The Impact of Noncommunicable Diseases and their Risk Factors on Malaysia's Gross Domestic Product

Report on the launch of the Publication and Webinar held in conjunction with the launch of the Publication

September 8th, 2020

October 2020

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Background

The burden of Non-Communicable Diseases (NCDs) continues to rise in Malaysia, and as a response, the National Strategic Plan for Non-Communicable Diseases (NSP-NCD) was developed based on current shift of global strategies and mandates from the World Health Organization (WHO). First developed for the time period 2010 to 2014 based on WHO's Global NCD targets and the burden of NCDs in Malaysia, the NSP-NCD currently is for year 2016 until year 2025.

One of key strategy under NSP-NCD is the whole-of-government approach. Achieving this is an on-going challenge from the perspective of the Ministry of Health (MOH), for many reasons that will not be examined in this report. However, one of the key information lacking in Malaysia that is required for strengthening the engagement with ministries and sectors outside of health is the data on economic effects of NCDs and NCD risk factors beyond the health sector in Malaysia. The economic implications of disease burden are crucial for policy-making processes, including policy development and implementation in the prevention and control of NCDs.

In addition to the significant disease burden, NCDs are also associated with a huge cost burden to the Malaysian economy. In addition to the strain placed on the health sector by the growing numbers of the population seeking treatment for NCDs, there are substantial impacts on the wider economy through increased caregiver burden , productivity losses and declined quality of life.

With the support of the WHO Representative Office for Malaysia, Brunei Darussalam and Singapore, the MOH had commission the work and the publication of the document "The impact of noncommunicable diseases and their risk factors on Malaysia's gross domestic product" with Deakin Health Economics, Institute of Health Transformation, Deakin University, Australia.

Overview of Publication

The study quantifies the productivity losses and burden of disease costs that stem from the three largest NCD categories in Malaysia. The estimated costs are those incurred as a result of NCDs in the 2017 Malaysian population. The three NCD categories – namely cardiovascular disease, diabetes and cancer – are estimated to have cost the Malaysian economy RM 12.88 billion (high estimate) in terms of productivity losses arising from absenteeism, presenteeism or premature death in persons of working age. The estimated burden of disease cost is considerably higher at RM 100.79 billion (low estimate) or RM 302.37 billion (high estimate). These intangible costs relate to the value placed by individuals on the loss of life or loss of healthy life, whereas the financial costs arising from lost productivity entail tangible costs to the economy (to individuals, industry and government).

This study estimates the current burden pertaining to the 2017 population, and no projections of the future burden were undertaken. However, it can be reasonably expected that the cost burden will grow over time as the Malaysian population grows and ages. Also, these two cost estimates provide only a partial picture of the total economic burden of NCDs in Malaysia.

This study did not take into account direct health-care costs associated with the NCDs (e.g. inpatient admissions, outpatient visits, allied health, medications, laboratory tests, preventive care), carer costs, welfare payments or taxes foregone. The inclusion of health-care costs would make for a complete picture of the economic burden of NCDs in Malaysia.

A copy of the publication is available here or using the QR code below:

The Impact of Noncommunicable Diseases and their Risk Factors on Malaysia's Gross Domestic Product

Launch of the Publication

Joint Press Statement

The Director General of Health Malaysia, Tan Sri Dato' Seri Dr Noor Hisham Abdullah and the WHO Representative in Malaysia, Dr Lo Ying-Ru, released a joint press statement to mark the launch of the publication.

Cardiovascular diseases, diabetes and cancer cost nearly RM 9 billion productivity losses annually to Malaysian economy.

8 September 2020, KUALA LUMPUR – A new report from the Ministry of Health (MOH) Malaysia and the World Health Organization (WHO) reveal that noncommunicable (NCDs), particularly cardiovascular diseases, diabetes and cancer, cost the Malaysian economy upwards of RM 8.91 billion, equivalent to about 0.65% of the country's gross domestic product (GDP). The economic cost was estimated from the productivity losses due to absenteeism, presenteeism in the workplace and the premature death of working age population in Malaysia.

Aside from productivity losses, NCDs also place a serious health burden to countries resulting from disability and loss of healthy life years, called the burden of disease costs. This is an intangible cost that is estimated to be around RM 100.79 billion, equivalent to 7.35% of GDP.

