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Acting on Stroke and NCDs

An integrated response through people-centred health systems

NCD Alliance

World Stroke Organization

American Stroke Association.
A division of the American Heart Association.

PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES

Noncommunicable diseases (NCDs) are now widely recognised as a major challenge to health and sustainable human development in the 21st century.

NCDs are responsible for

71%

of GLOBAL MORTALITY

NCDs are the leading cause of death and disability worldwide. They are responsible for 71% of global mortality and take the lives of 41 million people every year[1], which exerts a heavy and growing burden on all societies, economies and health systems. Historically considered to be diseases of the rich and elderly, the burden of NCDs is rapidly increasing in low- and middle-income countries (LMICs), where younger people are dying of preventable diseases at a higher and higher rate.

The primary focus of the global NCD response has been on the four major diseases – namely cardiovascular disease (CVD; includes heart disease and stroke), cancer, diabetes and chronic respiratory diseases. The NCD response also focuses on four key risk factors – tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol – identified by the World Health Organization (WHO) as the main factors contributing to NCDs.

This policy brief explores the impact of stroke in society, highlighting the need for awareness on how to prevent and treat stroke before, during and after its occurrence. It also provides key actions that health systems, care providers and civil society can implement to improve the response to stroke and NCDs, based on a comprehensive and integrated approach.

[1] **WHO**, Key Facts, Noncommunicable Diseases, updated June 2018. Online, accessed on 9 August 2018: www.who.int/en/news-room/fact-sheets/detail/noncommunicable-diseases

The growing burden of NCD co-morbidities

Often, two or more NCDs manifest in the same individual, which is referred to as 'NCD co-morbidities'. NCD co-morbidities can occur because diseases share the same risk factors or because some diseases predispose individuals to developing others. These co-morbidities impose years of disability and compounded financial burden on those affected, their families, health systems and national economies. In most cases, co-morbidities require higher out-of-pocket expenditures, which are often more than double for NCD co-morbidities than for a single NCD. While the prevalence of co-morbidities varies, it increases substantially with age in all countries, with higher rates in urban than rural areas[2] and disproportionately affecting the poorest. In addition, those living in developing countries often face a double burden of NCDs and chronic infectious diseases.

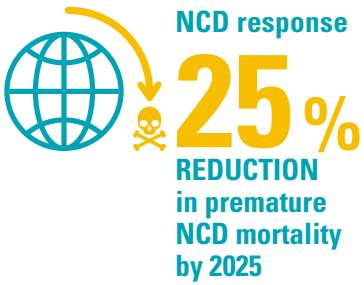
Globally, health systems are ill-equipped to respond to the challenges posed by NCD co-morbidities. Firstly, health systems have evolved to address acute issues, rather than to provide the continuous care required for chronic conditions, including NCDs. Furthermore, many health systems are configured to treat individual diseases in a siloed, vertical approach, which is inappropriate and ineffective for people living with NCD co-morbidities. Given the complexities involved in clinical management decisions, developing clinical practice guidelines for managing co-morbidities for primary care practitioners is vital.

Avoiding disease siloes: Health systems for people

Since the UN Political Declaration on NCDs in 2011, governments have adopted a series of bold global political commitments to guide the **NCD response and an ambitious global goal of achieving a 25% reduction in premature NCD mortality by 2025**. However, progress to date has been insufficient and uneven. As of September 2017, 54% of the countries featured in the 2017 WHO Progress Monitor on NCDs have guidelines for the management of major NCDs[3], which is an essential first step towards the provision of effective care. Even after this is achieved, there remains an urgent need to move away from single disease approaches and reorient health systems to integrate care packages across multiple chronic conditions through a holistic person-centred approach.

Robust health systems underpinned by a strong primary healthcare (PHC) are crucial to effectively manage NCDs. PHC is often the first gateway to health services for people with NCDs and plays a central coordinating role in the prevention, diagnosis and long-term management of chronic diseases. To address NCD co-morbidities, concerted efforts are needed not only for treatment of chronic diseases but also to reduce population risk factors for NCDs. This can be achieved through inter-sectoral health promotion and other primary and secondary prevention measures throughout the life course.

