening activities in Vietnam, which can be attributed to the health education activities and materials in the SUNI-SEA project.

3.1.3 Clinical guidelines

In the retrospective phase, we identified relevant clinical guidelines, which often were too complicated for primary healthcare workers (junior doctors, nurses or clinical officers). The project team simplified the clinical guidelines to make them more understandable for PHC staff and developed job aid materials (like desk tools, posters). In Vietnam, the primary healthcare workers were trained in using the adapted clinical guidelines and job aids.
We evaluated the effect of the clinical guidelines. PHC staff slightly improved their knowledge after the interventions, particularly in hypertension diagnosis. PHC staff in Hai Phong significantly improved their practice of hypertension management at Commune Health Stations following the MOH's guideline, particularly in health education. There was better adherence to treatment as a result.

3.1.4 Electronic Medical Record

With the help of an India-based digital technology company, the open-source software DHIS2 tracker was developed for electronic medical records (EMR), to be used during screening in Vietnam and Myanmar.
In Myanmar, the app also became part of a self-help platform, as the planned in person activities could not continue after the military coup. In 74 villages in four safe project regions in Myanmar, the self-care NCD screening and health education application software was promoted. Thirty ISHG volunteers were trained in providing support to individuals who were using the app. They assisted with blood pressure measurement and measured the height, weight and waist circumference of community members who requested it. A package of Information Education and Communication materials for NCD prevention and control and mental health promotion was made available via the internet[8]. The SUNI-SEA Data Management Coordinator (DMC) for Myanmar regularly reviewed and visualised the data based on the number of usage and location of usage. People with NCD risks could be identified: 44% of the users, mostly because of high blood pressure (38 %), but also high FINDRISC scores (2%) and mental health conditions (5%). It was too early to measure how the app can play a role in

permanent monitoring of the health of users in Myanmar. The app is now available via the app store and playroom. HelpAge Myanmar will continue providing support.
In Vietnam the EMR was made available to volunteers recording NCD screening in communities. The data recorded in the two project provinces was of good quality with 95% data completement and less than 10% errors in data entry. However, often the data were only entered into the app after the screening session, and ICT decision support of the app therefore was not used. Some people with limited digital literacy had problems using the app. The volunteers did not perform local analysis of the electronic data but continued manual systems. Only managers at higher levels used electronic data and dashboards for evaluation of the activities and for priority setting.

In Indonesia, an EMR system was developed and used by the volunteers. The government in the meantime had introduced a national system, which is now used in all Posbindu. The MOH has launched an integrated disease recording and reporting system (Aplikasi Satu Indonesia Kesehatan/ASIK/Indonesia integrated health application). That is now used in Posbindu as well.
In general, our conclusion is that electronic recording systems have a future, also in community-based healthcare. However, when working with volunteers with limited digital literacy, it takes time and repeated training and supervision to get the system up and running.

3.2 The Community

3.2.1 Sensitisation

The community based NCD activities were offered free of charge to community members. For the situation analysis, it appeared that not all people were utilising services that were offered. In general, older people may face many barriers to access health services, due to reduced mobility, cognitive challenges or other reasons. Moreover, the male adult population, who work in the daytime and the younger population were difficult to reach for health promotion and screening. Both teams in Indonesia and Vietnam experienced such challenges. It was necessary to offer services very close to

the place of living or working of people targeted for NCD activities. Posbindu and ISHCs therefore organised screenings twice per year in communities with active participation of community leaders and mass organisations to mobilise the people to come. Social media (WhatsApp, Facebook) and traditional methods (e.g., loudspeakers) were used to sensitise people. The community-based endline survey showed that mouth-to-mouth advocacy was contributing to increased participation: family members and neighbours were more inclined to come for screening. Peer-to-peer sensitisation is therefore important in such community-based programmes.
In several organisations (universities, schools, government offices), Posbindu at the workplace was provided. This indeed increased participation of (younger) men. Most of the interviewed participants found a health check at the workplace convenient and were willing to listen to health education messages. Even with a higher education level than average, knowledge of younger men on NCDs and risks was not better compared to older people. Many are not really interested in improving their health behaviour and over 50% smoke. This indicates that health education for younger people is certainly needed.
Posbindu participants mentioned smooth organisation of the screening, with little waiting times and adequate services as a must for increasing attendance. As less than 20% is troubled by NCDs their motivation of spending time on health checks is low. Health promotion and screening as part of occupational health is an important contribution to prevention and control of NCDs.

