Policy Brief

Enhancing the Role of Information and Communication Technologies in Health Care for Older Persons in Asia and the Pacific

A Call for Action Especially in Times of COVID-19

In 2020, about 60 per cent of all older persons (65 years or over) globally, or about 430 million people, were residing in Asia and the Pacific. By 2050, this number is projected to reach 958 million. Due to significant declines in fertility, followed by decreases in mortality and coupled with longer life expectancy, population ageing has been very rapid in the region (figure 1).

Figure 1. From "ageing" to "aged" societies: Years required/expected for percentage of population aged 65+ to go from 7 to 14 per cent
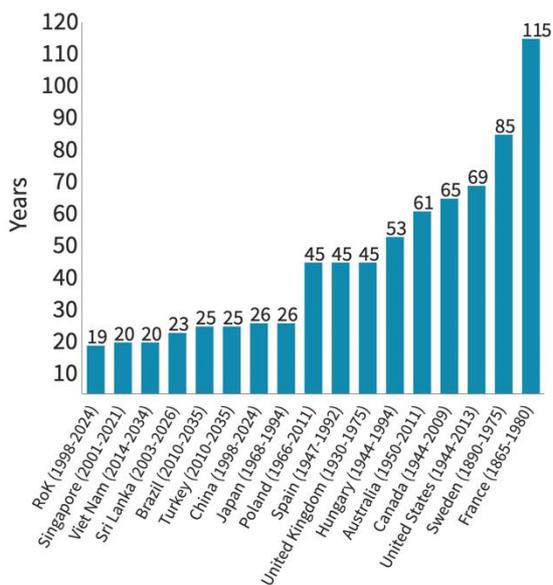
Source: ESCAP 2020.[1]

While population ageing is one of humanity's major achievements, it also presents numerous challenges for transforming the opportunities and quality of life of women and men as they age and for ensuring the sustainability of support systems for all ages,[2] in particular concerning health-care services for older persons. The rising share of older persons, combined with the growing prevalence of non-communicable diseases (NCDs) and the increase in the number of older persons living with disabilities, translate into higher health-care costs and a greater strain on health systems' capacities. United Nations Member States have expressed concern that many health systems are not sufficiently prepared to respond to the needs of rapidly ageing populations, including the need for preventive, curative, palliative and specialized care. They have called on all States to promote and ensure the full realization of all human rights and fundamental freedoms for older persons, including the provision of social protection, access to food and housing, and health-care services.[3]

The COVID-19 pandemic poses multifaceted threats and continues to impact the livelihoods, dignity and survival of people, in particular those in vulnerable situations, many of whom are older persons.[4] Affordable access to health care for older persons has therefore become particularly

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important. COVID-19 has spurred new information and communication technology (ICT) initiatives, enabling continued or enhanced access to quality health care through remote diagnosis, treatment and care, particularly for older persons. Those who avoid or delay accessing health care due to fear of being exposed to COVID-19, may risk other negative long-term health effects.

Existing health services are often structured to diagnose and treat acute conditions or communicable diseases, and pay less attention to managing the complex, chronic conditions of old age.[5] Health promotion and well-being throughout life is addressed in the Madrid International Plan of Action on Ageing (MIPAA), 2002, the global guiding document on population ageing.[1] The 2030 Agenda for Sustainable Development calls for good health and well-being for all (SDG3) and reduced inequalities (SDG10), which are particularly relevant as population ageing accelerates. Gender concerns (SDG5) are equally important in the context of population ageing and equitable access to and use of digital technology (SDG9).The dynamic growth in regional ICT connectivity presents an opportunity to enhance cost-efficient service delivery for older persons and reduces inequalities in health-care access. This strategy is in line with MIPAA, which includes actions under Priority Direction II, Issue 2 to utilize technology to reduce geographical and logistical limitations in access to quality care, particularly among marginalized older populations.[1] The 2022 Asia-Pacific Fourth Review and Appraisal of Madrid International Plan of Action on Ageing will address the use of ICTs to respond to the needs of older persons.