Health services need to be reorganised to address populations' needs holistically and effectively, and to make best use of resources, especially in settings where they are most limited. Within the broader context of universal health coverage (UHC), investment in health and adequate health insurance for all should be at the core of policies to promote better access to health services across populations and reduce out-of-pocket expenditures.



[2] **Lee JT, Hamid F, Pati S, *et al.*** "Impact of Noncommunicable Disease Multimorbidity on Healthcare Utilisation and Out-Of-Pocket Expenditures in Middle-Income Countries: Cross Sectional Analysis," PLoS ONE 2015 10(7): e0127199.

[3] **WHO**, "WHO launches new NCDs Progress Monitor," Press Release, 18 September 2017. Online: http://www.who.int/en/news-room/detail/18-09-2017-who-launches-new-ncds-progress-monitor

The impact of stroke on society

Stroke is a concerning example of how insufficient action to prevent and treat NCDs negatively impacts public health: over the last 20 years, **stroke has become the second leading cause of disability and death worldwide**, with 80 million stroke survivors[4]. For those who survive stroke, many experience disabling residual symptoms. According to Global Burden of Diseases (GBD) data, stroke alone was responsible for 116 million Disability-Adjusted Life Years (DALYs) in 2016, which can be seen as years of healthy life lost across the world's population.

Given this large-scale problem across all continents and countries, stroke can potentially affect everyone either directly or indirectly, as caregivers or family members. **This is an avoidable tragedy as stroke is not only largely preventable, but identification of its symptoms and fast access to treatment can reduce mortality and improve outcomes.**

Stroke is highly preventable and treatable

90% of strokes are linked to 10 modifiable risk factors that include hypertension, smoking, physical inactivity, overweight and unhealthy diet. By addressing these risk factors at an early stage through simple lifestyle changes, the majority of stroke cases can be prevented[5].

Along with quality stroke care appropriate to the resource setting, raising public awareness of the symptoms of stroke (such as a drooping face, weakness in arms and legs and slurred speech) and acting fast to call for help is crucial in reducing the chances of a lifelong disability. Moreover, stroke treatment has been revolutionised during the last two to three decades through increased access to clot-busting treatments and mechanical thrombectomies, which improve survival rates and reduce the severity of post-stroke disability. It is important that people who have a stroke get the right care at the right time.

[4] **GBD 2016 Diseases and Injury Incidence and Prevalence Collaborator**s, "Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016," The Lancet, 2017; 390: 1211-59.

[5] **Dr Martin J O'Donnell, *et al***. "Global and regional effects of potentially modifiable risk factors associated with acute stroke in 32 countries (INTERSTROKE): a case-control study," The Lancet, 2017; 388: 761-775.

World Stroke Day Prevention Campaign

90%

OF STROKES ARE LINKED TO 10 KEY RISK FACTORS.

Here are some actions we can all take to reduce the risk of stroke. If you have diabetes, heart problems or history of stroke/TIA talk to your doctor about stroke risk and preventive treatments.

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one voice
One World Voice for Stroke

