The COVID-19 pandemic has accelerated technology adoption and changed the overall landscape of care delivery for older adults. Initially, virtual care was shown to be beneficial for older inpatients and emergency triage of patients with acute respiratory syndrome. Nonetheless, virtual care has now been shown to be useful for supporting frail and/or disabled older persons and caregivers in the community, nursing home residents, assessment and management of cognitive impairment, geriatric psychiatry patients, symptom control at the end of life, wound care, assessment of falls risk factors and virtual rehabilitation (1-11).

Virtual geriatric care is a broad term which includes geriatric telehealth and telemedicine (12). The term “telemedicine” was initially coined by the American Thomas Bird in 1970’s, where “tele” translated from Greek and “mederi” from Latin word into “distance” and “to heal” respectively (13). The American Telemedicine Association established in 1993 with the aim of advancing telehealth, and ensuring “everyone has access to safe, affordable, and appropriate care when and where they need it” (14). “Telemedicine” and “telehealth” are often used interchangeably with significant overlap. The WHO policy in 1997 defined telemedicine as “health related activities, services and systems, carried out over a distance by means of information and communication technologies for the purposes of global health promotion, disease control and health care, as well as education, management, and research for health” (15). Virtual care can be delivered through synchronous, asynchronous, and remote monitoring. Synchronous virtual care is advocated more in recent times, and tele-consultation with older adults has its own challenges. After hundreds of telemedicine consultations, we suggest a flow chart aimed to help those who are new to this modality (Figure 1).

Covid-19 brought virtual healthcare to the forefront to ensure accessible, sustainable and quality healthcare when many countries implemented country-wide lockdown in 2020.
and healthcare systems were under significant strain (17, 18). Within a few months, most countries introduced telemedicine governance and legislations and provided incentives to encourage widespread implementation and adoption including virtual hospital and nursing home visits for caregivers (19, 20). Older adults have been most at risk during Covid-19 pandemic, not just from the disease but also the consequences of lockdown measures such as functional decline, loneliness, social isolation, delay in diagnosis and remain at the greatest risk for digital divide (18, 21, 22). The challenges for technology adoption in older adults include lack of access, confident and familiarity with technology, cognitive impairment, hearing and vision impairment (18). Many countries developed initiatives to reduce digital divide amongst older adults such as ‘Seniors Go Digital’ movement with ‘SG Digital’ community hubs, and mobile plans at subsidised rates to accelerate digital adoption in Singapore (23).

Virtual healthcare has enabled efficient healthcare delivery, reduce acute hospital events, shortened waiting times, improved quality of life, enabled successful polypharmacy reviews and is cost-effective (8, 24). Prior to COVID-19, many physicians were reluctant to adopt telemedicine or virtual care with the perception that communication may be a barrier especially for those with visual, hearing and / or cognitive impairment, difficulty with billing, unable to perform physical exam and confidentiality issues (24). While many older adults were initially hesitant, recent studies show older adults and caregivers were overall satisfied with virtual visits (over 90% of satisfaction) with travel time saved and overall cost savings (25).

Studies have shown virtual healthcare to be beneficial in the assessment and management both for older adults and caregivers (Figure 2). Although less than 10 studies have been published in virtual geriatric care (24), results point towards reduction in hospital admission and general cost, and better medication management with telehealth and telemedicine. However, negative points have also been raised in these studies, such as lower confidentiality and privacy, occurrence of technical problems, communication difficulties during consultation, and a lack of virtual protocols or models for telemedicine (24). In our personal experience, other barriers should be considered such as the quality of video and audio which is crucial for the assessment of older person which demands specific (and sometimes costly) infrastructure; insurance coverage for virtual care may demand a teleconsultation through specific electronic health record (EHR) system; the EHR may not be friendly to external non-technical users (e.g., patients); delivery of physical interventions by

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**Figure 2. Virtual Geriatric Care**

[CST: cognitive stimulation therapy](#)
physical and occupational therapists e.g caregiver training, managing transfers may be difficult in virtual care and legal problems due to lack of specific legislation on virtual attendance.

In the field of cognition, cognitive assessment, virtual training for caregivers to manage behavioural and psychological symptoms and interventions such as cognitive stimulation therapy virtual program, virtual mindfulness, virtual cognitive rehabilitation and provision of care support services have been shown to be useful (26-30). In the field of falls and balance, studies have shown that certain virtual physical assessments such as 30’s arm curls test, chair-stand test and 2- min step test to be reliable (31, 32). Falls risk factor assessment such as vision and high-risk medication education and assessment can be done virtually through tele-ophthalmology and tele-pharmacy (6, 33). In addition, tele-pharmacy and / or virtual assistant programs have shown to improve medication adherence, enhance support to clinical services, provide patient and caregiver education and effective in reconciliation of medications (6, 34). Augmented reality has shown promising results on planning home modifications to reduce falls (35). Multidisciplinary home tele-health program to prevent falls which includes exercise has been shown to reduce falls in older adults (36).

Virtual care has also shown to be beneficial and cost-effective in end of life and palliative care, especially if used to supplement face-to-face care for symptom control, emotional support, patient participation in hospice team meetings and medication titration (7). Chronic wound telemedicine care has been existent well before Covid-19 pandemic which incorporates image assessment followed by video consultation and/or text and telephone consultation and can be in the form of blended or purely virtual care (5). Tele-dentistry is becoming increasingly popular in certain countries especially for nursing home and assistant living residents and can also serve as a tele-triage to assess who will benefit from timely dental care (37, 38).

Virtual geriatric assessment including frailty and sarcopenia assessment can be done in asynchronous or synchronous ways. There are many web- and app-based software for assessment of frailty or sarcopenia but very few are available for remote assessment and with assisted management pathway (39, 40). The Rapid Geriatric Assessment App is one example that authors have a good experience during telemedicine consultation. Self-administered rapid geriatric assessment and transmission of information to the provider holds promise for the future to prioritise care for high-risk individuals (41).

Covid-19 has created opportunity for geriatric medicine services and care delivery to be re-designed, with options to provide targeted virtual care for those at high risk of hospitalisation. Virtual care may not be suitable for those with new onset symptoms which requires onsite assessment and treatment such as chest pain or acute neurological symptoms, sharing bad news, undifferentiated acute issues, lack of privacy or in situations where there is a language barrier (42). For virtual healthcare to be sustainable in longer term and serve as a complementary role to in-person visit, certain enablers need to be put in place such as access to diagnostic tests, investigations and technology, and implementation need to be tailored based on needs (43). In this sense, we suggest a flowchart to guide teleconsultation in geriatric clinic (Figure 1).

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