



Science to tackle non-communicable diseases in South Asia and beyond in the SDG era

Workshop report

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Executive summary

The incidence of non-communicable diseases (NCDs) is increasing around the world. NCDs are estimated to be responsible for 41 million deaths each year, many of which are categorised as 'premature', shortening lives for those aged between 30 and 69 years. NCDs are driven by rapid urbanisation, unhealthy lifestyles and diets, tobacco and alcohol use, physical inactivity and ageing populations. It is important to note the role commercial determinates of health such as the alcohol, tobacco and other industries may play in promoting unhealthy lifestyles.

South Asia has a significant burden of infectious diseases, which consume research resources, but at the same time there is growing prevalence of NCDs accounting for increasing mortality and morbidity. Many people in rural areas are unaware of the risks posed by tobacco use, alcohol consumption and a sedentary lifestyle. People often seek help from healthcare facilities only once complications have arisen, with the outcome that the condition has usually progressed, is more serious and less easily treated. In Sri Lanka, 19% of the working-age population has at least one NCD, reducing chances of employment and labour earnings compared to the rest of the population.¹

The United Nations Sustainable Development Goals (SDGs) are 17 global targets which aim to achieve a better and more sustainable future for all. Goal 3 focuses on good health and wellbeing for all people, and includes the objective of reducing premature mortality from NCDs by one-third by 2030. The prevention, treatment and promotion of good mental health and wellbeing all play a role.

At a two-day workshop held by the UK Academy of Medical Sciences and the National Academy of Sciences of Sri Lanka in January 2020, a number of challenges and barriers to addressing NCDs in South Asia were identified by participants:

- **A lack of NCD data** – South Asia has a high NCD burden but little published research on the topic in the region. Furthermore, there is a lack of incidence and mortality data and limited electronic health records.
- **Population-specific risk factors are not known** – Genetic studies have focused on European and North American populations and shed little light for South Asian populations who have different genetic and metabolic patterns.
- **Limited access to healthcare** – Many people in South Asia have limited access to healthcare and support services.
- **Lack of research incentives and support** – There is limited local funding, a lack of resources and infrastructure, and few incentives for research in the region.

1. Kumara AS & Samaratunge R (2018). *The effects of chronic non-communicable diseases on labour force outcomes: Quasi experimental evidence from Sri Lanka*. *Economics & Human Biology* **31**, 40-53.

Despite the challenges, participants identified opportunities to accelerate progress in NCD research, implement tools and identify innovations that could support researchers and healthcare workers:

- **Improving NCD data** – Research to identify and understand regional NCD risk factors as well as underlying commercial determinants, is essential for developing the best approaches for the region.
- **Building research capacity** – Increased leadership, collaboration between disciplines and across borders and an integrated approach will help tackle the problems of NCDs and multimorbidity. Collaboration and networks add value to research outputs and provide opportunities for capacity development. They bring together researchers, practitioners and policymakers from multiple disciplines to work collaboratively over an extended period of time to tackle a problem.
- **Building healthcare capacity** – Priority should be given to building capacity in primary and secondary care, with an emphasis on prevention, early detection, diagnosis and treatment of NCDs.
- **Developing prevention strategies** – Research should focus on healthier and affordable food choices, on behavioural factors and on the social, economic and environmental dimensions of NCDs.
- **Developing technical innovations** – Low-cost and effective detection, treatments and continuum of care can be supported by emerging technologies and mobile apps, provided they are clinically validated, appropriately regulated and integrated into healthcare systems.

For an area like NCDs where there are common themes between diseases, a collaborative approach could aid the development and implementation of acceptable, equitable, scalable and sustainable approaches to reduce disease burdens. The creation of a South Asian network across the region could help address the challenges of NCDs, bring opportunities to researchers, and improve healthcare systems and addressing relevant industry activities.

Introduction

NCDs are a global burden, and are estimated to be the cause of up to 41 million deaths each year worldwide, representing 71% of all deaths.² They are often slow progressing diseases that result from a combination of genetic, environmental, physiological and behavioural factors.

