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NCD: A major public health challenge for Asia-Pacific

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While NCDs pose a global challenge, it is imperative to highlight that developing countries – whose healthcare systems are already under stress because of equally onerous issues such as fighting infectious diseases and providing greater access to maternity care – are struggling the most.

Incidence of non-communicable diseases (NCDs) is on the rise, globally as well as in Asia Pacific region. Implications are far reaching too – while on one hand, it results in a loss of productivity due to increased sick days or even permanent reduction in workforce, costs associated with government subsidized insurance and healthcare infrastructure can also be quite staggering on the public exchequer. Impact is therefore not only to an individual or a family unit, but is also increasingly a bane for policy makers at a macro level.

The figures are just as alarming: it is estimated that NCDs globally claim over 40 million lives annually, of which around 17 million are under 70 years old. About half of these are in Asia Pacific region alone. While NCDs pose a global challenge, it is imperative to highlight that developing countries – whose healthcare systems are already under stress because of equally onerous issues such as fighting infectious diseases and providing greater access to maternity care – are struggling the most.

Major NCDs, which also have the highest cases in the Asia Pacific region, are cardio-vascular diseases, cancer, diabetes and chronic respiratory disorders. Increasing urbanization and globalization, a sedentary lifestyle, obesity and hypertension have all been major contributors that are leading up to these diseases – with major behavioural risk factors identified as a combination of one or more habits such as increased tobacco use and alcohol consumption, inadequate physical activity and unhealthy diet.

As a result, the Sustainable Development Goals of United Nations (that have replaced the earlier Millennium Development Goals), published in 2016, have a central theme around good health and well-being. The goal by 2030, specifically related to NCDs, is to:

- Reduce by one third, the premature mortality from NCDs, through prevention and treatment and promote mental health and well-being,
- Strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol,
- Support research and development of vaccines and medicines for the communicable and NCDs that primarily affect developing countries,
- Provide access to affordable essential medicines and vaccines,
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

All of this raises many interesting and relevant questions around appropriate frameworks and delivery vehicles to be adopted for addressing this universal issue, as well as the roles and responsibilities of various participants for ensuring effective and quality solutions to the challenge at hand. While a 'one-size-fits-all' approach will likely not be appropriate, following considerations will be fundamental for anyone grappling with the problem:

1. Adopting new and innovative **technology**; for building *scalable solutions*
2. Increasing **awareness**, for *driving behavioural lifestyle changes* for the population at risk
3. Strengthening public & private sector **partnerships**, for *effective and cost-efficient delivery*

TECHNOLOGY INNOVATION IN HEALTHCARE DELIVERY

Technology is a big part of any solution attempting to address the issue, playing a key enabling role across all stages of healthcare service and delivery – from prevention, to diagnosis, to treatment and also care at home.

Growth in adoption of smartphones as well as wearable devices has been unprecedented in recent years, and is only going to keep on rising in Asia over the next decade. This presents a unique opportunity for both public and private players – to be able to monitor and potentially treat patients on a much more personalized basis than previously possible. Proliferation of big data is an equally big opportunity, which can aide in building more relevant and empirically driven models for early diagnosis on one hand, and developing a more holistic view of patients' clinical needs on the other.

An interesting case is that of IBM's Watson, which is already being used by some industry players to develop machine enabled intelligent learning for building cognitive health solutions. A key element will however have to be a robust and scalable technology infrastructure that can support such ambitions designs.

Another huge benefit of technological advances is the ability to remove physical and geographical constraints around delivering certain healthcare services only through hospitalization. Wherever this can be made possible – shifting care from hospitals to homes through connected care and remote monitoring, public healthcare infrastructure is greatly relieved of the burden of allocating precious medical resources and is thereby able to prioritize these for those who need them most critically.

According to various estimates, it is also expected that almost 60% of the world's population aged 65 and above will reside in Asia by 2050. With the demographic shifting towards older people, such connected care also provides a much-needed solution in coping with the growing burden of elderly care.

Transcending geographical boundaries in service delivery, connected care also enables the provision of healthcare in remote communities and urban cities alike – in some cases for the first time. India has attempted many such pilots to deliver rural healthcare through telemedicine, and with increasing success as connectivity improves. Even in much urbanized societies like Singapore, there are examples worth emulating. In 2016, Philips partnered with NTUC Income, the largest insurance provider in Singapore, to support recovery and overall health improvement of policyholders who were recently hospitalized because of a heart condition. Patients were remotely put under observation - from Continuous Care monitoring room in the Philips APAC Centre by a team of tele nurses and doctors.

Further, such initiatives can also help improve treatment compliance and overall health conditions through remote but continuous health monitoring, care, awareness and reinforcing behavioural changes for the better. Patients feel more cared for as well, and therefore confident in managing their condition from within the confines of their homes. This can have a very positive impact on their overall quality of life, not only improving their physical health but also their psychological wellbeing – as they do not feel that they are being overly dependent on family time and resources.