3.2.2 Community participation

The research teams in this project worked closely with existing community-based structures. In Vietnam, HelpAge International had close working relationships with the governing bodies of these organisations and groups, e.g., the People's Committee, the Vietnam Association of the Elderly. In Indonesia, there was direct contact with local and regional government authorities responsible for Posbindu. In Myanmar, after the military coup, the research team strengthened the CBOs in Shwe Danu (Shan State) to implement self-help through an ICT application.
The differences in organisational structures at community level demanded from the project teams many adaptations to local contexts. For ISHCs, the focus was mainly on community development, with health as one of the components, while for Posbindu the focus was more on health, as outreach of the Puskesmas. While the screening tools could be rather uniform across the project, materials and methods for enhancing community participation were strongly localised and adapted to country contexts. A culturally adapted training programme for ISHC volunteers and board members was developed and implemented. Culturally adapted health education materials were developed and disseminated in communities.[9]
The screening algorithm was implemented in bi-annual screening activities by ISHC volunteers. [10] In some cases, staff from Commune Health Stations (CHS) supported the screening in ISHCs. In one year, over 100 screening sessions were conducted in 58 involved ISHCs, attended by nearly 3,500 ISHC members (who were screened twice). Screening data shows that 25% of the people screened were overweight and 16% were obese; 30% of the people screened had high blood pressure, and using the FINDRISC tool, 4.5% were found to be at a high risk for diabetes.
In Vietnam, health education materials for patients with hypertension and/or diabetes were developed and disseminated. A handbook for self-care at home was developed. Also, peer support groups were created. Patients who were managed by local CHSs and were also the members of ISHCs received support of village health workers and ISHC volunteers to form small patient groups. In these peer groups, patients supported each other in adhering to medication, regular attendance of routine medical appointments, and lifestyle modification. In an evaluation, 79% of NCD patients said that joining group activities improved their health behaviour and practices regarding adherence to medicine.
The DHIS2 tracker self-care tool for NCDs has been introduced in several (safe) locations in Myanmar and is supported by volunteers. Since its launch, the NCD mobile app has been downloaded over 2,198

times, with positive feedback from users. Nearly half of the users have an elevated risk for NCDs. Three quarters were using the app for screening for mental stress factors too. The health education materials included in the app was accessed by 83% of the users. The app continues to be downloadable through the Google play store and Apple app store. Via the Burmese NGO forum, the tracker is being disseminated within the country. Due to the political situation, no collaboration is sought with the national government.

In the project provinces in Indonesia nearly 350 Posbindu sessions were organised in just over one year, with in total around 9,800 participants. Screening data showed that 17% of people screened were overweight and 35% were obese, while 37% had hypertension. Four percent of screened people were found to have a high FINDRISC score for diabetes.

Due to the COVID-19 pandemic, the planned project implementation period was shortened, which affected the total numbers of people reached. However, good numbers of people could be reached, who were willing to return for second screening and who participated in health education sessions, e.g., physical activity. The numbers show that risk factors are high for hypertension, overweight, obesity and diabetes.

The evaluation showed that setting up and organising screening and health education in communities, requires a lot of organisation and commitment of stakeholders, especially for maintaining continuity of services. The cost-effectiveness analysis shows that despite the investments required, community sensitisation and NCD activities are valuable tools in prevention and control of NCDs.

3.3 The Healthcare Organisation

3.3.1 Capacity building

The retrospective phase of the SUNI-SEA research into capacities of health workers and volunteers showed a need for additional training to maintain quality of services delivery. The findings were translated into training materials and courses, distance learning tools, and an electronic Learning Management System. Capacity building became one of the key project areas in SUNI-SEA. All country teams implemented training programmes with essential components and participatory teaching methods for both community volunteers and members as well as Primary Health Care workers.