More than three-quarters of NCD deaths occur in low- and middle-income countries (LMICs), with 40% of these categorised as premature deaths, shortening lives for people aged between 30 and 69 years. By comparison, for high-income countries premature deaths are closer to 26% of total NCD deaths.³ In South Asia, NCDs including cardiovascular disease, chronic respiratory disease, diabetes and cancer are leading causes of death in the region.⁴

There are four major factors contributing to NCDs in South Asia: tobacco, alcohol, diet and physical inactivity. In the region, smoking is common, especially among men, alcohol use is increasing and diets are high in sugar, salt and carbohydrates. The increase in the rate of obesity is amongst the fastest in the world, and South Asians are particularly susceptible to weight-related diabetes. For example, nearly half of the Malaysian adult population is classified as either overweight or obese.⁵ Although some countries in the region have national guidelines on physical activity and multisectoral approaches to tackling NCDs, implementation of these are suboptimal.

The World Health Organization (WHO) has a global target to reduce NCD mortality by 25% by 2025.⁶ In the South Asia region, this is unlikely to be met on the current trajectory. There have been reductions in the incidence of cancer and diabetes but these are flatlining. A quarter of adults are hypertensive, and the numbers of those who are overweight or obese are increasing in all countries in the region. Mental health also remains a challenge.

Genetic studies to date have tended to use white European and North American genotypes and there is a lack of data for the Asian population. Environmental factors differ in other parts of the world and the awareness of risk factors may be lower in rural areas in South Asia where communities are harder to reach.

The rise of NCDs threatens progress towards the SDGs, which were adopted by United Nations member states in 2015.⁷ The SDGs are an urgent call for action by all countries in a global partnership, recognising that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth.

Disciplines need to come together to tackle this vast problem of NCDs. Different solutions will be effective in different countries across the region, but there are commonalities and success stories that can be replicated.

2. World Health Organization (2018). *Fact sheet: noncommunicable diseases*. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
3. Ibid.
4. World Health Organization. *Tools for the prevention and control of NCDs: South East Asia region*. <https://www.who.int/nmh/ncd-tools/who-regions-southeast-asia/en/>
5. Academy of Medical Sciences (2017). *Addressing the global health challenge of obesity in Malaysia*. <https://acmedsci.ac.uk/file-download/18861164>
6. World Health Organization (2016). *Global NCD target: reduce premature deaths from NCDs*. <https://www.who.int/beat-ncds/take-action/policy-brief-reduce-premature-deaths.pdf>
7. United Nations. *Sustainable Development Goals*. <https://sustainabledevelopment.un.org/?menu=1300>

With many countries in the region having large populations, achieving universal health coverage, sufficient human resource and rapid responses to medical needs are all challenges, but technology is enabling some advanced medical care.

In January 2020, a two-day workshop was held by the UK Academy of Medical Sciences and the National Academy of Sciences of Sri Lanka. The workshop focused on the status of NCDs in South Asia and beyond (Bangladesh, India, Indonesia, Malaysia, the Maldives, Nepal, Pakistan, Sri Lanka and Thailand), with respect to relevant SDG targets, particularly for cardiovascular disease and stroke, chronic kidney disease, diabetes, respiratory diseases and mental health, though discussions also included cancer.

Bringing together experts from across the region with different research and clinical backgrounds, the aim of the workshop was to identify approaches that could accelerate progress in implementing existing tools, identify innovations that could support rapid improvements, and review opportunities to support increased research leadership and capacity.

How can research be applied to address NCD disease areas to achieve SDG Target 3.4?

The intention of SDG 3 is to ensure healthy lives and promote wellbeing for all ages. Target 3.4 aims to reduce premature mortality from NCDs by one-third by 2030 through prevention and treatment, and the promotion of mental health and wellbeing. The disease burden across South Asia has shifted to NCDs and efforts are required to establish effective solutions for the regions to address their growing incidence. NCDs encompass a huge range of different diseases, which require different solutions and interventions to improve the disease outcome of those affected. However, many NCDs share similar risk factors and prevention strategies will be key in reducing the burden across the region. Research is vital to better understand the different disease areas that contribute to the NCD burden, including cancer, chronic kidney disease, diabetes, respiratory disease, mental health and cardiovascular disease, and to informing effective approaches to combat these diseases.

