

EVENT REPORT

Roundtable Discussion

Managing the national cost of cardiorenal metabolic diseases: A focus on Diabetes and Stroke

20 September 2023

The Galen Centre for Health and Social Policy organised a roundtable discussion on managing the national cost of cardiorenal metabolic diseases, focusing on diabetes and stroke.

The objective of the meeting was to help produce and compile urgent recommendations which can be presented for serious consideration by government and non-government stakeholders as part of ongoing healthcare reforms.

The event was hosted by the Galen Centre with support from Boehringer Ingelheim (Malaysia). This in-person event was attended by over 40 government, non-government, and private sector stakeholders, academia, and clinicians.

Introduction

A recent report, "Direct Healthcare Costs of Non-Chronic Diseases in Malaysia," by the Ministry of Health and the World Health Organisation is stark. **Diabetes has reached epidemic proportions, affecting 3.9 million Malaysians and projected to hit 7 million by 2030**, costing the government an estimated RM 4.4 billion annually.

Primary care costs for diabetes in 2017 were three times higher than cardiovascular disease and 221% higher than cancer, despite diabetes accounting for only 6.73% of hospital discharges.

Stroke is another growing concern. Not only is it prevalent among the aging population, but younger people are now also falling victim to it. **The financial toll of stroke management in Malaysia is approximately RM 230 million per year, with lifetime treatment costs of RM 36,000 to RM 37,000 per patient.**

These costs go beyond direct medical expenses, with patients and their families bearing the brunt. From disability and rehabilitation to logistics and equipment, the burden is substantial.

Resources must be reallocated, prevention strategies enhanced, and policymakers urged to take immediate action. With an aging population and the rising number of strokes among young adults, it's time to confront the impending healthcare crisis head-on.

Beyond medication and hospital bills, recurrent therapy sessions become a substantial and unforeseen financial struggle for many survivors. Traveling to the hospital for crucial treatments accumulates costs, including transportation, meals, and health aids.

As stroke severity rises, the need for medical support and outpatient therapy surges. Some may even explore alternative therapies.

Approximately 60% of the expenses for post-stroke patients and their families are attributed to attendant care and medical equipment. Over half of stroke survivors need caregiver assistance, adding a significant financial burden not represented in traditional medical costs.

In Malaysia, the delay in seeking immediate treatment also hampers the chances of regaining full independence post-stroke. Urgent action is necessary.

As the country faces an aging population and a rising number of strokes among young adults, the need for greater support and resources in diabetes and stroke strategies becomes evident. Effective prevention and management are crucial for the community's well-being.

Opening Address - Managing the national cost of non-communicable diseases in Malaysia

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Non-communicable diseases (NCDs) present a formidable challenge to Malaysia's healthcare system, impacting both public health and the economy. According to the Department of Statistics Malaysia in 2022, the top causes of death in Malaysia are attributed to NCDs. Ischemic heart disease, stroke, various types of cancer, diabetes mellitus, hypertensive heart disease, and chronic obstructive pulmonary disease (COPD) are among the leading contributors.

The World Health Organisation (WHO) has established NCD Global Targets to combat the rising NCD burden. These NCDs encompass cardiovascular diseases, cancer, diabetes, and chronic respiratory ailments, posing a significant public health concern worldwide.

Malaysia's response to this health challenge involves a comprehensive approach outlined in the recently approved Health White Paper (HWP). The HWP aims to transform the healthcare system from a focus on "Sick Care" to "Healthcare & Wellness," catering to the nation's growing health needs while ensuring affordability and financial protection for all, especially the low-income and at-risk groups.

In line with the HWP, the Malaysian government introduced the *Agenda Nasional Malaysia Sihat* (ANMS) to promote the health and well-being of Malaysians. ANMS addresses the increasing burden of NCDs by advocating healthy lifestyles, disease prevention, and early detection and treatment.

The National Health Screening Initiative (NHSI), launched in 2022, aims to raise public awareness about regular health screenings. These screenings are vital for early NCD detection, reducing complications, and lowering healthcare costs.