In Indonesia, in total, 92 cadres were trained in three training sessions in the areas Batang (1 session) and Kediri (2 sessions). Immediately after the training knowledge levels increased but after one year decreased again to average. Skills levels showed some improvement immediately after the training and increased slowly one year after the training. In the project period, cadres have advised 455 persons screened to PHC but there were not always clear procedures for referral. The evaluation showed that for maintaining levels of knowledge and skills, regular supervision, mentoring, on-the-job training and refresher courses are needed. An on-the-job refresher course was therefore offered to cadres after the evaluation.
The training programme for primary healthcare workers in Indonesia concentrated on the use of screening algorithms and how to help the cadres to categorise NCD risks of the Posbindu participants correctly. Also training in health education was provided. Ten NCD programme managers in Puskesmas were trained on the Posbindu algorithm and linkage to care (Referral System). Also 30 midwives and nurses were trained on linkage to care.
In Vietnam, 295 health volunteers in ISHCs were trained in screening and health promotion. Another 400 people in community-based organisations, local government and health services received a short orientation about the SUNI-SEA project. A similar pattern as in Indonesia was visible with an initial increase of knowledge, followed by a decrease after one year. Skills improved slowly. The team provided refresher courses. By the end of the project, health volunteers were able to perform measures correctly in 95% of the cases.
In Vietnam, orientation and training were provided to 126 CHS staff regarding screening, diagnosis and treatment of NCDs. The staff was stimulated to provide supervision to ISHCs. Often CHS staff went to assist during ISHC screening and to counsel persons with identified risk factors. PHC staff's knowledge slightly improved after training, particularly in hypertension diagnosis and patient follow-up. PHC staff in Hai Phong significantly improved their practice of hypertension management at CHSs following the MOH's guideline, particularly in health education and health monitoring.
In Myanmar, the team organised online training for the themes of diabetes, hypertension and mental health for primary health care workers in NGOs and private clinics. This training can expand to government health care workers, if the political situation improves. The team also developed an interactive online learning platform to provide webinar style expert panels, technical presentations, and discussions for the Continuing Professional Development programme. Seven NCD prevention and management modules were developed, including two videos. The modules were pilot tested with 17 users and are now available online for broader use by healthcare workers.
Maintaining quality of services was identified as a key element for scaling up NCD interventions in Southeast Asia. The SUNI-SEA project invested a lot in developing or improving training programmes for volunteers and professionals. Training materials were adapted to local cultures. The training courses and modules were made available to other stakeholders in the local countries and will be used in the future. Important lessons learned regarding training volunteers is that follow up is absolutely necessary. Imparting knowledge is an iterative process, and building skills requires repeated practice and regular training. Systems of supervision, mentoring and on-the-job training are necessary to achieve and maintain quality of the interventions.

3.3.2 Resources

Resources for community-based screening are generally not provided or safeguarded through a regular budget by government bodies or health insurers. In Indonesia, medical equipment for Posbindu may come from primary healthcare facilities. Materials (e.g., dipsticks for testing) may be purchased with available local funds. Community funding (village fund in Indonesia) may be provided for local screening and health education programmes, but is not regular. Commodities may therefore be missing during screening sessions, affecting the satisfaction of users.
Community organisations may need to apply for funding from local governments. In some places in Indonesia small incentives are paid to cadres from funding received from local governments. In

Vietnam and Myanmar, the ISHCs are more self-reliant regarding finances (contributions from members, interest from loans), or receive some support from international donor projects. They may get equipment and materials from sponsors. There is a wide variety of income generating among ISHCs. Volunteers in Vietnam do not receive a financial incentive. While volunteerism in the three countries is highly appreciated, it has its limitations. Volunteers cannot be asked to have the same commitment or time available as professionals. There may be a higher turn-over, and less possibilities to keep knowledge and skills up to date. Supplying volunteers with enough equipment and commodities for screening is important to maintain high motivation.
Lobbying and advocacy for resources was an important part of the project, as will be described below. In Vietnam, the policy is that CHSs should also offer screening, but in Hai Phong only 55.9% of the CHSs conducted hypertension screening and 35% did diabetes screening. In Ninh Binh, the situation was better, with 95% CHSs providing hypertension screening and 90.5% diabetes screening. The difference was caused to a large extent by resources made available by provincial health authorities for such activities.

Unfortunately, in Vietnam, treatment for diabetes and hypertension is still in its infancy at PHC level. Treatment for diabetes was only offered in 13 CHSs in Hai Phong. In Ninh Binh, CHSs could not offer treatment for diabetes. High blood pressure treatment was available in more locations, in Hai Phong and Ninh Binh, 62% of CHSs offered treatment for hypertension. The bottleneck was especially the lack of medicines. Despite the policy of treatment of diabetes and hypertension in primary healthcare, the systems and processes for the distribution of essential medicines is not yet updated.