World Stroke Organization

1. CONTROL HIGH BLOOD PRESSURE	ALMOST 1/2 **OF ALL STROKES ARE LINKED TO HYPERTENSION.** Knowing and controlling your blood pressure with lifestyle change, or medication will reduce your risk of stroke.
2. DO MODERATE EXERCISE 5X A WEEK	OVER A 1/3 **OF ALL STROKES HAPPEN TO PEOPLE WHO DON'T TAKE REGULAR EXERCISE.** Moderate exercise five times a week will reduce your risk of stroke.
3. EAT A HEALTHY, BALANCED DIET	ALMOST 1/4 **OF STROKES ARE LINKED TO POOR DIET.** In particular low consumption of fruit and vegetables. Eating five or more portions of fruit and vegetables will reduce your risk of stroke.
4. REDUCE YOUR CHOLESTEROL	MORE THAN 1 in 4 **STROKES ARE LINKED TO HIGH LEVELS OF 'BAD' (LDL) CHOLESTEROL.** Eating low saturated, non-hydrogenated fats instead of saturated fats will reduce your stroke risk. If you can't maintain a healthy cholesterol level with diet alone, talk to your doctor about treatments that could help.
5. MAINTAIN A HEALTHY BMI OR WAIST TOHIP RATIO	ALMOST 1 in 5 **STROKES ARE LINKED TO OBESITY.** A good way to know if you need to lose weight is to divide your waist measurement by your hip measurement. If the number is over 0.9 (man) and 0.85 (woman) your weight is putting you at higher risk of stroke and you would benefit from losing weight.
6. STOP SMOKING AND AVOID SECOND-HAND EXPOSURE	ALMOST 1 in 10 **STROKES ARE LINKED TO SMOKING.** Stopping smoking will reduce your risk of stroke. Getting help to quit increases your chances of success.
7. REDUCE ALCOHOL INTAKE	OVER 1M **STROKES EACH YEAR ARE LINKED TO EXCESSIVE ALCOHOL CONSUMPTION.** Reducing your alcohol intake to 2 units of alcohol a day for men and 1 for women will help to reduce your stroke risk.
8. IDENTIFY AND TREAT ATRIAL FIBRILLATION	9% **OF STROKES ARE LINKED TO AN IRREGULAR HEARTBEAT OR OTHER HEART CONDITION.** Talk to your doctor about possible treatments to reduce your risk.
9. DIABETES	**As well as sharing many of the same risk factors, diabetes increases the risk of stroke.** Reducing your risk of diabetes will reduce your risk of stroke. If you have diabetes, talk to your doctor about treatments to reduce your risk of stroke.
10. INCOME AND EDUCATION	**Across and within countries low levels of income and education are linked to stroke.** Government policies that address poverty and improve equitable access to healthcare and education will have a positive impact on stroke and other noncommunicable diseases.

Source: World Stroke Organization

Stroke adds to the burden of NCDs worldwide

Stroke and other NCDs are collectively driven by similar risk factors including unhealthy diets, physical inactivity, air pollution, tobacco and alcohol consumption, and hypertension. Exposure to common risk factors may be augmented by rapid urbanisation, leading to low levels of physical activity and poor ambient air quality. These common risk factors threaten human health in both urban and rural areas, decrease quality of life, and lead to many lost years of productivity. In addition, people living with NCDs and their next of kin suffer emotionally, economically and socially from the disability and stigma associated with NCDs.

Stroke has an acute onset, but should (like other NCDs) **be seen as a chronic disease that carries an increased risk of death**. As a neurological disorder, many survivors of stroke carry a lifelong burden of physical, cognitive, mental, and socio-economic consequences. While stroke survivors and their caregivers have identified hope for recovery as a priority for life after stroke, this needs to be balanced with the reality of potentially life-limiting illness and severe disability. End-of-life issues may become important during a major vascular event, or in the chronic phase of a person with several co-morbidities.

In many instances, a person's psychological needs are not met once their stroke-related medical services are discontinued. Indeed, many stroke survivors have difficulty readjusting to life after stroke, which can cause further distress. This lack of preparation and planning for the current and future needs of stroke patients also poses extraordinary challenges to healthcare and social networks that are vulnerable and ill-equipped to treat such diseases. **There needs to be an emphasis placed on continuous holistic care that puts patients at the core.**

"After my stroke, many things changed in my daily life. I cannot drive, run or even dance. I have to schedule my everyday activities, because I need rest periods. To prevent stroke from happening again, I have regular health examinations to reduce risk factors and I try to reduce anxiety in my daily life. When I had the stroke, I felt I lost the ground under my feet and I realised that we should take nothing for granted. We can lose everything in a flash, so we must prioritise our needs."

Ifigenia Tsolakidov, stroke survivor in Greece

Gaps in the current approach to stroke and other NCDs

The challenges of stroke and other NCDs include: management of complex chronic situations and multi-morbidity; difficult access to healthcare; high out-of-pocket expenditures; limited access to essential medicines and technologies for diagnosis and treatment; limited information and discussion about prognosis; reliance on family members to provide significant post-stroke care with minimal support; and limited knowledge among health care workers.