The report released today, *The Impact of Noncommunicable Diseases and Their Risk Factors on Malaysia's Gross Domestic Product,* utilised data from the year 2017. The latest National Health and Morbidity Survey 2019 showed that the prevalence of NCDs in Malaysia continues to rise.

"Economic evaluations of NCDs allow us to understand how these diseases shape the life of our people," said Tan Sri Dato' Seri Dr Noor Hisham Abdullah, Director General of Health Malaysia. "NCDs are often associated with healthcare costs, but evidence such as this shows us how NCDs hamper the social and economic development of our country."

"Every disability and premature death from noncommunicable diseases is tragic because we know that they are preventable," said Dr Lo Ying-Ru, WHO Representative in Malaysia. "If we are unable to manage NCDs in the country, it will result in significant impact to health and economy. We need a whole-of-government and whole-of-society approach so we can turn the tide on NCDs and save lives and livelihoods."

Tobacco use, unhealthy diet, harmful use of alcohol and physical inactivity are modifiable behavioural risk factors that increase the risk of NCDs. In the report, unhealthy diet contributed to two third (68.9%) of the costs of lost productivity due to premature deaths from cardiovascular diseases (CVDs) while tobacco use contributed to more than one third (36.9%) of losses. Tobacco use also contributed to the highest proportion of the losses from cancer (15%).

Member States recognized the importance of tackling NCDs to achieve sustainable development. The 2030 Agenda for Sustainable Development called for the reduction of premature mortality from NCDs by one-third through prevention and control measures. The Malaysian Government has taken on this challenge by implementing the National Strategic Plan for Non-Communicable Disease 2016-2025 as well as associated national strategies and plans aiming at reducing risk factors for NCDs.

"It's time to invest in the prevention and control of NCDs. Governments and other stakeholders can reduce NCDs by applying cost-effective interventions or what we call 'best buys'," explained Dr Lo. "At the same time, individuals can also make a difference by changing their behaviours and making a conscious decision to live a healthier life. We should all work together to beat NCDs."

"Creating a supportive environment to support a healthy lifestyle for our people is essential in the war against NCDs," added Dr Hisham. "Malaysia has shown highest level of political commitment by creating a Cabinet Committee for a Health Promoting Environment to support the whole-of-government response to tackle NCDs. While we are working hard to address NCDs at its roots, clearly much more needs to be done."

Coverage by the Press on the 8th September 2020

The Star	Non-communicable diseases cost nearly RM9b annually in productivity losses, says Health DG
News Straits Times	NCDs cost nearly RM9bil in annual productivity losses, says Dr Noor Hisham
FMT News	Non-communicable diseases cost Malaysia RM9 bil in productivity loss a year
The Rakyat Post	Malaysia Loses ~RM9B A Year From Entirely Preventable Diseases
Code Blue	Cardiovascular Diseases, Diabetes, Cancer Cost Malaysia RM9 Bil Yearly In Productivity Loss: MOH, WHO
The Edge Markets	Non-communicable diseases cost nearly RM9b in annual productivity losses — Health DG
Berita Harian	Penyakit tidak berjangkit rugikan negara RM8.91 bilion
Malaysia Gazette	Ekonomi negara tanggung RM8.91 bilion untuk penyakit NCD
Bernama	Malaysia kerugian kira-kira RM8 bilion setahun akibat NCD
WHO	Cardiovascular diseases, diabetes and cancer cost nearly RM 9 billion productivity losses annually to Malaysian economy
From the Desk of the Director-General of Health Malaysia	Cardiovascular diseases, diabetes and cancer cost nearly RM 9 billion productivity losses annually to Malaysian economy
TV3, Buletin Utama	Penyakit TIdak Berjangkit, Negara rugi RM 8.91bilion

Webinar – Overview

Introduction

In conjunction with the release and launch of the publication, the Disease Control Division, MOH Malaysia and the WHO Representative Office for Malaysia, Brunei Darussalam and Singapore, had co-organised a webinar with the same title as the publication 'The Impact of Noncommunicable Diseases and their Risk Factors on Malaysia's Gross Domestic Product' on Tuesday, September 8th, 2020.

The main objectives of this webinar were:

(1) To provide a summary and overview of the findings of the report;
(2) To present the synthesis methodology and the limitations of the methodology and findings; and
(3) To discuss the consequences to the nation, economic considerations and policy recommendations.