Community participation is crucial in the battle against NCDs. Programmes like *Komuniti Sihat Pembina Negara* (KOSPEN) empower communities to adopt healthy behaviours, including non-smoking, balanced nutrition, and regular physical activity, to reduce the incidence of NCDs

and their risk factors. Enhanced Primary Health Care (EnPHC) is another initiative focusing on diabetes, hypertension, and hypercholesterolemia, offering preventive measures and patient-centred care.

The Ministry of Health (MOH) follows the Ottawa Charter's principles by emphasising prevention, early detection, and effective management of NCDs through the National Strategic Plan for Non-Communicable Diseases (NSP-NCD) 2016–2025.

The goal is to improve public health and reduce the NCD burden. To address the cancer burden, Malaysia has its National Strategic Plan for Cancer Control Programme (NSPCCP), which covers prevention, screening, early detection, treatment, palliative care, and research.

In conclusion, Malaysia's holistic approach to NCDs includes prevention, early detection, NCD management, and risk factor reduction, with the potential to enhance public health and well-being.

Panel Discussion – How can we work differently towards improving effective diabetes prevention, management, and care for better outcomes?

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Lifestyle interventions for reversing diabetes

Malaysia faces a daunting diabetes burden, with an alarming 4.4 million cases and counting. However, the emphasis on accessible medications and lifestyle intervention programmes remains insufficient. The primary care sector plays a pivotal role, managing approximately 1.3 million of the nearly 2 million diagnosed diabetics in the country.

Recognising the magnitude of the diabetes challenge, it's important to direct more resources towards primary care diabetes management. As the nation seeks to tackle this

growing epidemic, it's essential to support primary care physicians and invest in structured, intensive lifestyle programmes that empower individuals to lead healthier lives, ultimately preventing complications and reducing the financial burden on the healthcare system.

The MOH's pilot project for raising awareness and promoting lifestyle interventions offers a promising path forward, with the aim of making effective medications accessible to prevent chronic kidney disease (CKD) and cardiovascular complications.

Diabetes and renal disease

Malaysia is grappling with a disproportionately large population requiring dialysis due to renal disease.

Diabetes often acts as the primary cause or a significant coexisting condition for individuals battling renal issues, prompting questions about the patient profile in dialysis centres. Data reveals that approximately 30% of end-stage patients are diabetic when they commence dialysis, and regrettably, less than 50% of these individuals survive beyond five years.

However, it's not just the financial burden that raises concerns; the psychological, emotional, and social impacts are equally significant.

Chronic renal failure casts a devastating shadow, affecting not only individuals' physical health but also imposing a staggering economic strain on the nation. With over 50,000 people currently reliant on dialysis in Malaysia, this number is expected to rise, sapping billions from the country's finances.

Many patients enter dialysis programmes late and without proper planning, underscoring the urgent need for improved screening and education to effectively detect and manage diabetes and related renal diseases.

Establishing comprehensive, organ-specific programmes for conditions like heart disease and neurological disorders is crucial, with a dedicated kidney programme being equally vital.

Addressing the challenge of health literacy

Health literacy is a critical but often overlooked aspect of public health, and in Malaysia, it's a significant challenge. The frustration expressed by the former Health Minister, KJ, highlights the urgency of addressing this issue, as one-third of the population falls under the category of being health illiterate. These individuals face difficulties in understanding crucial health information, relating it to their

own lives, and adopting healthy behaviours. The MOH has initiated numerous programmes and campaigns to combat NCDs. However, to bridge the gap in health literacy, there is a need to further strengthen education and promotion efforts.

Effective health communication

Effective communication has been pivotal in the response to health issues, especially during the COVID-19 pandemic.

The Ministry of Health's Facebook page has played a crucial role in conveying health-related information to the public. This platform has demonstrated the potential for improved communication strategies to be more persuasive and understandable to the general public.

To strengthen preventive efforts, it is vital to enhance communication and promote a better understanding of health information.

Public-private partnerships have shown promising results, with substantial funding and resources allocated to these initiatives. The collaborative approach to health communication has proven to be more effective, making use of multiple resources, including social media platforms.

Empowering through screening and early detection

Early detection and screening for chronic diseases like diabetes and hypertension are vital for preventing severe health complications.