AWARENESS AND ADOPTION

By empowering patients to play a greater role in their own healthcare, and by shifting care from institutions to patients' homes, countries stand to reduce costs and ease the pressure on health systems already strained from caregiver shortages and other capacity or infrastructure constraints. However, even if connected care can be instrumental in tackling healthcare issues resulting from NCDs and other health issues, a big challenge for policy-makers and healthcare institutions is to retrofit these new technologies and approaches into their existing infrastructure and equally importantly, to upskill populations – particularly the elderly and those in rural areas – for them to be able to use them.

A sustainable solution will require individuals to take responsibility for their own healthcare – but this often requires governments to educate and empower their citizens to do this. Therefore, public awareness programmes and general education levels of the population play a critical role in successful adoption of any innovation technology or delivery vehicle. The focus of such awareness programmes needs to be two-fold:

- **Preventive strategies** – to encourage healthier habits, with the objective of reducing future costs and implications as regarding healthcare.
- **Upskilling** – not just healthcare professionals but the population at large – on how to best leverage new technologies at their disposal.

This cannot be a one-time fix however, and requires a sustained effort, so as to ensure that people can keep pace with the rapidly advancing technological landscape. It is therefore a fundamental shift in the way healthcare policy is formulated and adopted.

PUBLIC PRIVATE PARTNERSHIPS IN HEALTHCARE

It is increasingly obvious that healthcare delivery in general, and NCD management in particular, will have to extend beyond the confines of a hospital, and that the path to controlling and preventing incidence of NCDs is going to be a difficult and onerous one. Pace of technological innovation, proliferation of big data and development of new business models are all important, but an effective and long-term change can only be realized if all stakeholders – public, private and individual – work in tandem.

Further, to be able to effectively navigate through such a complex web of possibilities when it comes to solution design and delivery, governments need to increasingly lean in on the expertise of private enterprise.

The theme of long-term public-private partnerships (PPP) therefore becomes central to healthcare delivery as well. Generally speaking, this can be described as an implementation approach where-in a government programmes are provisioned through partnerships between public and private sector. They leverage project execution and financing capabilities of the private sector, without compromising government prescribed welfare objectives prescribed. Therefore, emphasis is on redefining state's role from that of delivering services; to that of service management and coordination. Community participation and involvement of non-profit service agencies may also be favoured and encouraged.

Funding and operation can also be on a partnership basis, with governments often subsidizing these through one or more of various available approaches, such as - infusing capital on easy terms, providing tax shields, including exclusivity clauses, or underwriting guaranteed returns. Closer public-private partnership is also a potential solution to share such financial burden that governments, particularly those in developing countries, are struggling with. Stakeholders here will need to re-imagine ways of financing healthcare care projects, and may have to consider a fundamental shift in pricing products and services on an outcome-based model, instead of on the number of patients or such older approaches.

There are 4 key implementation stages in such large-scale projects: *Build, Own, Operate, Transfer* (or BOOT in short). While private sector superiority in infrastructure build-out capabilities is unquestionable in most cases, decision on the duration of ownership and operational responsibilities, as also the timing of the transfer, if relevant to the project – are determined by a number of factors such as financial viability, scale of the project, government policy and long-term goals of divesting government stake, etc.

This approach to implementation can be taken for technology adoption in NCD management, as well as for developing and delivering content aimed at increasing awareness. Further, any provision of technology and infrastructure to help NCD patients better manage their conditions needs to go hand-in-hand with incentivizing healthier lifestyles in the first place. Singapore Heart Foundation has programmes that help raise awareness around sudden cardiac arrests, need for more individuals to be trained in CPR and the use of automated external defibrillators to increase survival. National Heart Institute of Malaysia promotes heart-healthy diets, encouraging healthy eating among people. On this front too, a range of private sector companies – from wearable manufacturers to insurers – have a key role to play, and this market has already opened up considerably and is growing at a very fast pace.

There are numerous examples wherein active collaboration across the ecosystem – including innovation partners, governments, universities and customers – help create the best solutions, while adding value for all stakeholders.

ARE WE READY?

According to Future Health Index (FHI) 2016, many countries like Singapore, China and Australia have realised the importance and benefits of connected care and enfolded technology in order to meet healthcare challenges prevalent in the region.

However, privacy, cost and bureaucracy concerns still challenge greater adoption of connected care. This could be achieved by new organisational structures, governance, platforms and change in mind-set.

Recently with the launch of new NCD progress monitor 2017, WHO has launched a new mobile application – the WHO NCD Data Finder, for use on all mobile devices such as smart phones and mobile tablets. The NCD Data Finder presents information on the NCD situation in each country – including data on deaths, risk factors and country systems response.