The main target audience were MOH policymakers, MOH implementers, academics, health economists and the private sector. The agenda were as follows:

Time [MYT]	Topic	Speaker
10.00 – 10.10 am	Opening Remarks	**Ying-Ru Jacqueline Lo** WHO Representative to Brunei Darussalam, Malaysia and Singapore
10.10 – 10.20 am	Setting the Scene (Burden of NCDs and the Need for Economic Data)	**Feisul Idzwan Mustapha** Deputy Director (NCD), Disease Control Division, MOH Malaysia
10.20 – 10.50 am	Main Findings of The Impact Of Noncommunicable Diseases And Their Risk Factors On Malaysia's Gross Domestic Product publication (Overview of Methodology and Key Findings)	**Marj Moodie** Deakin University, Australia

Time [MYT]	Topic	Speaker
10.50- 11.35 am	Moderated Panel Discussion (Scope of discussions: Consequences to the nation, economic considerations, and policy recommendations)	Moderator: **Feisul Idzwan Mustapha** Panelist: **Jomo Kwame Sundaram**, Khazanah Research Institute **Aparnaa Somanathan,** World Bank **Rouselle Lavado**, Asian Development Bank **Rozita Halina Tun Hussein**, MOH, Malaysia
11.35 – 11.40 am	Closing Remarks	**Feisul Idzwan Mustapha**

Biography of Speakers and Panelists

MARJ MOODIE is Alfred Deakin Professor and Deputy Head of Deakin Health Economics, which is a team of around 35 health economists and one of the largest health economics groups in Australia. Her own research is specifically around economic evaluation and priority setting specifically related obesity and cardiovascular disease. She has been instrumental in promoting the application of ACE (Assessing Cost-Effectiveness) methodology to the economic evaluation of multiple interventions. She has undertaken a range of commissioned projects for the WHO in countries in the WPRO region, specifically related to quantifying the economic burden of NCDs, and the costs and benefits of the PENs program. Her research contribution is extensive; she has published more than 200 journal articles and been on grants in excess of $60 million. In January 2020, Professor Moodie received a Member of the Order of Australia award for services to education, and in particular, health economics.

JOMO KWAME SUNDARAM is a Research Advisor at Khazanah Research Institute and Visiting Fellow at the Initiative for Policy Dialogue, Columbia University. He was Professor at the University of Malaya (1986-2004), Founder-Chair of International Development Economics Associates (IDEAs), UN Assistant Secretary General for Economic Development (2005-2012), Research Coordinator for the G24 Intergovernmental Group on International Monetary Affairs and Development (2006-2012), and Assistant Director General for Economic and Social Development, Food and Agriculture Organization (FAO) of the United Nations (2012-2015).

APARNAA SOMANATHAN is the Practice Manager for Health, Nutrition and Population for East Asia and the Pacific at the World Bank. She has worked on health financing and health systems strengthening issues for over twenty years in a range of countries including Bangladesh, China, Estonia, Georgia, Indonesia, Kazakhstan, Sri Lanka and Vietnam. She has also worked extensively on the implications of population ageing on health financing and service delivery. Aparnaa read economics at Cambridge University and holds a doctoral degree in International Health Economics and Policy from Harvard University.

ROUSELLE F. LAVADO is a Senior Health Specialist in the Social Sector Division, Central and West Asia Department and is currently on short-term assignment at Economic Research and Regional Coordination Department. She is currently coordinating the research on economic impact of COVID-19 in the Philippines, Indonesia, and Pakistan. Prior to joining ADB, she was a Health Economist at the World Bank, working for several health projects and analytical products in Europe and Central Asia region.

ROZITA HALINA TUN HUSSEIN serves as a Senior Deputy Director of the Planning Division within the MOH Malaysia. In her role, Rozita oversees the planning and implementation of health financing reforms for Malaysia's health system, and most recently, the development of a non-profit government-owned volunteer health insurance agency for 2018.

Webinar Participants

A total of 519 individuals registered to attend the webinar, of which 312 individuals participated in the webinar. Majority of the participants were from MOH (45.1%), Universities (28.3%), Private sector [including pharmaceutical companies] (9.0%), International organisations (5.8%) and Others (11.8%).