Malaysia introduced its National Health Screening programme in 2022, with an aim to screen approximately 1.5 million adults each year, focusing on chronic diseases. Promoting the importance of regular screenings is essential to demystify the process, encourage individuals not to fear it, and for them to utilise and take advantage of existing screening initiatives.

Collaborations with organisations like SOCSO and programmes such as KOSPEN have expanded screening efforts, making health checks more accessible. To ensure broader community outreach and accessibility, engaging with NGOs and community programmes has become a necessity.

The expansion of community engagement initiatives can help bridge the gap in early detection and disease prevention, especially among those with limited health literacy.

Behavioural change in public health

Convincing individuals to modify their behaviours for better health is a daunting task and remains one of the toughest aspects of public health.

In the pursuit of healthier lifestyles and disease prevention, opportunities are arising from successful public health outreach programmes, such as those initiated by the Selangor state government. These programmes have identified individuals at risk of diabetes and implemented interventions effectively.

According to members of the Academy of Family Physicians of Malaysia, to address the root causes of the rising prevalence of diabetes, understanding the complexities of behavioural change is crucial.

Efforts should focus on not only addressing symptoms but also exploring and addressing the underlying factors contributing to the diabetes epidemic. To make a difference, a comprehensive strategy is required. Starting with education on healthy lifestyles in various settings, including schools, homes, and workplaces, is essential.

Primary care doctors, whether in government or private practices, must be equipped with motivational interviewing skills to guide patients effectively. Moreover, coordination between primary care and specialists, particularly in private clinics, is crucial for monitoring and supporting patients.

The key to success lies in changing behaviour, not only among patients but also within the healthcare profession itself. The healthcare community must be aligned in its approach to tackle the diabetes epidemic effectively.

The prediabetes population

Estimates from 2021 suggest that the country now faces a prediabetes burden equal to its diabetes burden, with roughly 4 million individuals classified as prediabetic and 4 million as diabetic.

The 2019 National Health and Morbidity Survey indicated a 23% prediabetes figure based solely on fasting tests, which may have missed cases of prediabetes resulting from glucose intolerance. To address this issue, comprehensive screening is essential to detect prediabetes and early diabetes in asymptomatic individuals.

Although such interventions come at a cost, it's crucial to develop practical strategies that individuals can implement immediately, whether independently or within peer groups and communities.

Diverse faces of diabetes

Diabetes has become a major health concern in Malaysia, with two distinct categories emerging amongst diabetics.

On one hand, there's a group with high insulin resistance, presenting complications at a much earlier age. This highlights the need for early identification and intervention strategies. Conversely, there's a mild group of diabetics, who seem to have an easy-to-control condition with few complications.

Recognising these different subtypes can empower primary care doctors to manage patients more effectively by providing individualised treatment based on genotype-phenotype associations.

Optimising medication and primary care

While the endocrinology departments in MOH hospitals only glimpse the tip of the diabetes iceberg, primary care physicians are at the front lines, bearing the weight of NCDs on their shoulders.

Their unique position provides them with the opportunity to be actively involved in initiatives that address diabetes comprehensively, spanning primary care and hospital settings. Despite the challenges they face, including resource constraints, these clinicians are instrumental in managing and caring for the vast number of individuals affected by diabetes.

A critical issue in diabetes management is ensuring that individuals currently receiving treatment are indeed managing their condition effectively. The spotlight has turned to medication choices, emphasising the significance of early intervention with medicines that are proven to make a substantial difference in cardiorenal outcomes and even the prevention of early death.

While the focus on lifestyle interventions remains essential, there's a growing recognition that a select group of at-risk individuals requires early access to these medications. The primary care system plays a crucial role in this regard, needing more comprehensive access to these medicines to ensure better long-term outcomes.

The ten-year gap before most patients reach specialist care and receive access to these medications, poses a significant challenge that demands a solution.

SGLT2 inhibitors: A new frontier in diabetes care

The importance of new drug classes in managing diabetes complications has come to the forefront. Specifically, SGLT2 inhibitors have shown promise in protecting the kidneys, the heart, and reducing mortality.

A concerted effort involving medical professionals from various specialties, including endocrinologists, nephrologists, cardiologists, internal medicine physicians, and primary care doctors, is underway to implement these drugs in a more comprehensive manner.