This policy brief highlights regional initiatives that leverage ICTs to strengthen health-care provision for older persons. It builds on material compiled by ESCAP and summarized in the *Guidebook on Using Information Communication Technologies to Address the Health-care Needs of Older Persons*.[6]

Addressing the growing prevalence of non-communicable diseases

Population ageing is associated with higher risk of NCDs and multimorbidity. The rapid pace of ageing is fuelling the region's growing burden of NCDs, which are a major cause of premature mortality and disability (figure 2). Between 2010 and 2017, the percentage of disability-adjusted life years (DALYs) attributable to NCDs rose from 49.9 to 59.2 in the World Health Organisation (WHO) South-East Asia Region, and from 76.4 to 80.2 in the WHO Western Pacific Region.[7]

Figure 2. Total non-communicable disease mortality in thousands for selected ESCAP member States
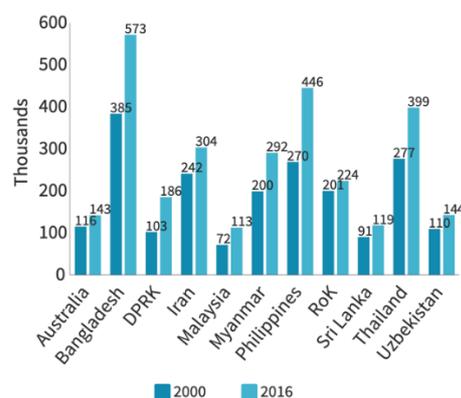
Note: DPRK – Democratic Republic of Korea; RoK – Republic of Korea; Iran – Iran (Islamic Republic of).

Source: World Health Organization, Global Health Observatory data repository: Total NCD Mortality 2020.[8]

Older persons face various barriers to health care, such as the costs of health-care visits, particularly in countries with many uninsured people who must pay for care out of pocket. In isolated rural communities, transport for the physically impaired can be a barrier, especially since health services tend to be concentrated in urban areas.[9] These challenges are greater for older women, who are on average more likely to suffer from NCDs and to live with disability longer, often while facing sociocultural barriers to accessing health care.[10]

Rising health-care costs make it especially important to improve access and service delivery for older persons, and in channelling more resources into health-care systems, countries should make them as efficient and effective as possible.

Leveraging information and communication technology-based solutions to support older-person-centred health care

Technological developments in Asia and the Pacific provide opportunities for strengthening health-care service delivery while limiting costs. The region has been a driving force of ICT adoption over the last decade, with steadily expanding broadband connectivity and speed (figure 3). For instance, mobile broadband subscriptions per 100 inhabitants have grown faster than in any other region. However, the region has also seen slower growth in its countries with special needs.[11] Recent broadband initiatives, such as the Asia-Pacific Information Superhighway (AP-IS), initiated by ESCAP member States in 2015, demonstrate that countries across the region are expanding investments and working to strengthen ICT connectivity and access.

Figure 3. Average broadband speed among selected ESCAP member States
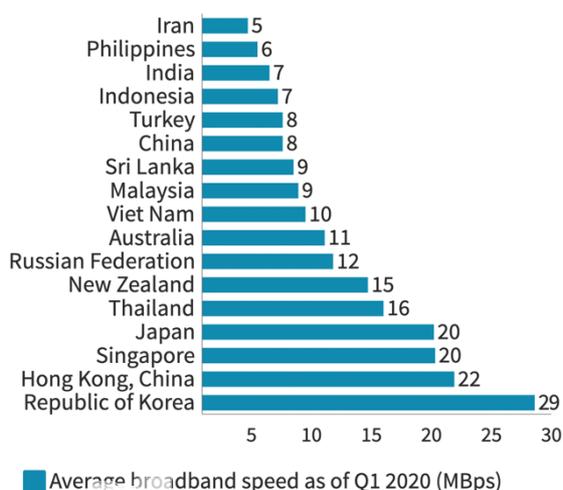
Note: Iran – Iran (Islamic Republic of).
Source: Asian Development Bank 2018.[12]

The COVID-19 pandemic has intensified this regional trend, particularly in the health-care sector, which has seen increasing adoption of ICT innovations. Thus far, adoption has been led by countries in advanced stages of population ageing, such as Japan, the Republic of Korea and Singapore. In the WHO Western Pacific Region, for instance, 67 and 58 per cent of countries,

respectively, report mobile telehealth and patient monitoring initiatives. Values are lower in the WHO South-East Asia Region (60 and 20 per cent, respectively).[13] ICT-based solutions can enhance accessibility, improve quality of care and increase cost-effectiveness in countries across the Asia-Pacific region.

