# Telemedicine for elderly hospital at home patients: are the times ripe?

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**BY THE NEW WHAHC COMMITTEE CO-CHAIR Dr Vittoria Tibaldi – WEDNESDAY, 13 april 2022**

The COVID-19 pandemic has highlighted what the aging of the population and the consequent increase in the incidence of chronic-degenerative diseases had already suggested: the need to change the current model of health care and paying more attention to care delivered in the community.

It has now been established that hospital at home is a feasible and safe alternative to hospitalization for selected patients. Numerous initiatives in the field of hospital at home were born or strengthened during the world Sars-Cov-2 pandemic in the U.S., South America, Canada, Israel, UK, France, Spain, Northern Europe and Australia.

The pandemic has also accelerated the use of remote monitoring and telehealth/telemedicine to provide patients with hospital-level care without the risk and costs associated with hospital stay. The use of healthcare technologies at home is growing because

- it is safe and generally well accepted to patients and clinicians
- it can improve quality of life and encourage people to

stay active at home and in the community instead of being hospitalized or institutionalized
- it can ameliorate interaction between patients, caregivers and clinicians, promoting a more informed participation of patients and caregivers in the care process
- it can enhance clinical team coordination and supply chain management, improving efficiency and costs
- it can allow an easier access to care, especially for people living in remote locations or far from healthcare facilities
- it can allow doctors and nurses to reach out other offices or colleagues without the need to move from home

In Italy, the first HAH experiences in the field of the telemedicine started in the year 2009 with a project aimed to evaluate the use of a telemonitoring platform in the real-life context (MyDoctor@Home project, with the contribution of Telecom Italia). In the same year a project on teleradiology (the RAD-HOME project) was born to explore the quality of imaging and clinical outcomes of using mobile, light-weight x-ray equipment to provide radiologic examinations to frail elderly patients at home. Other projects were conducted in the following years to study the role of telemonitoring in the acute management of elderly patients with heart failure or acute exacerbation of COPD, by using portable and Bluetooth connected medical devices and a dedicated platform. In general, our early experiences highlighted that the use of technology at home is safe, is acceptable to patients and clinicians and has the potential to improve quality of life.


A remote monitoring with an experimental telemedicine system (TESI eViSuS®, Tesi S.p.A., Bra, Italy) was implemented during the pandemic for COVID patients. In addition to nurse and physicians' visits, caregiver training sessions or scheduled nurse/physician-led tele visits were provided until discharge. Data is encouraging: the hybrid in-person and tele-visit approach has the potential to create a "safe" environment, by addressing self-confidence and safety issues, and to empower motived caregivers to manage frail older adults with Covid-19 at home, avoiding hospital admission when possible. The system is still in use for selected patients, with or without Covid infection.

Another technological solution is being tested at our Geriatric Unit on outpatient elderly people suffering from Mild Cognitive Impairment (MCI). This experiment is part of a larger project, the "REHOME" project, focused on the remote rehabilitation of cognitive (MCI), motor (post-stroke, Parkinson' disease) and sleep disorders. The REHOME solution integrates several types of sensors and innovative methodologies (such as exergaming and gamification approaches) to face patients' and clinical needs by ensuring the continuity of care and rehabilitation services from health facilities to domestic scenarios. The project has a multidisciplinary working group that involves 7 industries, 3 research institutions and 2 hospitals. Considering the aging of population, the consequent growing of neurological diseases and the need of solutions favouring a safe management of patients outside the hospital walls, this project can help to evaluate the pros and cons of an innovative monitoring and rehabilitation solution.

An AI-enabled clinical-decision support tool is the next step in the research program of the HAH of Turin. The aim is to create an algorithm that helps the ED clinicians to select the right patients for this peculiar setting of care.

There are many advantages in the use of care programs with the support of technological devices when managing patients who have chronic conditions, but we need to know more about the use of healthcare technology in a special context of acute care, as hospital at home is. Highly motivated patients and/or caregivers with fairly good technological skills are needed, ethical and legal issues can be addressed, the lack of an adequate mobile network can be considered (rural areas, old houses), a sustainable reimbursement plan is necessary.

Telemedicine is usually defined as the exchange of medical information from one location to another using electronic communication. Telemedicine has multiple applications and can be used for different services, which includes wireless tools,

email, two-way video, smartphones, and other methods of telecommunication's technology. Consultations with patients through video conferencing or video visit, point-of-care laboratory tests, electronic transmission of digital images, monitoring of vital signs remotely are some examples of application of telemedicine. It is important to understand which type of technology to choose and which kind of patient is eligible. The use of technology can be a problem or an obstacle to care where the right requirements for use do not exist. For example, the adoption of technology could be associated to an increase in patients/caregiver stress or in clinician burnout.

In the last two years our way to visit patients has changed. We no longer wear usual clothes but we wear work uniform, gowns, masks and gloves. Elderly people we treat often complain about the inability to see our smiles or to appreciate the warmth of our hands. Physical and visual contact is very important for particularly frail patients such as elderly people. The use of technologies should be carefully handled in this special population.

The use of telehealth/telemedicine plays an increasingly important role in management of HAH sick patients, with or without COVID infection. Scientific data collected so far show that "virtual" care can enhance patient experience, improve health outcomes and healthcare quality, ameliorate the work life of caregivers, lower the costs of care and encourage the scaling of acute care delivery in the home. However, a wider adoption of telemedicine in this setting of care requires more studies on cost-effectiveness and optimal organizational models. To define standards, best use and eligible patients is mandatory. To ensure compliance with relevant laws, data governance, patient privacy and protection against cyber risks is necessary.

To sum up I have some questions and doubts that I want to share with the tribe:

- are elderly patients and their caregivers ready for this technological change?
- are hospital at home care workers ready to handle the technological change?
- how can we lead the shift towards an increasingly technological way of working?
- who are the elderly patients who can benefit from telemedicine?
- can we define any standards for the use of telemedicine in this population?

Please, let me know your answers or questions. Time to share our opinions is close – WHAHC 2023 is just around the corner!

# ABOUT THE AUTHOR

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Aprox. 20 years experience in Hospital at Home care at the Unit of Geriatrics (Head of the Unit: Prof. Mario Bo), City of Health and Science of Turin-Molinette Hospital (Italy). Author of book chapters and papers published in national and international peer-reviewed journals. Principal Investigator in projects in geriatric field, with special attention to hospital at home care of frail elderly patients (focusing on dementia, COPD, heart failure, delirium, telemedicine). Invited speaker or moderator in national and international

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