3.4 Comprehensive package

The SUNI-SEA project aimed at strengthening the health system through a comprehensive package of interventions for communities, healthcare organisations and NCD control programmes, and based on the analysis this would lead to more effective and cost-effective methods of prevention and control of diabetes and hypertension. Priorities for interventions were formulated by the country research teams in close consultation with local health authorities, community organisations and community members. This approach has been successful, despite the limitations due to the COVID-19 pandemic.

4 Engagement of stakeholders in the implementation process

4.1 Situation analysis

Community: The funding of community health activities is often provided by local or regional government authorities. In decentralised governance systems in Vietnam and Indonesia, local communities manage their community funds. Communities or groups of citizens (like ISHCs) take ownership of their health activities and need to team up with regular health services to be recognised as relevant partners. Communities should be empowered and get more insights into their rights and entitlements. In Vietnam, the Vietnam Association of the Elderly was a powerful partner of the community groups in Vietnam. In Indonesia, community groups were less well organised and recognised as partners.

NCD control Programme: Financial resources determine to a large extent the package and quality of prevention and control of NCDs. The universal health coverage policy of countries is very important in this: the package of services to the population needs to be directed towards the shifting epidemiologic priorities and upcoming NCDs. In our project often PHC facilities were not able to provide basic medical treatment for NCDs. Health insurance did not yet include NCD services or include coverage of medicines in the service package of primary healthcare facilities. Preventive activities were not covered under the insurance packages.

Healthcare organisation: Human resources are crucial for the quality of services. But the primary healthcare level in the three countries was not ready for managing NCDs. Many health workers did not learn enough during their preservice training. In-service capacity building was taking place, for example the PEN training in Myanmar. However, competencies have to be strengthened and maintained, both clinically and managerial. Health workers must be motivated and assisted in their careers. The healthcare policies include NCD prevention and care, or healthy ageing, but those need to be translated into strategies and tangible interventions. Even laws need to be updated, e.g., concerning the intake of sugar, salt, tobacco, and alcohol.

Based on the studies and experiences in SUNI-SEA, we developed strategies for engagement with different stakeholders with whom we have been working during the project.

4.2 Engagement of stakeholders in scaling up

In Vietnam and Indonesia, devolution of government services put much emphasis on the role of local authorities. Scaling-up goes from the bottom-up, often spreading slowly from place to place, based on copying good practices and observing tangible results. Lobbying and advocacy target local level stakeholders and build commitment for sustainable investment in health promotion and prevention. On the other hand, quality assurance comes top down, with developing standards, improving capacity building, and ensuring supervision and mentoring. National ministries, regional and provincial authorities play a role in advocating for best practices in community based NCD prevention. Authorities at different levels need to ensure that CBOs receive technical support and ongoing capacity building, and work closely with primary health care providers.
The strategies in SUNI-SEA for engagement with stakeholders were therefore adapted to the local conditions of governance and management of the health services.

Figure 4 Stakeholder engagement by type of activities

SUNI-SEA implemented the following types of engagements with stakeholders:

Stakeholder meetings, advisory boards and consultations: Translating research into policy and practice is a long process which requires regular and repeated contact with policy makers with advocacy activities. Consortium members of this project had strong connections with the Ministries of Health, Provincial and Regional health authorities and other relevant authorities. Regular stakeholder meetings were conducted at all levels.

In Indonesia, devolution is an important government policy. Much of the operational decisions are shifted to the lowest levels in government. For Posbindu, collaboration with local, district and regional authorities was required to modify and operate the improved screening programmes. The consortium partner worked closely with relevant levels to make changes in the Posbindu. Especially during the COVID-19 pandemic, the collaboration was crucial to get work done within the context of the restrictions in personal contacts.

The Indonesian team has presented the improved screening algorithm and training programme to the MOH, which is in the process of restructuring the NCD prevention and control programme in the country. The SUNI-SEA results will be used in discussions about the restructuring process.