Overall, financing for NCD prevention and detection remains distressingly low, despite robust data demonstrating the economic benefit of investing in NCD prevention and treatment. Stroke and other NCDs lack adequate, predictable and sustained resources within health systems, and a siloed priority setting at macro- and micro-organisational levels can lead to ineffective use of available public and private health resources. In addition, policies and coordinated interventions to promote healthy lifestyles and limit consumption of unhealthy foods and substances are often lacking or insufficient[6].

People living in low-resource settings are at particular risk of suffering the impact of NCDs, including stroke, as shown by current statistics of NCDs that are taking centre stage in developing countries as the main cause of disability and mortality.

Since the UN Political Declaration on NCDs in 2011, very little has changed in terms of investment or progress on NCDs and the achievement of globally agreed targets is unlikely without increased commitment and implementation of WHO 'Best Buys' and other recommended interventions[7].

[6] **Valery F Feigin**, "Primary stroke prevention needs overhaul," International Journal of Stroke, 2017; vol 12, issue 2.

[7] **WHO**, "Tackling NCDs: "Best buys" and other recommended interventions for the prevention and control of noncommunicable diseases", 2017. Online: http://www.who.int/ncds/management/best-buys/en/

Stroke co-morbidities

The issue of co-morbidities, which is the existence of more than one disease, is a significant risk associated with NCDs including stroke.

Co-morbidities usually occur when diseases have the same risk factors or when certain diseases make individuals susceptible to contracting others. In the case of stroke, both are possible: stroke shares risk factors with many other diseases and stroke risks can be increased by the presence of another disease, such as diabetes.

People who have had a stroke also often live with one or more chronic co-morbid conditions. **Among people suffering stroke, it is less than 6% for whom it occurs in isolation and without co-morbid conditions**[8].

However, due to a single disease focus in healthcare, stroke survivors with co-morbidities are not receiving the holistic care that they need and stroke survivors are at increased risk for future strokes. At the same time, NCD and stroke co-morbidities result in greater healthcare utilisation and a significant financial burden, entailing more out-of-pocket expenditures for stroke survivors and their families.

"When I had a stroke, I was hospitalised for a total of three months. After I was discharged and went home, I initially moved into my mom's room so that it was easier for her to take care of me. I was still wheelchair bound at the time, and was unable to speak or write. I underwent physiotherapy, occupational therapy and speech therapy to improve my physical motion and speech. But I feel that there is one common remedy that is able to help all stroke survivors, regardless of age, sex or race, and that is – LOVE."

Mak Kwok Fai, stroke survivor in Singapore

[8] **Michelle Nelson *et al***. "Stroke rehabilitation evidence and comorbidity: a systematic scoping review of randomized controlled trials", Topics in Stroke Rehabilitation, 2017; 24:5, 374-380. Online: https://www.tandfonline.com/doi/full/10.1080/10749357.2017.1282412

How healthcare systems can respond to the challenges posed by stroke and NCDs

1

Invest in prevention

Given that 90% of strokes are linked to 10 modifiable risk factors that include hypertension, smoking, physical inactivity, and unhealthy diet, policies to change the prevalence of these risk factors and behaviours need to be implemented[9]. **Healthcare systems also need to invest a significant amount of human and financial resources in detection, education and risk reduction.**

2

Ensure access to acute and chronic specialty care

People living with NCDs should have access to health facilities managed by well-educated health personnel that apply clinical practice guidelines to manage NCDs. With regard to stroke patients in particular, they should have timely access to a specialised stroke unit, as around **1 in 10 people make an excellent recovery when cared for in such units**. Patients with stroke and other NCDs deserve attention and treatment of their chronic conditions and co-morbidities, which may include psychosocial support and palliative care.