Webinar – Proceedings

Opening Remarks

The opening remarks was delivered by Dr Ying-Ru Lo. She provided an overview of the increasing burden of NCDs globally, and that low- and middle-income countries (LMICs) are disproportionately affected. The prolonged disability due to NCDs causes reduced productivity and income, which in turn may trap people living with NCDs into poverty. There is already a WHO estimate of the economic costs due to the four main NCDs in LMICs, and WHO welcomes the publication of estimate for Malaysia – and WHO will continue to support the MOH to relevant stakeholders to reduce the burden of NCDs through multisectoral approaches.

Setting the Scene

Dr Feisul Mustapha delivered a short presentation titled 'Burden of NCDs in Malaysia & making the economic argument'. In summary, the key points of his short presentation were:

- The burden of disease for NCDs is high in Malaysia
- Based on the current trajectory of SDG-4 indicator and WHO NCD global indicators, Malaysia is currently off-target
- We need to be aware that our health is determined by much more that the healthcare services that we receive
- Unfortunately, the underlying determinants of NCDs in Malaysia – population ageing, income disparity and rapid urbanisation – are have a negative impact towards NCDs
- There are many dimensions of the impacts of NCDs – and this webinar will focus on the economic impact – with the hope of raising advocacy and awareness on this issue with sectors outside of health.

A copy of his slides is available here or using the QR code below:

Overview of the Publication

Prof. Marj Moodie presented an overview of the publication 'The impact of Non-communicable Diseases and their risk factors on Malaysia's Gross Domestic Product', acknowledging the contribution by Ms Huong Ngoc Quynh Tran and Ms Jaithri Ananthapavan.

The following are the key points of her presentation:

- The publication estimated the economic cost of NCDs arising from productivity losses and the disease burden; pertaining to the 2017 national population of Malaysia.
- The selected disease categories: Cardiovascular disease, diabetes and cancer; and the selected NCD risk factors: Tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol.
- Two methods were applied for estimating loss of productivity due to premature deaths from NCDs: human capital approach and frictional cost approach.
- The Global Burden of Disease dataset was used to extract data on the number of people with each NCD category and number of deaths by each NCD category or attributable NCD risk factor stratified by 5-year age and gender groups – the assumptions and limitations was briefly explained.
- The loss of productivity due to absenteeism and presenteeism were calculated by estimated lost working days multiplied by gender-specific mean daily wages.
- For estimating the monetary value of the disease burden (i.e. intangible costs relating to the value placed by individuals on loss of life or loss of healthy life) – disability-adjusted life years (DALYs) were used. DALYs for Malaysia in 2017 by disease by age and gender groups was extracted from Global Burden of Disease study – and for analysis, DALY was valued conservatively at one times GDP per capita (RM42,834).
- A summary of results were also presented following each methodology section.
- The strengths of the publication: It drew on country-specific data to build estimates, such as epidemiological data from Global Burden of Disease study, the local labour force participation rates, and the gender specific mean wage rates. A user friendly Excel workbook that can be updated when better data relevant to Malaysia becomes available was also delivered to MOH Malaysia.
- The limitations included: Reliance on overseas studies for average number of days of work lost due to specific NCDs , time lost whilst at work due to specific NCDs, average wage multiplier and average friction period (time required to replace a worker who retires from the workforce).

A copy of her slides is available here or using the QR code below:

Panel Discussion

The panellists for this session were Prof. Jomo (JS), Dr Aparnaa Somanathan (AS), Dr Rouselle Lavado (RL) and Dr Rozita Halina (RH) and it was moderated by Dr Feisul Mustapha (FM).

What is the state of human capital in the region, particularly in Malaysia?

AS provided a snapshot of human capital in the ASEAN region as per the World Bank Human Capital Index (HCI). The index is a summary measure of the amount of human capital that a child born today can expect to acquire by age 18, given the risks of poor health and poor education that prevail in the country where he/she lives.

She also highlighted that the average HCI for the ASEAN region is 0.56, whereby this shows that there are shortcomings in human capital investment. This means that the average productivity in adulthood of an average child born in ASEAN will only reach 56% of his/her full potential. AS also emphasised that there is wide variation in the ASEAN region. An average child born in Singapore today will come close to reaching his/her full potential, which is top end of the range. In some countries, the average child will reach less than half of their full potential. In Malaysia, the HCI is 0.62. This means children in Malaysia are only 62% as productive as they could've been, given full education and health opportunities.

