

Health District at Queenstown: Catalyst for translational research

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Ageing societies dominating global demographics is not new. However, the pace of global population ageing is causing disquietude. In 2017, the global population over age 60 years exceeded those below 5 years for the first time in history, and only 3 years later, the population over age 65 surpassed those below 5.^{1,2} The US took 72 years to double its proportion of population over age 65 from 7% to 14% while Sweden took 85 years, but Asia has been projected to achieve this in about 23 years, with Singapore having taken 20 years. This unprecedented ageing acceleration in populations results from longer individual lifespans due to improvements in healthcare and population health, combined with a steady decline in total fertility rate—the latter being the mean number of children per woman in her lifetime. Unfortunately, the number of years in good health has not kept pace with lengthening lifespan; consequently, time spent in poor health is increasing. This demographic change, along with a widening healthspan and lifespan gap, will have dramatic impact on economic growth, workforce composition, healthcare, housing and transportation.

For societies to remain robust despite demographic change, health for all must be a priority. Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. All these components need to be addressed for societies to benefit from the increases in human, social and financial capital generated from longer lives. By addressing the components of well-being we will reap the healthy longevity dividends from older persons—wisdom, life experiences, emotional stability, generativity and workforce participation, with a resultant expansion of economic markets. Achieving well-being for all community members requires fundamental rethinking of how society views and engages older people. If older people are marginalised due to ageism and preconceived notions of their abilities, society will forgo enormous opportunities and possibly exacerbate inequity,

loneliness and poverty. However, all of society benefits if this group is embraced as a growing resource.

Are there solutions?

Acknowledging rapidly ageing societies and the lifespan-healthspan gap, 2 recent reports reviewed the evidence and came to similar conclusions, i.e. societies must do more to ensure their populations remain robust and functional as proportion of older residents increases.^{7,8} The World Health Organization (WHO) dedicated 2020–2030 as the Decade of Healthy Ageing. WHO's baseline report defines healthy ageing as "the process of developing and maintaining the functional ability that enables wellbeing in older age."⁷ Although functional decline occurs with age, the trajectory is highly variable and people can maintain functional ability well into their oldest ages. The goal should be to optimise everyone's functional ability to allow all to contribute. Optimising functional ability requires a change in how we think and act towards ageing; ensuring communities foster older people's abilities; delivering person-centered rather than disease-centric integrated care; and providing access to long-term care for those who require it. This will necessitate meaningful engagement with older people, families, caregivers and others; building capacity for integrated action across sectors; linking stakeholders for shared experience and learning; and strengthening research and innovation to accelerate implementation.

In 2022, the US National Academy of Medicine dedicated their first global grand challenge to healthy longevity and commissioned an international panel to formulate a global roadmap for healthy longevity.⁸ The commission defined healthy longevity as "... the state in which years in good health approach the biological life span, with physical, cognitive and social functioning, enabling well-being across populations."⁸ Enabling this requires societies to have a strong social compact with social cohesion and equity at its centre,

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This article was first published online on 19 April 2024 at annals.edu.sg

and with investments in key enablers. These key enablers include social infrastructure; financial security in retirement and digital literacy; housing; public spaces; safety; transportation; digital technology; health system including public health, health care delivery, long-term care; geroscience, big data innovation; and realising the longevity dividend by enabling older people who want to work, volunteer and participate in lifelong learning. Additionally, disrupters will need to be addressed: ageism, poverty, conflict, pollution and climate change. A whole-of-society multisectoral approach will be required given the complex system that health is, which will then drive a virtuous cycle in which the realisation of the longevity dividend of older populations will provide resources for subsequent investment in enablers and in addressing disrupters (Fig. 1).⁸

What is needed now are robust studies in a real-world environment to validate effective programmes, and where the evidence can be contextualised and translated into sustainable interventions at scale. Considering the above possible solutions, we identified Queenstown