In Vietnam, community participation is formalised in mass organisations, like the Vietnam Association of the Elderly (VAE), and also in women and veterans' organisations, etc. These organisations already have a significant role in society and local government. From the onset of the research project, consultative meetings were conducted with the government health organisations and CBOs. They were involved in the training activities and jointly discussed planning and management of the SUNI-SEA project. In the course of the project, formal collaboration agreements were signed between the health authorities and the branches of the VAE. The ISHC approach has become a formal part of community health in Vietnam, and hundreds of new ISHCs are being created, often with financial support from other donors. VAE is formally involved in the monitoring and supervision of ISHCs. The DHIS2 tracker was introduced to improve reporting. It has a lot of potential, but digital literacy was found to be a stumbling block.

For training of cadres and volunteers, the project teams worked closely with provincial and district health authorities. The project worked with national and regional authorities to develop guidelines and standard operating procedures for screening and health promotion.

Professional networks and events: Each consortium member is part of other networks such as academic networks, NCD alliances, and broad networks, such as GACD. Through these networks, nearly all countries in Asia, Africa, and Europe are reached. Consortium members disseminated the SUNI-SEA policy briefs, manuals, guidelines and key findings on relevant list servers and websites.

Research findings were shared at academic and other conferences and workshops. The partners of SUNI-SEA organised webinars and online meetings to share their findings with the global research and public health community.

HelpAge International The HelpAge International (HAI) network of partners offered another option for learning about scaling-up activities. The worldwide HAI healthy ageing programme offered a platform for exchange and mutual learning. A global HAI working group reviewed the SUNI-SEA training resources and compiled a community-based healthy ageing training package. The resource package will be widely distributed, within the HAI global network, and external stakeholders.
The evidence-based resources include the SUNI-SEA guideline and tips on adaptation of community-based programmes and training materials to different contexts and will be a 'live resource library' that will be updated as new learning materials and resources are generated.

5 Key lessons learned in SUNI-SEA

In the final phase of SUNI-SEA, the project team applied a mixed method approach for evaluation of the interventions (as described in chapter 3). Evaluation was done with a community-based endline survey (compared with the baseline survey), several smaller surveys, focus group discussions and in-depth interviews. The table below presents the key lessons learned in messages and recommendations per stakeholder group.

Stakeholder responsible for the implementation of the recommendation	**Key messages and recommendations** **(Prevention – Treatment – Organisation – Policies)**
Local individuals and informal community groups	Increase health literacy of community members and build their trust in the benefits of prevention of NCDs. Enhance people's self-monitoring and decision-making capabilities concerning health issues. Make health information available through social and traditional media. Stimulate informal networks and peer support to improve healthy lifestyles.
ISHCs Management Boards, health volunteers, Posbindu Cadres	Enable meaningful participation of community members in design and delivery of NCD health promotion and screening. Make communities co-owners of prevention activities and create commitment. Provide services as promised to create trust but be aware of the limitations of community volunteerism. Stimulate people to consult professionals in health facilities if needed and avoid providing medical advice. Keep your knowledge and skills up to date. Strengthen health promotion, also as an integrated part of peer groups' activities (e.g., physical activities, gardening, cooking). Establish and maintain linkages between the community and primary healthcare facilities. Report on activities and share analysis.
Community Based Organisations (CBOs)	Increase funding and support for capacity building of CBOs for community level NCD screening, health promotion, peer support groups and self-care. Link the health activities to wellbeing and peer support. Stimulate community solidarity. Acknowledge and celebrate the work of volunteers, to keep them motivated. Offer opportunities to maintain knowledge and skills. Be a partner for healthcare organisations and generate evidence for (cost-) effectiveness of the interventions to lobby for funding at local government level in decentralised governance systems. Increase meaningful participation of CBOs in the policy arena for NCD policy development by bottom-up engagement (through national umbrella