3

Strengthen primary healthcare (PHC) network

To fully implement effective measures to prevent and treat stroke and other NCDs, health systems need to be based on a solid primary healthcare (PHC) network. These networks offer continuous care across interdisciplinary healthcare providers using integrated care packages with a life-course approach. Financial barriers and out-of-pocket expenditures for prevention, detection and treatment of NCDs need to be reduced. Universal health coverage (UHC) should cover essential diagnostic and therapeutic interventions that respond to basic quality needs.

4

Implement the WHO HEARTS Technical Package

Also related to PHC and UHC, there should be a strong understanding of the role of essential medicines and technology, as included in the WHO HEARTS Technical Package, which is part of the broader Global Hearts Initiative. This module underlines seven steps that focus on a range of aspects in the procurement and management of medicines and technologies required for cardiovascular diseases and stroke. The incorporation of this module in PHC and UHC can ensure that the appropriate medicine is reaching stroke patients at an affordable rate and at the right time and place.

[9] See footnote 5.

How can civil society organisations take action to improve healthcare for stroke and other NCDs?

Raise awareness of stroke within the context of NCDs and dispel myths and misconceptions around the cost feasibility of solutions to improve access to healthcare for stroke and NCDs.

Identify local, national and regional champions that are willing to raise awareness about stroke and motivate investment to fight NCDs, and build the capacity of stroke survivors and caregivers to advocate for change.

Form multi-stakeholder partnerships to ensure a whole-of-society approach.

Hold national governments, service providers, and international organisations accountable to their commitments.

How can healthcare providers deliver effective care for stroke and other NCDs?

1. **Be familiar with NCD risk factors** and the guidelines for detection, monitoring and treating early symptoms of stroke and NCDs.

2. **Help set up primary healthcare** and educate PHC providers.

3. **Always consider the co-morbidities** and chronic aspects of people living with stroke and other NCDs.

4. **Consistently implement WHO 'Best Buys'** and other recommended cost-effective interventions[10] relevant to stroke that will return the highest benefit for investments. Many of the WHO Best Buys, such as reducing tobacco use, unhealthy diets and managing cardiovascular disease and diabetes, directly and indirectly help prevent stroke. If these Best Buys are implemented, not only will they help the global fight against NCDs, but they will also help prevent over 17 million deaths from ischemic heart disease and stroke, in low and middle income countries, by 2030.[11]

5. **Be aware of the psychological, financial, and end-of-life needs** of people living with and affected by NCDs, including stroke survivors and their caregivers.

6. **When talking to leaders of healthcare systems** and policy makers, mention the importance and rationale of investing in organised healthcare, PHC and UHC.

[10] See footnote 7.

[11] **WHO**, "Saving lives, spending less: A strategic response to noncommunicable diseases", 2018. Online: http://apps.who.int/iris/bitstream/handle/10665/272534/WHO-NMH-NVI-18.8-eng.pdf

The NCD Alliance (NCDA) is a unique civil society network, uniting 2,000 organisations in more than 170 countries, dedicated to improving NCD prevention and control worldwide. Today, our network includes NCDA members, national and regional NCD alliances, over 1,000 member associations of our founding federations, other global and national civil society organisations (CSOs), scientific and professional associations, and academic and research institutions.

NCDA has a diverse supporter base, including the World Stroke Organization and American Heart Association. Together with other strategic partners, including the WHO, the UN and governments, we work on a global, regional and national level to bring a united civil society voice to the global campaign on NCDs.

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The World Stroke Organization (WSO) is the only global body with a sole focus on stroke. Through our evidence-based advocacy, education and good practice programmes we aim to prevent stroke and to reduce stroke-related deaths and disabilities worldwide. WSO has a membership of over 80 scientific and stroke support organisations around the world. We represent over 50,000 stroke experts and many more patients and caregivers worldwide, and work with them to develop and deliver our programmes.

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The American Stroke Association is devoted to saving people from stroke — the No. 2 cause of death in the world and a leading cause of serious disability. We team with millions of volunteers to fund innovative research, fight for stronger public health policies, and provide lifesaving tools and information to prevent and treat stroke. The Dallas-based association was created in 1998 as a division of the American Heart Association.

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