The aim is to treat half a million diabetics in Malaysia, with primary care playing a pivotal role, ultimately saving billions on the costs of complications in the long run.

Obesity crisis in Malaysia

One in five adults in the country has diabetes, with obesity as a major contributing factor among the young population. Shockingly, one in two Malaysian adults is either overweight or obese. A participant in the roundtable discussion, highlighted the urgent challenges that needed to be addressed.

Firstly, it is crucial to convey to patients that obesity is not merely a cosmetic issue but a chronic disease. Many individuals seek medication or medical certificates as a quick fix, often overlooking the severe health implications associated with obesity. Changing this perception is the initial step in addressing the problem.

Secondly, the issue of food insecurity must be acknowledged. Healthier lifestyles often require access to better foods, but for many, financial constraints and lack of availability make it challenging to maintain a nutritious diet. This particularly affects the B40 urban communities and calls for more comprehensive solutions addressing both food accessibility and quality.

Lastly, addressing obesity demands a multi-sectoral approach that goes beyond the MOH. Cooperation between various ministries, such as Education, Transportation, and Communication, is essential to promote healthier living, advocate for necessary policies, and encourage changes in public behaviour.

Obesity prevention requires a combination of hard and soft policies, as observed in other countries, such as sugar-sweetened beverage (SSB) taxes. Revising existing policies and considering new approaches is necessary to effectively combat this escalating health crisis.

Tackling diabetes

One of the strategies implemented is the taxation of sugar-sweetened beverages (SSB), with plans to increase the tax further.

This move is part of a comprehensive effort to address the growing obesity crisis, especially among the younger generation.

The Nutrition Division has launched programmes targeting schoolchildren, emphasising the importance of collective action and community engagement. It is evident that a collaborative approach involving public health professionals, clinicians, and non-governmental organisations is essential to prevent and manage the risk factors associated with obesity and diabetes.

In Malaysia, it is evident that prevention and management of diabetes require more attention. While screening and diagnosis are improving, there is a concerning delay in linking individuals with effective treatment.

The focus has predominantly been on insulin-based therapies, but recent advancements in diabetes treatment, such as SGLT-2 inhibitors, have the potential to be game-changers. Nevertheless, there is a lack of specific budget allocation for diabetes treatment at both the ministry and hospital levels. Improving the control of diabetes, as measured by HbA1c levels, is an ongoing challenge.

Primary care doctors are doing their best with the resources available, but more needs to be done to raise the numbers of patients with good glycaemic control. It's crucial to remember that diabetes management is not just about sugar control; it also involves addressing other risk factors.

Access to better drugs is essential, but it requires collaboration between various stakeholders, including pharmacists, clinicians, and policymakers, to ensure that new and more effective treatments become accessible to a broader segment of the population.

Reimagining healthcare costs for a healthier future

Assessing national finances, it's concerning to note that around 70% of healthcare expenditure is currently directed towards managing NCDs.

While the direct expenses are substantial, the full extent of indirect costs remains obscured, underscoring the need for a more in-depth examination of the financial implications.

Denial and fatalism often obscure the perception of health at both policy and individual levels, fostering a sense of normalisation even when patients observe high blood glucose levels.

A proactive approach must be explored, such as implementing a nominal fee for diabetes care, collectively shared by individuals with the means to contribute.

This funding can enhance access to better medications, glucose monitoring, and lifestyle intervention programmes, ultimately empowering individuals to assume responsibility for their health and actively engage in disease prevention and management.

Taking inspiration from the Australian model where patients make a fixed contribution to the cost of their medication, cost-sharing represents a valuable strategy to encourage patient accountability. Research indicates that when patients have a financial stake in their treatment, they tend to be more compliant and value their medications more.

This approach can be extended to various NCD treatments, including diabetes, alleviating the healthcare system's financial burden.

Furthermore, there is a growing demand for incentivising healthcare professionals to attain improved diabetes management, mirroring models used in specific UK National Health Service clinics. These discussions underscore the multifaceted nature of addressing diabetes comprehensively, encompassing both preventing new cases and optimising the management of existing ones.

NCD specific budget

In Malaysia, there's a significant budget allocated for dialysis, but diabetes, a major contributor to kidney disease, lacks its own dedicated budget.