AS also spoke about what the HCI tells us about the status of various components of human capital in the region. In terms of survival, AS drew example from the high level of child survival in ASEAN countries, whereby 98% of children in ASEAN region will survive past their 5th birthday. HCI also includes the adult survival rates and measure of productivity of adults, which is more sensitive to NCDs. In Malaysia, there has been limited or slow progress in average adult life expectancy and poor progress in annual change in avoidable mortality.

AS also drew reference from another measure which is childhood stunting. The average burden of stunting burden is approximately 30%, which is high. Another human capital index component is related to learning. Overall, in the Asia pacific region, school-going rates are high, but the quality of learning falls short of expectation. In terms of learning, on average11.8 years of education in the ASEAN region is equivalent to 8.6 years of learning in a top performing school. It was also mentioned that 21% of children in the region cannot read and understand a short story at the end of primary school, which means they are getting to school but not learning enough.

AS concluded by emphasising that the state of human capital is largely about investment in children and economic research shows that these investments have the highest returns, far exceeding investment in infrastructure and physical structure

RL zeroed into the state of NCDs in the Asia Pacific region whereby NCDs are a major cause of death. Within ASEAN, with the exception of Singapore, Malaysia is doing relatively well as compared to its neighbouring countries. However, when compared to high income countries, Malaysia is trailing behind in terms of premature mortality due to NCDs. RL also re-emphasised that the major cause of premature death is attributed to diet, raised blood pressure and tobacco. She not only spoke about the socio-economic implications of NCD but also introduced the concept of equity. She re-iterated that NCDs disproportionately affects the poor. In urbanised areas, access to dietary and physical activity is poorer for those from the lower socio-economic group. RL highlighted the need to examine the equity angle to any policy and regulations related to NCDs.

JS emphasised that despite certain concerns regarding methodology, the point of the report was to highlight the impact of NCDs. JS also stressed that the tobacco consumption and obesity are the largest sources of economic losses globally. He reiterated that the research produced values peoples' lives differently whereby a migrant worker who is paid less is assumed to produce less, a measurement that commensurate with the income of a person. It does not account the fact that you can have productive people who are poorly paid due to various reasons.

However, JS emphasised that the intent of the study and webinar are especially important and that while Malaysia is on the verge of becoming high income country, one would think there would be activities that commensurate to human wellbeing.

JS highlighted that the indicators of malnutrition, for example, which is especially important, but is often not highlighted. He gave examples of interventions that can be implemented in the first 1,000 days, particularly in micronutrient deficiencies in the prenatal and post-natal period. He reiterated that Malaysia has a very impressive record from the 1960s which provided midwifery support to during ante- and post-natal period to address these issues.

JS also gave another example of intervention to address malnutrition, which has been less successful in Malaysia, the School Meal programme. School meal programmes globally have been remarkably successful, particularly when they have been well advised by nutritionists and dieticians. Unfortunately, school meals programmes are also driven by food and beverage industry who are anxious to sell their products, which are not necessarily the most nutritious products. JS highlighted the double burden whereby on one hand, we have micronutrient deficiencies and on the other hand, diet related NCDs.

JS also highlighted the extent of anaemia in Malaysia, especially during pregnancies, as an issue that needs to be prioritised. He emphasised the need to focus on morbidity and not just mortality of NCDs.

RH stressed that premature mortality in Malaysia is a serious issue and NCDs are no longer an issue of the aged but also the young. She emphasised that Malaysia is clearly not achieving full potential, in terms of life expectancy. She highlighted the example of PeKa B40, whereby it was a programme to encourage NCD screening among the B40 population. The programme also supports the B40 population in terms of health equipment, such as stents for angioplasty and she drew example about how many of the patients who require these helps are in their 40s.

RH also stressed that NCDs are a silent disease, that has resulted in lower positive actions by individuals. Hence, it is also important for society and employers to share that responsibility. She emphasised the need to highlight and develop collective sense of responsibility to prevent and control NCDs.

Economic consequences of NCDs are of critical importance. How often does it get discussed by people outside the health background?

JS stated that his current circle of economists barely discuss NCDs, however the momentum appears to be growing especially after consequences of COVID-19. He stressed that when he was working in the UN system, these kinds of estimates were their focus of work. However, he reiterated that there was a systemic bias to the methodology because it implies that OECD countries are losing far more than developing countries.