Disease incidence

A similar story of increasing incidence and disease burden can be told for many NCDs in South Asia. Cancer is the second most common NCD in the world after cardiovascular disease and cases are estimated to rise as life expectancy increases around the world, including in South Asia. Chronic kidney disease is estimated to be the fifth biggest cause of death worldwide by 2040 with the burden being particularly high in LMICs due to the cost of treatment.⁸ Air pollution and climate change have been linked to an increased incidence of kidney disease in India and across Southeast Asia.⁹ Particularly challenging in South Asia is the rise of chronic kidney disease of unknown aetiology. The prevalence of type 2 diabetes is increasing worldwide and this is particularly true for South Asia. Furthermore, data on the burden of complications arising from the disease are lacking in the region. In India, a survey of 33,000 adults found that 10% are currently living with a diagnosable mental health disorder;¹⁰ and there is likely to be a similar prevalence rate in adolescents and children across South Asia. High rates of tobacco smoking and areca, or betel nut use, along with an ageing population and deteriorating environmental conditions in the region mean respiratory diseases are becoming a predominant cause of morbidity and mortality. Similarly, there is a high burden of cardiovascular disease and stroke in Asia.

The importance of prevention

Work is needed to shift the focus to prevention to control the growing burden of NCDs. The prevention of different diseases could be combined as many of the risk factors are shared. For type 2 diabetes addressing the known risk factors is considered an easily achievable target, through promoting physical activity and a healthy diet, and the reduction of alcohol and tobacco use. In addition, lifestyle changes should be encouraged earlier to address the high burden of prediabetes in the region rather than waiting for diagnosis. This is also true for mental health where prevention should begin early in life; reducing neglect, deprivation and abuse of children will be crucial. Interventions which promote an overall healthier lifestyle will also help combat a rise in cardiovascular disease, cancer and respiratory disease.

8. Foreman KJ, et al. (2018). *Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016–40 for 195 countries and territories*. *Lancet* **392(10159)**, 2052-2090.
9. Glaser J, et al. (2016). *Climate change and the emergent epidemic of CKD from heat stress in rural communities: the case for heat stress nephropathy*. *Clinical Journal of the American Society of Nephrology* **11(8)**, 1472-1483.
10. Gururaj G, et al. (2016). *National mental health survey of India, 2015-16: Summary*. National Institute of Mental Health and Neuro Sciences, NIMHANS Publication No. 128.

For cancer, it is estimated that if known cancer risk factors are eliminated, incidence could reduce by about a fifth, and tackling infections would reduce cases by another 15%, meaning a third of cancers and half of deaths are preventable. It is also important to consider the role that alcohol, tobacco and other industries play in formation of unhealthy lifestyles. The five largest contributors to the burden of respiratory diseases are asthma, chronic obstructive pulmonary disease (COPD), acute respiratory infections, tuberculosis (TB) and lung cancer. The causes are the same for all five: tobacco smoke, indoor and outdoor air pollution, occupational hazards, non-respiratory NCDs and physical inactivity.

As well as a focus on prevention, early detection and increased awareness will be crucial to improving disease outcomes once patients are diagnosed. For example, at-home screening for kidney disease risk factors and for kidney function abnormalities have both shown some success, meaning interventions can take place earlier, before the cost of treatment escalates. The stigma attached to mental ill health represents an additional challenge and leads to individuals not seeking help or not receiving it even if they do. There is a scarcity of research, and efforts should focus on understanding the diseases and the commonly occurring disease clusters in the region as well as prevention strategies.

Examples of research initiatives to address NCDs

- An initiative between Cancer Research UK and the Indian government's Department of Biotechnology will provide £10 million in grants to support projects that have the potential to address seven research challenges, including prevention and early detection and better treatments.
- A national dialysis programme in India provides free treatment for kidney disease sufferers unable to pay for treatment. In just nine months, 120,000 sessions were organised.
- In Sri Lanka, training programmes for accredited social health activists and school-level lifestyle interventions have shown promise in addressing lifestyle factors associated with NCDs.
- India and Pakistan have worked together, trialling and publishing findings on the benefits of using community healthcare workers for alcohol problems and maternal depression. A large study in the region has also shown that altering the school environment can reduce mental health problems and violence.
- Evidence-based treatment strategies for stroke care have been estimated to save 400 extra people a year for every 10,000 strokes. In India, there have been clinical trials to assess both treatments and rehabilitation. The ATTEND trial saw accredited social health activists speeding up the identification of and treatment for stroke.

Challenges and barriers

Workshop participants separated into breakout groups to focus on five disease areas: cardiovascular disease and stroke, chronic kidney disease, diabetes, respiratory conditions and mental health. Each group defined the state of play and identified challenges and barriers for research and interventions on their topic.