A panellist emphasised that it was time to prioritise diabetes and declare a war against this growing epidemic. Prevention should be the focus, as it's the most effective way to combat the disease.

While treatments like SGLT 2 inhibitors can help, the bigger picture should revolve around prevention. Ensuring specific budget allocations for NCDs in primary care is a crucial step in improving the management of conditions like diabetes.

Though there has been progress in introducing specific agents like DPP4 inhibitors and SGLT2 inhibitors to primary care, there are still obstacles to overcome. For

instance, allocations for these medications are often limited, forcing patients to bear the financial burden.

Additionally, the allocation of resources for programmes, such as providing glucose meters and forming multidisciplinary teams, is also lacking. To enhance NCD management, there's a need to allocate resources directly to primary care, especially to the more than 1000 *Klinik Kesihatan* (KK) across Malaysia.

Reforming healthcare budget allocation in Malaysia

In healthcare budgeting, the approach should be to incentivise and enhance cost-efficiency.

A vital aspect of this approach is the targeted allocation of resources to different healthcare facets. For instance, while there may be designated funds for wound care in hospital settings, a similar priority should extend to primary care facilities.

Patients often transition from hospital treatment to primary care, yet the absence of a specific budget allocation in primary care leads to reliance on operational budgets. This discrepancy underscores the need for more comprehensive budget planning.

Malaysia's Health White Paper outlines four key pillars, emphasising healthcare transformation and financing reform. These pillars must transcend the field of theory and translate into tangible changes that reshape healthcare financing and service delivery.

Prioritising primary healthcare is a pivotal element of this transformation. It's essential to recognise that the majority of patients seek care in primary healthcare settings, underscoring the importance of allocating budgets where they can yield the greatest impact: prevention and promotion. Initiatives like *Skim Perubatan Madani* have begun addressing the need for acute treatment in primary care.

Moving forward, the goal should be to bridge the resource gap between screening and treatment by securing budgets for both aspects. Public-private partnerships can play a pivotal role in harnessing the private sector's excess capacity to accommodate the surging healthcare demands.

As Malaysia's population grows, revisiting healthcare budget allocation strategies is important to ensure the sustainability and evolution of the nation's healthcare system.

While the budget for these initiatives is substantial, the long-term savings are even more significant.

With meticulous planning and phased implementation, Malaysia has the potential to save millions by reducing hospitalisations, the need for dialysis, and related expenses. Health professionals are tirelessly working to implement cost-effective and results-driven strategies to provide optimal care for diabetes patients in the country.

The nation's health and financial stability are intertwined, as investing in comprehensive diabetes management can lead to healthier lives and long-term economic benefits.

Public-private partnerships

While specialised nurses, dietitians, and paramedics are common in the healthcare systems of developed countries, Malaysia has yet to fully leverage their potential.

Encouraging the involvement of these professionals in patient care can significantly enhance the quality of NCD management, leading to a more comprehensive and effective healthcare system that prioritises patient well-being.

However, this shift necessitates recognition and awareness among patients, who often view the doctor as the sole authority. To achieve more effective NCD management in Malaysia, a collaborative approach involving both the public and private sectors is essential.

This holistic approach mirrors initiatives in other nations, like Singapore's "Healthier SG," which emphasises a whole-of-society approach to combat NCDs and renal disease. It is a shift that has the potential to transform healthcare and the lives of those affected by NCDs.

Drawing insights from other international examples, it's evident that robust diabetes associations play a pivotal role in educating the public and healthcare professionals. Malaysia could benefit from establishing a comprehensive diabetes association that spans public and professional education, akin to organisations in the United States and Australia. This would provide individuals with diabetes access to support and resources, fostering a sense of community to alleviate some of the healthcare system's burden.

Encouraging community support can help reduce stigma and improve self-empowerment among those managing diabetes and prediabetes.

Medication adherence

According to a clinical pharmacist from Hospital Putrajaya and a member of Diabetes Mellitus Committee Pharmacy, recent findings have shed light on a crucial issue that demands attention: medication adherence among diabetes patients.

Shockingly, a systematic review and meta-analysis revealed that only 34% of diabetes patients in Malaysia adhere to their prescribed medications. This staggering statistic emphasises the need for a comprehensive approach to diabetes management.