He pointed out that many of the problems due to NCDs are self-inflicted, whereby we have adopted new forms of food culture (preparation and eating). For many years, Malaysia subsidised sugar and there was a heavy reliance in salt, especially for food preservation. There is also a growing issue with fast food, whereby deep-fried food conceals the degree of freshness of food. Other issues such as toxic agrochemicals in food production, the use of antibiotics in animal and fish breeding are all variety of issues that need attention.

JS also pointed out how Malaysia allowed a multibillion-dollar vaping industry to grow, an issue that should have been nipped in the bud. He stressed that school meal programme needs to be highlighted by MOH.

He reiterated that COVID-19 has forced us to think about supply chain issues and the major disruptions surrounding these issues. We can use this opportunity to highlight issues surrounding agricultural produce, for example. There are new concerns regarding food security and climate change which allows an opportunity to reset things and this must be a whole of government approach.

He emphasised that MOH also needs to focus financing of health and healthcare. The burden among the younger generation in Malaysia is alarming. For example, the

ethnic Chinese in Malaysia, were not particularly known to be overweight. The current food culture has exacerbated the current issue of NCDs in different population.

AS spoke about her conversation with her fellow economists and stated that Ministries of Finance (MOF) do not often discuss NCDs. The World Bank works with MOFs in several areas where it has been possible to resonate with NCD related issues, especially in terms of taxes and revenue raising efforts such as sugar taxes. She drew an example from the Philippine's sin tax. Another example she spoke about was the work surrounding ambulatory care, although not all are related to NCDs but a lot of them are. Ensuring right level of access to ambulatory care and good primary care can lead to reduced hospitalisations due to NCDs.

RL positively stated that NCDs are being discussed more so now than ever before. She described the work of ADB, for example that focuses a lot on infrastructure development. Examples cited were as follows:

1. Urban planning and NCDs: Development of liveable and healthier cities has led to embedding of infrastructure to incentivise people to exercise in the planning of the city.
2. Road safety initiatives.
3. Agricultural projects: food desserts exist not only in developed but also in developing countries, especially in poor areas. Policy triggers that address food desserts will address health as well.

As for the report, aggregation of data by my formal/informal sector might be useful as a measure of equity without a blanket estimation. An evaluation based on earnings and sensitivity analysis will also be helpful.

RH emphasised that Malaysia needs to be part of the global conversation, to develop capacity and to be more involved. She related a personal experience of being disappointment when she approached economic agencies but most were not interested in health, but more in other areas of development. She also reiterated the need to develop the skillsets to make the right argument with external agencies.

RH re-emphasised FM's presentation that healthcare only determines a small proportion of health outcomes hence social determinants needs to be strengthened. RH stressed that often in health, only the direct healthcare costs gets spoken about. She also echoed that we need to move beyond prevention and control of infectious diseases, which are our strong points, and into NCDs care.

RH stated that in her engagement with MOF and Economic Planning Unit, there is interest in the impact of NCDs in productivity and society. She also stressed that it is our (MOH) responsibility to prime these agencies that NCD prevention and control, while it is not immediate cost saving, but will benefit in the long-term. It needs to be

highlighted that we need to spend now to save in the future. The challenge and the battle of NCDs does not solely rely on MOH but the whole of government and whole of society.

COVID-19 has shown the importance of finding the delicate balance between saving lives and saving livelihoods. How do we increase the spotlight on the economic argument of policy and regulatory interventions surrounding NCDs prevention?

JS took a stand that there is a huge opportunity especially with what is happening due to COVID-10, which has forced us to rethink a lot of issues, especially in terms of our economic arrangements. He stressed that lives and livelihood is a false dilemma, because if you were to choose livelihood, we are compromising lives.

JS emphasised that we are not learning enough from East Asia. Supply chains that are currently disrupted, cannot be assumed to revert to status quo and that this is an opportunity to produce our food safely.

JS cited that the number of children who depended on school meal programme have also had their access to healthy meals disrupted. The emphasis is on whole of government and whole of society approach. MOH needs to do far more in terms of public health education and changing public behaviour. For example, popular programmes can be used to spread subtle health messages for the public to learn and influence healthy behaviours. At the level of income that Malaysia enjoys, there should not be a hindrance for NCD prevention. He echoed that we need to seize this opportunity to convey all this to the public effectively by effective communications.