Many common themes and challenges were identified across the disease areas including a lack of:

- Reliable, comparable and representative data across the region.
- Understanding of the population-specific risk factors.
- Access to healthcare and health awareness.
- Incentives to support research in the region.

1. NCD data

Across the board, a lack of reliable, representative, population-level incidence and outcome data was identified, along with shortfalls in reliable cause-specific mortality information. When records are kept, they can be limited or incompatible, and in some instances, there is an unwillingness to share data. Though epidemiological data are scarce, there is a high disease burden in most countries for each of the NCDs discussed.

There is an urgent need for more population-based, representative data as well as basic science data and long-term prospective cohort studies, studies on traditional medicines and on health systems in South Asia. Researchers need to understand what causes diseases to progress their research in South Asian countries and will require empirical data from local populations. Genetics, environmental factors, health systems and their interactions are different from those in European and North American countries, so findings from elsewhere may not apply in a South Asian context. Local capacity building is lacking, and infrastructure and research should be regionally driven based on local needs and priorities.

2. Population-specific risk factors

The determinants of the major risk factors are not well understood and characterisation of unique population-specific risk factors is required. Interplay between risk factors and other conditions, and how they influence outcomes are unclear. Attempts are needed to understand how commercial determinants of health such as lobbying efforts of alcohol and tobacco industries contribute to the promotion of the use of these products leading to an increased burden of NCDs. National and regional NCD action plans must also be updated to include air pollution, which is a risk factor for many of the NCDs discussed.

In almost 50% of chronic kidney disease cases, the aetiology is unknown. Confusion exists around terminology and a uniform definition. Ongoing research is trying to unravel this, but it should be carefully navigated due to political sensitivities around the possible causes of the disease in many countries in the region, including Sri Lanka.

For type 2 diabetes in particular, South Asians have an increased susceptibility at lower thresholds of BMI and age than other populations, and the mechanisms for this are poorly understood. Research is needed on both mechanisms and causes, including the effects of foetal programming and epigenetics, dietary factors, the role of exercise and novel risk factors like environmental pollution. The influence of factors like policies related to food and physical activity should also be explored.

3. Access to healthcare

Limited capacity in primary and secondary care and a low awareness about NCDs in general are a challenge for the region. In many countries, access to basic health interventions differs greatly depending on socioeconomic status. For example, in the respiratory area there are severe problems with access to primary care, low cost asthma medicines and effective screening for lung cancer. Either increasing community healthcare workers or e-health, or both, should be a priority. Several potential interventions are yet to be evaluated on a larger scale, which is an important issue, as successful interventions are often difficult to scale-up and sustain.

4. Research incentives

There is neither an enabling environment nor incentives for undertaking research, and this is compounded by inadequate data on evaluation and the success of existing programmes. Examples of high-quality collaborative research in certain settings exist, but are principally investigator-driven and not well coordinated across research groups. There are also few incentives for healthcare professionals to participate in research. Other barriers include a brain drain, limited funding and a lack of resources and infrastructure, as well as few incentives for research.

In mental health, policy-wise, there is support from governments for initiatives, but funding is limited. Local funding is also scarce with most coming from the UK or USA, and country-level funding is directed to national agencies where very few teams carry out research on the topic. Evidence is mainly from Western countries and is not always relevant or applicable in South Asia. Multisectoral collaboration and interdisciplinary research are urgently needed across the region.

Strategies to address NCDs in South Asia and beyond

In the breakout groups focused on the different disease areas that contribute to the NCD burden, participants discussed opportunities for research, discovery and development, and implementation science. They identified strategies to address health service actions, policy measures, and research structure and funding. A number of common themes emerged which are shared across NCDs:

1. Improving data collection – Databases need to be established with population-based comparable and representative data.
2. Increasing research capacity – Increasing research funding and supporting research networks are a vital part of increasing research capacity in the region and identifying region-specific interventions.
3. Increasing healthcare capacity.
4. Developing evidence-based policies to improve prevention.

1. Improving NCD data

Data collection and reporting could be greatly improved for NCDs. Population-based, representative data are required and databases should be consistent to enable cross-border collaboration. Ensuring the generation and use of research data must become a key part of developing health policies. Only data on local populations will improve understanding of what causes diseases to progress in South Asian populations.