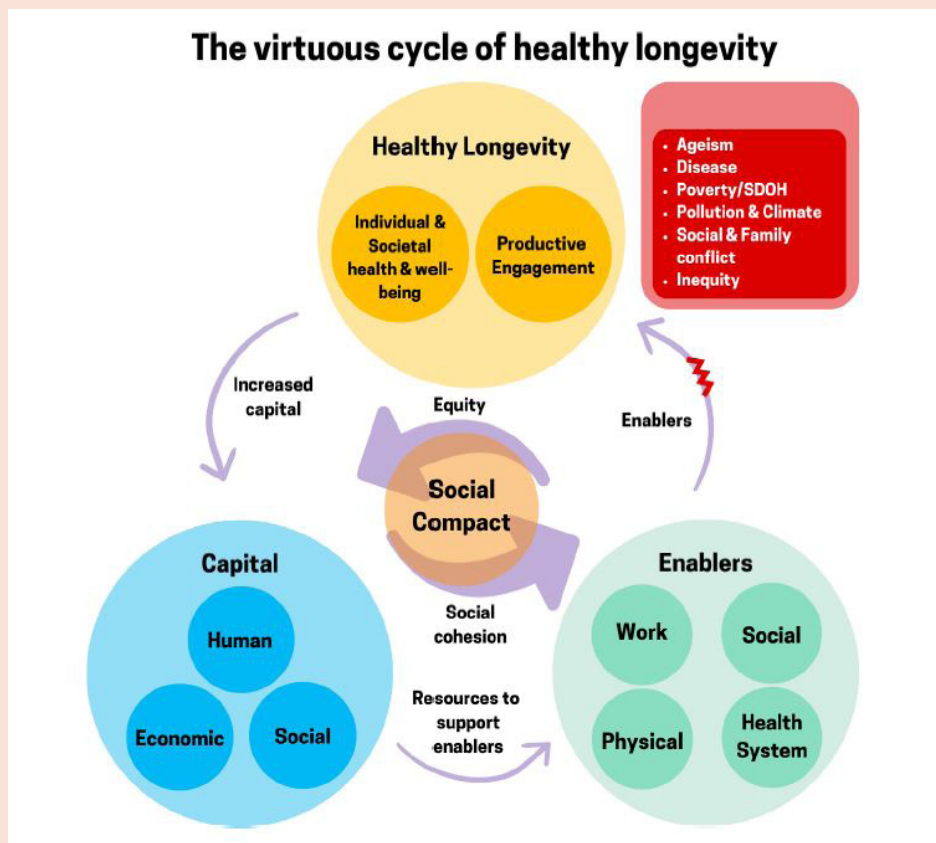
township, with its demographics and housing mix as outlined below, and located within Singapore's National University Health System's catchment area, to be an ideal study site.

The Health District @ Queenstown (HD@QT)

Queenstown is a Singapore community of approximately 95,900 residents in 2022; 22.2% are over the age of 65, qualifying Queenstown as super-aged; 80.2% of its residents live in Housing and Development Board (HDB, a statutory board under Ministry of National Development responsible for public housing in Singapore) apartments. Queenstown's demographic and socioeconomic profile is representative of what the whole of Singapore will look like in 2026 when 21% of its resident population is expected to be over the age of 65.

HD@QT was conceived with 4 goals in mind: (1) increase healthy longevity by increasing healthspan to approximate lifespan; (2) enable purposeful longevity (i.e. a long life facilitated by enjoying activities, which align with one's beliefs and values) by helping people remain engaged

Fig. 1. The virtuous cycle of healthy longevity by which societies can have a strong social compact with social cohesion and equity at its core; catalysed by investments in key enablers; and by addressing disrupters.⁸



SDOH: social determinants of health
Superscript number: refer to REFERENCES.

through work, volunteerism, lifelong learning and reskilling; (3) strengthen intergenerational cohesion such that each generation sees the value in other generations; and (4) support a community for all ages thus allowing people to live a life of meaning with dignity in the setting they choose. This is co-led by HDB, National University Health System and National University of Singapore, in partnership with public and social sectors, and with input from an international advisory panel.

Since HD@QT's October 2021 official launch, work has been organised along 6 workstreams: preventive health and care delivery, purposeful longevity, planning and design of the built environment, technology, communications and engagement, and evaluation. Co-design directs HD@QT's initiatives and rigorous research is used to assess the efficacy of interventions in achieving one or more of the abovementioned goals, along with the abilities to scale up and be sustainable. The first 2 workstreams synergise where there are opportunities (e.g. the creation of micro-jobs by the second workstream assists the first workstream by providing manpower), while the remaining 4 workstreams enable the first 2 (see Fig. 2). All workstreams operate through the principles of co-design with residents and stakeholders, and implementation and behavioural science.

Examples of programmes in each of the workstreams include:

- **Preventive health and care delivery**

Testing the optimal size, composition and ratio of an embedded, integrated healthcare and social services team to residents within public housing. This is to develop the trusted relationships required to improve health education, screening, vaccinations, medication and appointment compliance, and to address social determinants of health.