Examples of regional information and communication technology initiatives to strengthen health care for older persons

Asia-Pacific countries are already using ICTs to support access to health care for older persons. In this context, ICTs can be categorized into the following four broad, interrelated categories. Examples presented below are taken from the *Guidebook*, unless otherwise noted.[6]

Figure 4. ICT systems for health care
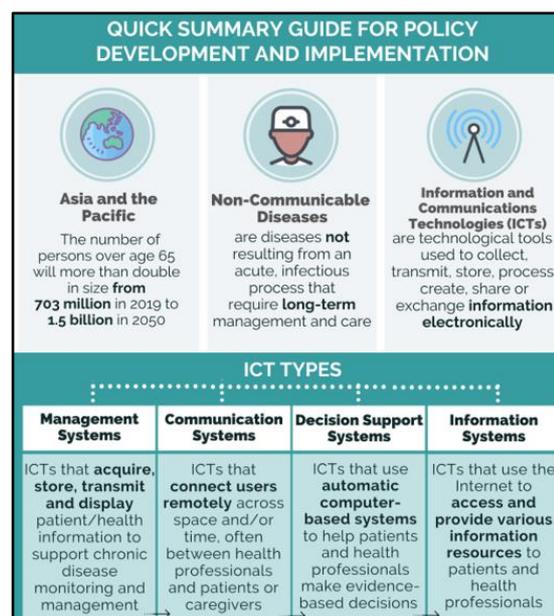
Source: ESCAP (own design).

Management system → improved management of chronic diseases: ICTs have been fundamental in the effective management of NCDs. The use of ICT tools, such as telemonitoring, mobile health and electronic health records, can promote self-management of NCDs by older persons or facilitate management of NCDs at the primary care level.

For example, in Australia, in 2014, the Commonwealth Scientific and Industrial Research Organisation conducted a clinical trial of home monitoring via telehealth for patients with NCDs living in elder care settings. By combining home and clinical monitoring, patients self-manage chronic conditions from home, with constant monitoring and communication with doctors via messaging and videoconferencing. In addition to reducing hospital readmissions and length of stay, the trial reduced mortality rates by 40 per cent and cut costs by 24 per cent over a 20-month trial period involving 25 test patients across five Australian states and territories measured against 50 control patients in both public and private health-care institutions.[14]

In India, a mobile health software application called mWellcare, was implemented at rural primary care facilities between 2015 and 2017 to improve case management of hypertension and diabetes. The software enabled primary care workers to record web-accessible patients' clinical data between visits, in addition to generating a customized and guideline-recommended treatment plan, allowing them to better manage their workload. Primary care workers found that the software improved the quality of patient assessment.[15]

Communication system → increased patient access to expert diagnosis and quality service provision: ICT-based health-care services, such as telemedicine, facilitate access to diagnostic and therapeutic expertise not readily available locally. In addition, telemedicine and telehealth can improve the quality of care provided.

In the Republic of Korea, the Ministry of Health and Welfare has piloted telemedicine at nursing facilities and health centres in medically underserved areas. Telemedicine enables patients to communicate with a remote doctor (assisted by local health workers) via a web portal or smartphone, addressing the problem of rising demand for quality care in underserved communities. During the COVID-19 pandemic, telemedicine has allowed older persons to avoid risky hospital visits.

In 2007, the Aga Khan Development Network established an eHealth programme in Afghanistan, Kyrgyzstan, Pakistan and Tajikistan to promote the use of eLearning and teleconsultation in remote or isolated areas. The programme enables workers to take online training courses from a central medical facility. Live teleconsultation between facilities in Afghanistan and Tajikistan enables remote specialists at provincial hospitals to interpret results shared by local health clinics, confirm diagnoses and recommend appropriate treatments. In 2015, teleconsultation resulted in aggregate patient savings of 8.4 years in travel time and nearly USD100,000 in costs.

Decision support system → assisted health professionals and patients in making well-informed clinical decisions: ICTs can also include automated computer-based systems that align real-time patient health data with the latest knowledge and resources on health issues. These compilation of health-related information through ICTs can assist health professionals and patients in making well-informed clinical decisions.