Closing Remarks

RL stressed that NOW is the time for NCD programmes to take limelight, exiting the COVID-19 pandemic. She highlighted two points:

1. Technology is becoming more accessible. For example, telemedicine and big data is becoming mainstream during COVID-19. We need to seize this opportunity to highlight NCD programmes.
2. Working against NCDs require all of government and whole of society approach.

AS produced two compelling arguments that MOH can make for NCDs, particularly exiting COVID-19. Economic growth is expected to decline, it was 4.5% in 2019 to expected to decline to 1.8% in 2050, and a third of the decline will be due to demographic changes. Malaysia is a rapidly aging country. Healthy aging and keeping NCD controlled is important for two reasons; it keeps workers longer in the workforce and reduces need for long term care. She echoed that early onset of NCDs leads to disability and leads to long term care expenditure which makes the efforts to controlling NCDs now, an important one.

RH highlighted the need to develop media support, both mainstream and digital media to address the silence of this area in health. She also stressed that we need to go beyond health camps and targeting everyone. PeKa B40 performs targeted health screenings in socially disadvantaged population and in those who are less likely to come for screenings. She also echoed that we need to work with employers to access to factories and companies to expand the scope of screening as GLCs are spending a lot on treating their employees with NCDs,

Webinar – Q&A

The questions and comments which was received in the Q&A box together with the responses are shown in the respective sub-headings below. This includes responses provided during the Q&A session by panellists and responses for questions not addressed during the webinar were prepared by MOH after the webinar.

Publication: Methodology and Analysis

	Questions/Comments	Responses
1.	[There were several questions relating to the methodology and results of the publication]	This information is available in the publication itself.
2.	How about productivity costs of care takers? Families of patients may forgo their productivity at the expense of caring the patients. Is there any data on caregiving cost for people living with NCDs?	This was not estimated in the publication.
3.	Is there a correlation between the 5 year survival rates of various NCDs and loses?	We didn't conduct a correlation analysis for this publication.
4.	Is there inequality between the poor and the non-poor in terms of economic or productivity losses due to NCDs?	Unfortunately, we did not conduct this analysis.
5.	Is there any way to demarcate the costs/losses by type of worker e.g. by occupation type, etc.?	The analysis for this publication did not disaggregate based on types of occupation or income.
6.	Besides productivity loss cost and burden of disease cost as explained by Prof Marj Moodie, is there any MOH data for healthcare cost for NCD?	Prof Moodie's work only answers question partially, the indirect costs of NCDs. We will be embarking on a further project to examine the direct costs of NCDs to complete the picture. Currently, we have a publication on the direct medical cost for diabetes care for Malaysia

Policy and Regulatory Interventions

	Questions/Comments	Responses
1.	How are things different now for the policy and regulatory interventions? What is the level of non-health stakeholder engagement in Malaysia since 2016? Is there a cross-ministry effort to alleviate NCDs in Malaysia beyond the sugar tax?	From the MOH perspective, this is still an on-going challenge. Achieving a true "whole-of-government" approach is not easy in Malaysia. We are making some headways e.g. smoke free restaurants, sugar-sweetened beverages (SSB) tax - but there's more that needs to be done for policy and regulatory interventions. Although the is a Cabinet-level committee called the 'Cabinet Committee for a Health Promoting Environment' chaired by the Deputy Prime Minister (when it was established) to operationalise the National Strategic Plan for Non-Communicable Diseases (NSP-NCD) – achieving agreement on some of the proposed policy and regulatory interventions have proven to be challenging as well. Advocacy work across different ministries and government agencies would need to be strengthened.
2.	With so many interventions to tackle in early life, how does a government decide which particular to focus on?	Priority setting not only takes into account the evidence base, but also perceived acceptance by the policy-makers and target population, as well as the feasibility (including resources required).
3.	There seems to be a strong push to validate health policies through economic lens despite the fact that these policies are meant to save lives and push for healthier, and inevitable, more productive lives. Can the panellists give their opinions on this sentiment and whether this is a result of a lack of appreciation for health-related indicators?	Part of good advocacy work is finding 'commonality of interests'. Health issues are typically seen to be under the responsibility of MOH – and is a key challenge in achieving the whole-of-government approach.
4.	How is the MOH planning to utilise the findings of this research? Are these indirect costs recognised by MOH because usually only direct costs seem to be accounted for.	It is not a question of recognition, but more the availability of the information. MOH commissioned this report to explore the indirect costs of NCDs to assist us with planning efforts and advocacy work.