The importance of addressing medication adherence cannot be overstated. Even with the best treatment plans in place, patients who do not adhere to their prescribed medications are at a higher risk of complications. These complications can be delayed or even reversed with proper medication adherence.

To tackle this issue, the MOH has initiated programmes like Diabetes Medication Therapy Adherence Clinic (DMTAC), where dedicated pharmacists spend valuable time with patients, ensuring they understand their medications and adhere to their treatment plans.

However, it is evident that a more multidisciplinary and comprehensive effort is required to improve medication adherence among diabetes patients, regardless of their education level or background. The struggle with medication adherence is not limited to any particular demographic.

Patients from various educational backgrounds, including those with higher education levels, may face challenges when it comes to taking their medications as prescribed.

The primary care setting often faces time constraints, with healthcare professionals battling queues and rushing through patient appointments.

To truly make a difference in diabetes management, a more holistic and patient-centred approach is needed.

Educating patients, promoting awareness about the importance of medication adherence, and providing them with the support they need can lead to better health outcomes and a reduced burden on the healthcare system.

Panel Discussion – Strengthening CRM linkages to stroke, improving survivorship and stroke care

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Overview of stroke in Malaysia

The prevalence of stroke in Malaysia is a significant health concern affecting a diverse range of individuals, even those under the age of 60. The number of stroke patients is steadily increasing in both urban and rural areas.

Risk factors like obesity, diabetes, hypertension, smoking, physical inactivity, and environmental factors, such as pollution, are believed to contribute to this trend.

The economic burden of stroke patients has increased over the years, with an estimated cost of around RM 6.2 billion in 2016. The number of stroke patients annually is now around 50,000, and the economic cost could be as high as RM 250 million per year.

This cost includes not only medical treatment but also lost productivity and additional expenses for caregivers and transportation. Insurance coverage for rehabilitation after a stroke varies, with some policies covering only two to three months of rehab.

Many stroke survivors seek help from organisations like the National Stroke Association when their insurance coverage ends or they cannot afford private rehabilitation services anymore.

The biggest concern for stroke survivors is their disability and the need for long-term care, including physiotherapy and nursing care. Some patients require full-time caregivers, which further adds to the financial burden on families.

Overall, stroke can have a significant impact on a person's socioeconomic status due to its costs and resulting disabilities.

Healthcare professionals' perspectives

There is a trend in the rise of stroke incidence among younger patients, particularly those between 35 and 39 years old. The lack of a clear explanation for this trend raises questions about lifestyle and risk factors.

Stroke is identified as the third leading cause of mortality in the country, with a steady number of stroke-related deaths over the past decade.

Treatment options and challenges

The conversation also delves into treatment options and challenges. It mentions the significance of early diagnosis and treatment, particularly regarding the administration of clot-busting drugs and mechanical thrombectomy.

However, the need for rapid treatment is emphasised, as many patients arrive at the hospital after the critical treatment window has passed. Issues surrounding costs and financial barriers are discussed, with some patients unable to afford certain treatments or facing significant financial burdens.

Importance of stroke awareness

The discussion highlights the importance of creating public awareness about stroke symptoms and the urgency of seeking immediate medical attention. A tool called "BFAST" (Balance, Face, Arm, Speech, Time) has been introduced to help people recognise signs of a stroke more quickly.

Advocacy materials have evolved to adopt a more interactive and simplistic approach wherein even a 7-year-old could understand the messaging.

It is noted that efforts should target a wider audience, especially underserved communities, and children, to ensure that they are well-informed about stroke recognition and the necessary steps to take in case of an emergency.

Impact on patients and families

The impact of stroke on patients and their families is a central theme. Patients often require long-term care and rehabilitation, and this can place a significant financial and emotional burden on families. The cost of post-stroke care

and the challenges in finding affordable rehabilitation options are of high concern and require addressing to prevent physical, emotional, and financial fatigue.

Treatment options and success rates

The success rate of thrombolytics is mentioned as around 30%, while thrombectomy boasts a higher success rate, typically averaging between 60-70% and potentially reaching 90% in well-established centres.