The mWellcare clinical trial conducted by the Public Health Foundation of India in 2015 was the country's first study on the cost-effectiveness of mobile health solutions for managing chronic diseases at the primary care level. The mWellcare is an android-based mobile health software application created for the management of hypertension and diabetes along with comorbid conditions, such as depression. The software is customized so that primary care-based nurses and doctors can record their patient's clinical parameters after every follow-up visit and can access the data through a web-based server interface.

In Thailand, the Ministry of Public Health, Ministry of Science and Technology, and the Ministry of Education have jointly established a cross-sector coordinating committee aimed at promoting medical and health-related ICT innovations. As a targeted future industry, the robotics field has received full support from ministries and from the Thailand Board of Investments through a range of investments and tax excemptions. These government-led incentives and regulations have

led to the growth of public and private sector innovation and collaboration. One example is the Thai-based CT Asia Robotics' Dinsow Mini, a service robot designed for older person care. The robot was originally intended for use in hospitals and nursing homes, but has since sold in the mass market for home use in Hong Kong, China; Japan; the Republic of Korea and Thailand.

Information system → increased access to evidence-based, accessible, and appropriate electronic media and social information: ICTs that use Internet technology to attain access to different information resources, such as health and lifestyle information, are categorized as ICT information systems. They are typically general in nature.

Singapore's HealthHub initiative provides a digital platform to manage health records and access an extensive range of health content. It is particularly suitable for older persons and for managing chronic diseases. It contains online resources on diets and mental health advice and a location-tracking directory, which points to the nearest clinics, pharmacies, fitness centres and healthy eateries. It also promotes active ageing programmes through an option to sign up for group exercises and workshops.

The Malaysian Ministry of Health has launched MyHealth to provide its citizens with an online portal with general health information. The Internet-based service provides health-care material and shares health alerts using a visually appealing approach. The portal also offers a directory of health centres, hospitals and clinics, data on healthy activities and events, health FAQs, and interactive quizzes on health-related issues.

Virtual care in the context of COVID-19: The physical distancing measures accompanying the COVID-19 pandemic have lowered barriers to virtual care and accelerated uptake of both new and existing ICTs in health-care systems across the region.

Countries have mobilized and implemented numerous ICT-based health-care interventions for multiple purposes, including: (a) supporting the prevention and treatment of COVID-19, particularly among at-risk older persons; (b) assisting in safe management of existing chronic health conditions among older persons; (c) enhancing the reach and accessibility of vital health education and risk communication to older persons; and (d) improving social connection and mental health support, especially for older persons isolated due to geographic or strict social distancing.

For example, in China, the country's national health insurance agreed to cover virtual consultations to alleviate overburdened hospitals during the first wave of COVID-19, enabling patients to access remote care and physicians to see more patients daily. In India, the Government is launching a set of newly developed applications that employ instant messaging platforms, such as WhatsApp, to provide access to virtual health-care services. In Thailand, medical assistance and service robots have been deployed in health-care facilities and nursing homes to provide remote access to health-care services to patients, including older persons. In Australia, many ICT-based responses have been implemented nationwide, in particular to manage chronic disease of older persons. A range of telehealth care services via phone or video conferencing have been added to the Medicare Benefits Schedule and policy-led easing of the national online prescription system has enabled greater access to critical medicines.

Policy recommendations

While the COVID-19 pandemic has catalysed adoption of ICTs in health care, numerous challenges remain to ensure equitable access, including underdeveloped ICT infrastructure and regulatory frameworks, user privacy, lack of access to medication, poor digital literacy and limited ICT skills. As the digitization in the region accelerates, its digital divide is growing and deepening. Those with limited access to ICTs are often already on the margins of society. Older persons — older women in particular — are among the most vulnerable. Addressing this requires an urgent, coordinated response.

Asia-Pacific countries are encouraged to consider the following recommendations at the national level in order to develop an inclusive and

enabling environment for the adoption of ICTs in health care:

Figure 5: Policy recommendation on ICTs, health care and older persons

Source: ESCAP (own design).

Establish a multisector coordinating committee: This committee should be comprised of diverse governing bodies at the national, state and local levels. It should focus on spurring investments in ICT policy, enabling governments to look beyond fragmented ICT pilot projects, ensuring that processes are not restricted, and encouraging all interested ministries, the public and private sectors, and stakeholders to actively participate.