	Questions/Comments	Responses
5.	Unhealthy diet is a common risk factor for many NCDs. The cost for a pack of 6 apples is more expensive than a set meal at a fast-food restaurant. It is also extremely difficult to get hold of a salad counter. We need interventions to address these issues.	The living environment and wider determinants of health influences behaviour. MOH is working with external agencies towards addressing these factors.
6.	Has Ministry of Finance or related ministries ever discuss with MOH regarding the NCDs issues impact on national economy?	The issue was discussed in the panel discussion, and the panellists felt that often, only issues that are revenue generating are discussed.
7.	Is there a specific collaboration with Ministry of Education to encourage healthy lifestyle among children? Many are overweight from calorie-dense food easily available and sedentary. The new normal in schools seems to be ignoring the need for children to be physically active.	MOH continue to work closely with MOE on various health-related issues for school-going children. However, we agree that implementation can be further strengthened, and this will require adequate resources.
8.	Malaysia has a lot of prevention and treatment programs for NCDs. How about starting "investment cases" to catalyse attention and more directed and targeted funding or investment for these programs.	Agree. Hence the need for economic data for NCDs in Malaysia. We see this publication as a first concrete step in moving in that direction. More work needs to be done and we welcome collaborators. MOH also relies heavily on WHO's 'best-buys' for NCDs.
9.	Health should be MANDATORY part of non-health policies e.g. urban planning. I was wondering if the MOH is currently working on making sure all government policies take into account its impacts on health?	We agree that health considerations must be taken into account for all policies in the country i.e. 'Health-in-all Policies' (HiAP). However, implementation continues to be a challenge.

	Questions/Comments	Responses
10.	We need to start proper education on good lifestyle habits with our children, the future of tomorrow. Start with revamping canteen food choices, teach children how to read food labels, the govt should stop allowing misleading promotion of 'healthy' foods like Milo etc. We need this in addition to educating adults.	We agree with this statement – and MOH is using those strategies to focus on the younger population. Implementation of programs and activities however remains a challenge.

NCD related data for Malaysia

	Questions/Comments	Responses
1.	What types of cancers are more prevalent in Malaysia and what are the main causes in addition to major NCD Risk factors	Please refer to the 2012-2016 Cancer Registry Report
2.	What is the major DALYs in Malaysia, considering three major NCDs account only for 33%?	Approximately 75% of DALYs in Malaysia were attributable to noncommunicable diseases (Group II), with ischaemic heart disease, cerebrovascular disease (stroke) and diabetes mellitus being the top 3 burden contributors. Please refer to the Report of Malaysia Burden of Disease and Injury Study (2009-2014)
3.	Have we stop collecting data on physical inactivity prevalence? The % was high based on 2010 data you presented.	Data on level of physical activity is part of the National Health and Morbidity Survey (NHMS) for NCD risk factors – conducted every 4 years – the latest NHMS 2019.

General questions/comments on NCDs

	Questions/comments	Responses
1.	Mental Health has a huge impact on NCD. For example, stress can a huge impact on the pathophysiology of Diabetes. In this case, both mental health and NCD can have effect on work	There are some general data on Mental Health in the National Health and Morbidity Survey (NHMS). There are some limited studies on mental health and chronic diseases, and from the MOH perspective, this is an area that we are definitely looking at. MOH would welcome opportunities to collaborate.

	Questions/comments	Responses
	performance and productivity. Does Malaysia have any data and/or policy and programs on mental health pertaining to NCDs.	
2.	Community empowerment and strategic communication is vital to combat NCDs. It should be managed like how we managed COVID-19 i.e. involvement of whole Government with community participation - then fight against NCD can be successful.	Fully agree – and MOH is currently taking that general direction of strengthening community empowerment and strategic communication.
3.	Great discussions on the productivity e.g. presenteeism. National wealth and health depends on personal health, personal health depends on personal internal/external motivations, internal motivation depends on personal value systems. Health targets change according to the environmental demands such either disasters/wars. Fair social systems and safe community dwellings are other crucial external motivations to personal health, innovation and creativity (health at its peak).	We agree with the statement.