The improved success rates of thrombectomy can lead to better stroke outcomes, shorter recovery periods, and increased independence, reducing the overall cost of care.

Insurance and rehabilitation access

Insurance policies should be extended to cover ongoing post-stroke rehabilitation, including physiotherapy, occupational therapy, and other related services. The focus is on ensuring that patients receive the long-term support they need.

Rehabilitation services and accessibility

The importance of online rehabilitation services has been proven effective in keeping stroke survivors active and engaged in their recovery, especially in light of the COVID-19 pandemic. The need for continued support for such online programmes is highlighted, both to aid in rehabilitation and to provide a sense of community and connection for stroke survivors.

Accessibility concerns were spotlighted, particularly with regards to parking spaces and facilities for individuals with disabilities. This is important to ensure that stroke survivors can access medical facilities, shopping centres, and other public places comfortably and without hindrance.

Role of insurance and government initiatives

The role of insurance, with a call for insurance companies to provide better coverage for rehabilitation services and for government support in facilitating affordable transportation options for individuals with disabilities.

Recommendations

Diabetes

1. Establish a **multidisciplinary committee** dedicated to addressing diabetes at the national level.
2. Develop **structured lifestyle intervention programmes** that can be implemented in primary care and hospital settings.
3. **Widespread use of SGLT-2 inhibitors** as a class of medication for diabetes management.
4. Reactivate and strengthen the committee under the Deputy Prime Minister (**Jawatankuasa Kabinet Ke Arah Persekitaran Hidup yang Sihat**) to coordinate efforts across various ministries and departments.
5. Declare a **national campaign or initiative** akin to the fight against COVID-19, specifically targeting diabetes.
6. Address the need for **stronger support from top management for nurses**, offering clearer pathways for their professional growth.
7. **Simplify and incentivise post-basic training for nurses involved in diabetes management**, considering allowances and benefits.
8. Develop a national projection for **producing Diabetes Educators (DEs)** based on the target number required annually per healthcare facility.
9. **Involve General Practitioners (GPs)** as diabetic educators, incentivising their participation through a points system.
10. Emphasise the importance of **collaboration and breaking down silos** between different stakeholders in the fight against NCDs and diabetes.
11. Encourage **advocacy and role modelling** at the individual and community levels to promote healthy lifestyles.
12. Highlight the **importance of a multidisciplinary and multisectoral approach** in addressing diabetes and other NCDs.

Stroke

13. **Raise stroke awareness among the public**, especially in the B40 communities, about stroke recognition and the importance of seeking immediate medical attention.
14. **Improve access** to appropriate healthcare facilities for stroke patients, particularly in terms of early detection and treatment.

15. Enhance the **coordination between hospitals and emergency services** to minimise delays in stroke treatment.
16. **Implement public-private partnerships** to improve stroke care.
17. Focus on prevention by **targeting groups at high risk of stroke, such as those with hypertension or diabetes**. Screening for diabetes and other health conditions should be encouraged at various stages, such as premarital and leaving secondary school.
18. **Improve financial support and access to rehabilitation services** for stroke survivors, through initiatives such as providing transportation assistance for attending rehabilitation sessions and exploring discounted rates for transportation services.
19. **Incorporate stroke awareness and education** into the school curriculum, starting from a young age.
20. To reintroduce physical education programmes in schools to encourage regular exercise and **combat the rising rates of obesity among children**.
21. **Address the financial burden faced by stroke survivors**, including the costs of post-stroke care, rehabilitation, and medication. This may involve advocating for insurance coverage that includes long-term rehabilitation and ongoing support services.
22. Explore the **use of online platforms for rehabilitation sessions**, especially during times of restricted movement (e.g., during the COVID-19 pandemic).
23. **Advocate for better insurance coverage for stroke survivors**, ensuring that rehabilitation services are recognised as an integral part of stroke treatment and recovery.
24. **Recognition of the burden on caregivers:** Policymakers should assist caregivers financially and emotionally, as they may have to take time off work to care for the patient.
25. **Strengthening rehabilitation access in primary care:** There is a need to improve access to rehabilitation services in primary care.
26. **Ensure availability of standardised and internationally recognised stroke treatment** at all major healthcare facilities and relevant locations such as community clinics.