Conduct policy and practice landscaping: Conduct needs and health impact assessments to better understand the current health system and ICT landscape from which to inform policy development. Such assessments also serve to inform ways in which it might be appropriate for ICT interventions to be integrated into existing health-care efforts.

Develop integrated policy frameworks and implement legislation: Governments should develop an overarching integrated, long-term and sustainable policy framework for ICT use in health care of older persons managing chronic disease. Such a framework can provide policy guidance and help galvanize support from diverse stakeholders.

Establish legal and regulatory frameworks for digital health: Based on established integrated policy frameworks, decision makers should develop regulatory mechanisms, update operational guidelines and enforce implementation standards and accountability. These should support the development and/or refinement of ICT-based health systems that are accessible and affordable for all while ensuring patient privacy and protection.

Invest in ICT infrastructure and capacity: Invest in policies and practices that support the development of ICT conducive infrastructure, human capital, and institutional capacity-building. This includes physical infrastructure and core services. Government support and public-private partnerships can spur such investments.

Foster new and innovative ICT research and development: Support comprehensive ICT research and development through strategic and innovative policy development, investment and implementation. Policymakers need to continuously ensure that the public and private sectors are efficiently and strategically innovating to support universal public health and sustainable development goals for older persons with chronic disease.

Conduct rigorous monitoring and evaluation: Develop and implement monitoring and evaluation plans to assess policy effectiveness and make the necessary course corrections. From the beginning, establish mechanisms for the regular monitoring and evaluation of ICT best practices, health-care policy and implementation of services. Capacity building on monitoring and evaluation is needed to support effective implementation. Data gathered, often through a set of standard indicators, can provide key feedback loops to inform current and future

policy development, implementation and adaptation of efforts.

Ensure adequate budgeting and sustainable funding: Adequate and sustainable budgetary allocations and sustainable funding sources are needed. Especially during the COVID-19 pandemic, which has catalysed demand and implementation for ICT-based health-care responses, there is a political window of opportunity to build budget cycle support for ICT solutions that can safely and securely meet the needs of older persons managing chronic disease while adjusting to the "new normal".

Strengthen regional cooperation: Support cooperation among Asia-Pacific countries to leverage and share lessons learned, resources and expertise. Regional cooperation can be fruitful for narrowing inequities within and among countries. Policymakers should explore ways in which they can actively support regional collaboration through policy-led efforts and participation in key regional governing bodies.

References

[1] ESCAP (2020). ESCAP Population Data Sheet 2020.

[2] United Nations (2002). Political Declaration and Madrid International Plan of Action on Ageing Report. New York: United Nations.

[3] United Nations (2020). Follow-up to the Second World Assembly on Ageing. General Assembly resolution A/73/152.

[4] United Nations (2020). United Nations Decade of Healthy Ageing (2021–2030). General Assembly resolution A/75/131.

[5] WHO (2015). World Report on Ageing and Health. Geneva: WHO.

[6] ESCAP (2021, forthcoming). Using Information Communication Technologies to Address the Health Care Needs of Older Persons Managing Chronic Disease: A Guidebook and Best Practices from Asia and the Pacific.

[7] World Health Organization, Noncommunicable Diseases: Country Profiles 2018 (Geneva, WHO).

[8] WHO, "Global health observatory data repository: total NCD mortality." Available at https://apps.who.int/gho/data/node.main.A860?lang=en (accessed on 16 July 2020)

[9] ESCAP (2020). Connecting the Last Miles: Accelerating Inclusive Broadband in Asia and the Pacific. AP-IS Working Paper Series. Bangkok: ESCAP. New York: United Nations.

[10] Institute for Health Metrics and Evaluation (IHME) (2017). *Global Burden of Disease Compare.* Seattle, WA: IHME.

[11] WHO (2015). World Report on Ageing and Health.

[12] Alvin Marcelo and others, "Transforming health systems through good digital health governance", ADB Sustainable Development Working Paper Series (Manila, ADB, February 2018).

[13] OECD/WHO (2018). Health at a Glance: Asia/Pacific. Paris: OECD.

[14] WHO (2016). Global Diffusion of eHealth: Making Universal Health Coverage Achievable. Geneva: WHO.

[15] KHIDI (2018). Improvement of Access to Medical Care and Quality of Medical Services for the Long-term Treatment of the Older Population Using ICT. Cheongju: KHIDI.