2. Research capacity

South Asia currently has little published research on the topic of NCDs in the region, which hinders efforts to overcome regional health challenges. For example, despite a high disease burden, the South Asian contribution to global research outputs on diabetes was just 2.1% in 2013.¹¹

Funding

Funding for collaborative, cross-disciplinary research should be a priority, with more funds allocated to capacity strengthening and research infrastructure as well as to research itself. Facilitating collaboration across public/private entities and regionally, along with protected research time, incentives and favourable systems would promote high-quality research.

Opportunities exist to integrate research studies across NCDs, to investigate multimorbidity, and to apply knowledge and best practice to support patients and their families. Capacity and funding should be increased for multidisciplinary research on the prevention and control of NCDs, but only through the creation of a more enabling environment will research flourish.

South Asia needs local research and regional solutions. More funding for South-South cooperation and collaborative projects across the region would improve the picture for patients and their families. In many cases funding comes from outside the region, and this needs to change so agendas can be set locally.

Capacity building in the region will prove crucial. There are growing opportunities for researchers under different funders and investors, including the World Bank and the UK's Medical Research Council. The World Bank is investing in NCDs globally with South Asia receiving the third largest amount of funding after Latin America and Eastern Europe. The World Bank supports work on screening, prevention and updating healthcare systems to focus on NCDs, along with non-health interventions that relate to prevention.

11. Ranasinghe P, Jayawardena R & Katulanda P (2013). *Diabetes mellitus in South Asia: Scientific evaluation of the research output*. Journal of Diabetes **5(1)**, 34-42.

Collaboration, mentoring and networks

Multisectoral collaboration and interdisciplinary approaches are needed in research, and funding agencies should be called upon to build capacity and provide incentives. Where funds are available, clinicians are often too busy with no committed time to research; incentives are needed to address this challenge. Research should not be carried out in silos and non-governmental organisations (NGOs) need to be better coordinated. A South Asian research hub could be very successful in this area.

Mentoring schemes offer opportunities for individuals to develop with the support of a mentor. They encourage autonomy and self-development, by identifying and providing opportunities for development and placing the mentee in the driving seat. Mentoring offers experience rather than hierarchy, providing a safe haven to explore professional development and work-based issues.

Research networks can bring together researchers, practitioners and policymakers from multiple disciplines to work collaboratively over an extended period of time to tackle a problem. They work best under a shared vision along with formal governance policies and terms of reference, and with the support of an infrastructure team dedicated to the goals and activities of the network. Networks require regular and effective communication, routine reviews of goals and timelines and a balance between structure and creativity. Participants benefit from peer learning, knowledge sharing and the ability to test ideas with others working in similar situations, resulting in new knowledge. The creation of a critical mass of organisations can bring greater influence.

3. Capacity building in healthcare

The need to increase the capacity of health systems was a consistent theme across all NCDs, and research on health system responses could greatly improve services. Priority should be building capacity in primary and secondary care, with an emphasis on the prevention, early detection, diagnosis and treatment of NCDs.

To achieve this, guidelines and protocols need to be developed, staff trained and awareness increased. Technology could be used to support the integration of primary, secondary and tertiary care with appropriate referral mechanisms and to better monitor the quality of care at all levels. Patients need diagnoses and medicines to be accessible and available with incentives for follow-up and preventive care.

Participants discussed the issue that healthcare facilities in rural areas are often not satisfactory. Remote healthcare through electronic and mobile health can play a significant role in primary care provision, and electronic health records are vital for continuity of care. Asthma self-management, for example, can be improved with access to low-cost asthma medicines, and support from community health workers. It was highlighted that mental health needs to be integrated into primary care. The addition of a mental health module in education systems and additional frontline workers would increase knowledge and capacity.

4. Developing evidence-based prevention strategies

Advocacy is needed to encourage evidence-based policy development. Policy research on which interventions work best outside the health sector would help in the prevention and control of NCDs. Feeding research into policy and local practice could be improved through the creation of freely available databases containing data on the disease burden and intervention outcomes. The strengths of the private sector, NGOs, civil society and scientists could be leveraged to work with governments in controlling NCDs.

Research should focus on healthier and affordable food alternatives, on behavioural factors and on the social, economic and environmental dimensions of NCDs. Governments should be urged to tackle the commercial determinants of health in order to save lives.

Policy actions around smoking regulation and prevention along with reducing occupational exposures and air pollution are a priority. Existing laws need updating to include rules and regulations on the use of tobacco and related products, and these laws need implementing.