	organisations). Create networks with other organisations to increase leverage.
NCD program staff at primary health facilities	Establish and strengthen linkages between communities and primary healthcare facilities. Acknowledge the role volunteers and peer groups can play in prevention of NCD. Train community volunteers and cadres in screening and continue mentoring to maintain quality of service provision. Perform joint analysis of reports, to deepen understanding of trends and achievements. Maintain quality of services through sufficient equipment and supplies, to satisfy users and volunteers. Establish contacts with CBOs and use the opportunities to enhance community based NCD interventions through these organisations.
Local Government Authorities at commune or village level	Engage community members meaningfully, in particular older people and those living with NCDs, in the design, delivery, monitoring and evaluation of NCD services. Link health to other social activities in the community. Focus on finding ways to ensure adherence to treatment by optimally using the trust people have in health staff, by collaborating with CBOs. Allocate village funds (from MoH and other ministries) for NCD-prevention activities. Lobby for funding from district and provincial authorities together with Posbindu cadres in Indonesia and commune health station staff in Vietnam.
District and Provincial Health Care Managers	Step up investments in primary healthcare so that more people have access to integrated quality healthcare services closer to where they live. Use the outcomes of SUNI-SEA's cost-effectiveness study to focus on improving the quality of NCD prevention and control services at primary healthcare facilities. Prevention and control of NCDs will create savings for the state budget (by having less costs for management and treatment of NCDs) and contribute to the achievement of the national NCD strategy objectives, and Sustainable Development Goals NCD targets. Build the capacity of PHC staff in planning and management of resources for NCD prevention and control, for instance what kind of infrastructure, medicines, materials and money is needed etc. In decentralised health systems, PHC staff must be able to contribute to bottom-up planning. Increase investments in provision of integrated, supportive supervision to PHC facilities to increase the quality strengthening of integrated health services for prevention and control of NCDs and to motivate and value PHC staff.

	Empower healthcare managers at district and provincial level to prioritise NCD prevention and control and provide them with skills for resource mobilisation and quality assurance. Involve multi-sector stakeholders in NCDs prevention as target participants and active leaders in addressing the social determinants of health. Establish and/or strengthen formal mechanisms for social participation and accountability by health facilities to communities. Establish formal platforms for engagement with CBOs to enhance synergies.
National MoH Departments MoH Policy makers	Integrate NCD policies and strategies into intersectoral plans to leverage sector resources to strengthen the prevention and control of NCDs. The management and control of NCDs needs a whole of society approach (health in all policies), as determinants of health play a key role in risk factors for NCDs.
Social health insurance scheme	Update the universal health insurance packages by focusing on improving the coverage and quality of the Essential Health Services Package to meet the requirements of NCD prevention, early detection, early treatment and adequate treatment.
Other ministries than MoH	NCD prevention and control is a multisectoral responsibility, related to agriculture (nutrition), education (health literacy), justice (regulations and laws), etc. Therefore, a health in all policies approach is necessary to make an impact.

Table 1 Key messages scaling up NCD interventions

6 Conclusion and Call to Action

SUNI-SEA's synergy approach (as explained in the introduction in chapter 1) has shown that community empowerment and close collaboration between primary healthcare facilities and community groups can result in increased knowledge and awareness about non-communicable diseases (NCDs), increased early detection and actions for addressing risk factors, and improved early treatment of NCDs at primary healthcare level.
The project built on national strategies and programmes and developed plans in co-creation with local stakeholders at all levels, as explained in chapter 4. The achievements are based on a thorough situation analysis of the local situation, and proposing interventions for the community, the healthcare organisation and the NCD control programmes. The interventions helped to strengthen the whole system, not only selected elements.
The evaluation has shown increased knowledge and, in some areas, improved attitudes and practices concerning NCD prevention and control of persons involved in community activities. Due to the short implementation period, caused by restrictions due to the COVID-19 pandemic, no impact on health could be measured. But the foundation for change has been laid. Evaluation of training and capacity building interventions has shown that improvements can be achieved but need a continuous investment to maintain high quality.
Finally, cost-effectiveness has been demonstrated based on modelling of the impact. High investments are needed in community-based screening for NCDs and health promotion, but in the end, these will result in cost savings elsewhere in the health system, by preventing new diseases, early treatment and avoiding complications of NCDs. Increasing the quality of people's life, improving participation of people in society and contributing towards the achievement of the sustainable development goals are valuable results of the total package of interventions.

It is high time to implement two paradigm shifts globally:

1. Give NCDs the highest priority in healthcare, as these chronic diseases are responsible for the greatest number of deaths, the highest morbidity, and are affecting the poorest countries most. Allocate more funds to NCD prevention and control.

2. Emphasise prevention and early detection of NCDs, as this reduces human suffering, prevents complications of NCDs, and saves costs. Mobilise the human capital in communities for improvement of health and wellbeing. Use bottom-up strategies to scale up community-based NCD interventions through co-creation and solidarity.

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