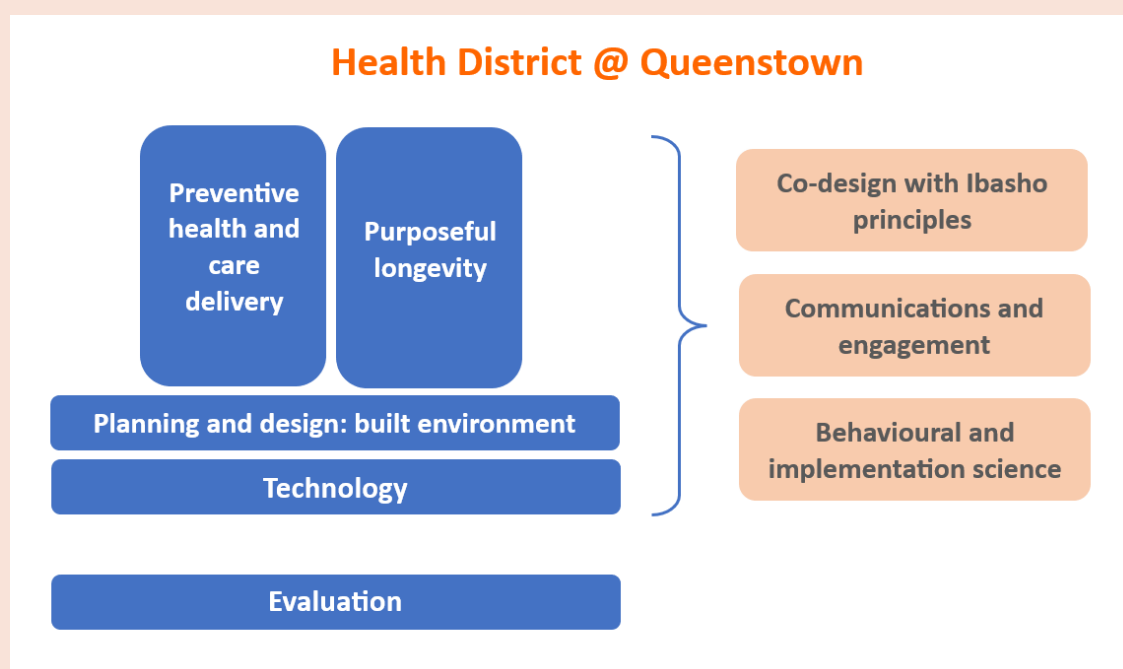
- **Purposeful longevity**

Development of Ibasho hubs⁹ that advocate for the recognition of older persons as valuable assets, empowering them to contribute meaningfully to their communities, developing micro-jobs to strengthen financial security, and trigenerational community engagement to mitigate ageism and promote social cohesion through intergenerational bonding.

- **Planning and design of the built environment**

Working with HDB at the apartment unit, apartment block and neighborhood levels to reduce the risk of falls; encourage independent living, social interaction and physical activity while delivering services into the community and homes; and enable the use of technology. A Built Environment Well-being Index framework is being created to assist HDB in future development and refurbishment of Singapore's public housing.

Fig. 2. Health District @ Queenstown workstreams (in blue) driven by co-design, communications, and behavioural and implementation science (in orange).



- **Technology**

Identifying and testing technology that is effective, scalable and sustainable to enable independence for older people; assist in identifying residents at increased risk of poor health; and facilitate preventive health and care delivery.

- **Evaluation**

A detailed baseline study of 5000 Queenstown adult residents will identify, quantify and understand unmet resident needs to identify targets for future co-developed interventions.

Assessing HD@QT's efforts involves development of a framework based on the Ageing Society Index¹⁰ with relevant indicators identified and endorsed by an international advisory panel.¹¹ Mining of national administrative data sources and comparison of HD@QT's indicators with data from townships of similar demographics and housing mix will determine whether our efforts are making a difference.

- **Communications and engagement**

Creating an effective narrative, identification of communication channels, and the use of campaigns to articulate the goals of the HD@QT, improving digital literacy and addressing misinformation are being undertaken.

Singapore will become superaged by 2026.¹² To respond to the complex challenges and allow us to seize the opportunities created, multisectoral interventions based on science and rigorous evaluation are needed to identify effective scalable and sustainable programmes to reduce morbidity and allow us to benefit from extended lifespan. To be effective, these programmes will also need to strengthen social cohesion across generations and allow people to age in the setting they choose. The HD@QT is a platform to efficiently co-create, test and validate existing programmes in a scientifically rigorous fashion. The project has been called ambitious and pathfinding by those eager to engage with and learn from it.¹³ To our knowledge, no similar coordinated multisectoral effort to address the 4 goals of the HD@QT simultaneously at township level exists regionally and possibly

elsewhere. We welcome our readers' interest in joining us in this initiative.

Keywords: *ageing, determinants of health, healthspan, infrastructure, population health*

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