5. Technical innovations to address NCDs in South Asia

Technology is helping to overcome challenges in South Asian healthcare, and solutions that are effectively evaluated and shown to work can be more broadly applied and shared. Studies have shown that where digital health interventions are used with healthcare workers in controlled trials there are often positive results. However, when the same digital interventions are scaled-up, there can be challenges with uptake, difficulties for health workers and a lack of integration into health systems.

At present, regulators do not know how to assess and regulate digital health tools and diagnostics. Furthermore, around the world, thousands of apps use health indicators in marketing to encourage people to buy them. There is a need for standardised methodology for clinical validation and properly regulated technology that will give clinically accurate data.

Speakers at the workshop presented a number of promising digital health interventions in the region including:

- A digital tool for monitoring malnourished children given to public health midwives and monitored by public health doctors. It encouraged a better understanding of risk factors and helped with targeting interventions.
- SocioCardio, a two-piece device worn by an individual and connected to a cloud-based platform for the detection of arrhythmia. It helps the medical community capture clinically accurate data from a patient where there is smartphone coverage.
- The SmartHealth Platform which offers home-based risk factor screening for cardiovascular diseases, diabetes and kidney diseases by frontline health workers, risk-based triage and the means to refer high-risk patients to primary care clinics where doctors can review and manage them comprehensively. The algorithm prompts patients to follow their care plan.
- A public healthcare app for stroke surveillance that has been street tested and approved and is about to be rolled out to the public in Punjab, India. The general population app provides public information and can locate stroke-ready hospitals. A second component for hospitals allows doctors to upload data for vital signs and CT scans to a hub to get expert advice.
- The National Cancer Care Grid in India which allows patients to upload medical reports and scans to an expert within the grid with a median turnaround time of 24 hours. A virtual tumour board meet three times a week to provide support and expertise where smaller centres do not have specialists.
- A Sri Lanka National Cancer Institute app which uses innovation to address the challenges around capturing clinical and epidemiological data. The tool is user-friendly to facilitate end-user compliance, encouraging the collection of data related to cancer care delivery and outcomes of the disease.
- Sri Lanka's eIMMR system which collects countrywide NCD data through a single platform. It has a simple and user-friendly web-based data entry format with cloud hosting and data connection for clients. It has reduced the workload for healthcare workers and improved dataflow.

Conclusions and next steps

NCDs are a growing burden in South Asia, driven by rapid urbanisation, unhealthy lifestyles and ageing populations. Aggressive disease early in life is widespread, and some of the drivers are poorly understood. Research to identify and understand risk factors is essential for developing appropriate approaches in the region. There is a huge opportunity to collaborate to tackle these challenges with creative and long-term approaches.

Across the diseases that make up the burden of NCDs are common themes and interventions: early life targeting, diet, alcohol use, tobacco use, exercise, commercial determinants of health and indoor and outdoor air pollution. These could be approached with a common strategy. A lack of incidence data and fragmented healthcare systems will be harder to tackle and advocacy for policy approaches will require effort.

Digital technologies offer potential for prevention and treatment, and can often begin as smaller ideas that can be scaled-up if proven effective after evaluation.

The steering committee of the workshop suggested the development of a UK and South Asia Non-Communicable Disease Collaboration & Development Network (UKSANCDN) following the workshop. They proposed a network that would aim to build the evidence base and strengthen NCD research capacity across South Asia by providing training and building a regional network of NCD researchers and research institutions. The network would have a special focus on prevention strategies and scalable health system interventions, including health innovations. It would aim to establish a diverse network of collaborators from government, non-government and other organisations as well as researchers from a number of other countries. Funding could be sought from national, regional and international agencies to support the work of the network. Participants were asked to indicate if they would be interested in being part of such a network. The National Academy of Sciences of Sri Lanka offered to record interest in this initiative and develop the proposal further if there was sufficient interest.

There were many examples of successes involving people working together across disciplines, diseases and borders, and the attendees of the workshop agreed that there was value in working together in the future. It was agreed there is a lot that is not known about these diseases and that more could be done, and the two-day workshop generated discussion and optimism amongst the participants. Although there is not one simple solution, the engagement in the room suggested the beginning of greater collaboration and increased capacity in the region.

Annex 1: Workshop steering committee

Co-chairs

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