

# Use of telehomecare in continuing care



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## **The benefits and challenges of using Telehomecare (THC) technology for health care delivery in elderly patients**

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### **Abstract**

Changing demography has affected the way we spend our healthcare dollars. There has been an increase in the need for the resources and this change is very rapid. In this situation, use of technology becomes essential in order to ease the exponential growth in the demand for resources. This paper talks about a technology called Tele-homecare that offers to help by saving money and increasing acceptance and quality of life of elderly patients. It also helps educate and empower the family members and relatives which form the important component of informal caregivers. However, it has been shown that it increases burden on the nurses and increases the stress of family members.

## **The benefits and challenges of using Telehomecare (THC) technology for health care delivery in elderly patients**

Technology has changed the way we live our lives today. From mobile phones to automobiles and jets, it has made our lives easier. Similarly, technology created its space in the healthcare by helping us overcome multiple hurdles. Use of internet, social media, and electronic medical records are few of the latest advances. On the continuum of the quest for better healthcare, we are looking at existing technology to solve our further problems related to improved patient outreach.

Health care delivery is the biggest challenge today. During the class lecture on 24th of Feb, Suzanne said that successful old age in western world is synonymous to increased autonomy, self-reliance and independence with focus on staying home. The change in the demographics has led to an increase in healthcare expenses. Rise of chronic diseases coupled with dropping income of elderly people, there is an increase in resources required to face the changing paradigm. The seriousness of the situation can be understood by the fact that despite an effort by Department of Health to keep more people into their homes and adding 1000 more beds in various facilities, the nursing home wait list more than doubled during the same year (Suzanne, 2014). There is an ever increasing and exponential growth in the requirement for the share of limited existing resources.

### **Patient education, empowerment and self-care**

In my view, patient education has the capacity to empower patients with necessary knowledge for self-care. Patient education is not limited to the passive information but also means an active support on day to day basis. For example, suppose that Mr. X is a patient who knows everything about his conditions through internet but, does not have the right setup, resources and support to carry out what he plans. The problem he has to face is a challenge for the technology to overcome. So, in my view, patient education is giving all the needed information and also supporting patient to help him carry out his initiatives with expert help ideally available round the clock. This way education will lead automatically to empowerment. There is need for increased collaboration between technology and concerned stakeholders. Patient empowerment implies facilitation of patient independence through

care that helps patients gain control on their living conditions (Malin N, 1991). What does this mean? If we help patients in controlling their day to day life, it will promote a level of independence and self-reliance required to successfully stay home in old age. There is an interesting finding by 1 PE that, patient empowerment not just promotes independence, but empowering one task leads to gaining independence in multiple tasks. According to 3PE, empowering and giving control to patients is important because they know their symptoms and experiences better than anybody else. He further suggests opening professional education to patients.

So, there is a clear link between patient education, empowerment, self-reliance and independence which herald successful old age. This approach will distribute the burden off from the health care system to be shared by patients, family members and friends. It is important to analyze how we can carve out an approach to better education to patients in order to promote better self-care through empowerment. Use of Telehomecare offers one such a solution.

## **Role of technology in patient education**

Tele-homecare is a set of equipment that is setup in patient's home with a purpose of communicating electronic material, medical record and relevant electronic information through voice and video by using ordinary telephone lines(). Video camera, blood pressure monitor, glucose monitor, stethoscope and thermometer would be some of the most common equipment that could be part of any tele-homecare system. Patients are supposed record the routine data into the system while health care providers will routinely monitor, assess, discuss and advise through electronic medium ().

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As per study by 1PE, THC has potential in monitoring and promoting effective self-care in older adults with multiple medical conditions especially heart failure. Another study by 5pe, conclude that patient empowerment through telehomecare has shown potential in enhancing self-management in COPD patients. It also improved health literacy and participation of patients that led to reduced care costs and increased quality of life. However, 1 PE cautions that empowering has to be tailored to the patient' goals. Since, patients tend to assume the ' sick role' and ' doctor knows best' kind of attitudes, it is important to assess the amount of autonomy agreed by elderly patients who want the care. Another study on empowerment of heart failure patients through telehomecare by 2PE concluded the need for a comprehensive program instead of simply placing equipment in patients' home.

Simplicity and affordability would be important concerns before opting technology to overcome this challenge. One also has to consider the falling income of old age against the range of expensive tele-care devices (1DIW). So, it will be important to see if the technology will work on various parameters described below.

## **Telehomecare Works**

I will be providing some evidence by researchers that support the use of telehomecare technology in elderly care. The first parameter is as follows,

### **Clinical and economic outcomes**

Telehomecare is clinically effective and saves money. A study by 3DIT was a randomized controlled trial on heart failure patients about clinical and

economic efficiency of telehomecare. They found out that, after 30 days of implementing the technology, patients were 3% less admitted for all causes and 1% less admitted for heart failure related causes. At the end of the 60 days the total difference due to all causes stood at 6%. As per the author, this difference was not statistically significant however, was definitely clinically significant. This also meant to him, \$1 billion savings per annum province-wide if every heart failure patient had accessed telehomecare. A systemic review pointed out decrease in readmission in heart failure patients by as much as 21% to 46%.

Another study by 7DIW, on home telemonitoring for chronic diseases in Canada (congestive heart failure and COPD) points out the following,

- Large decrease in hospitalizations
- Decrease in average hospital stay
- Decrease in number of emergency visits
- Increased patient satisfaction and willingness to continue to use technology
- Significant savings of CAD 1, 557 per patient per annum

These studies indicate huge potential in THC with clinical and economic benefits to our health care system. However, it also pointed out the increase in visits by the nurses. This means that shift in the burden of care is born by nursing staff. Author states that, the economic savings are because of decreased hospital stay and emergency visits by patients. So, we know that THC works and it is beneficial to use it in delivering healthcare to elderly. We

also need to know whether patients would be interested and willing to use such technology in their homes.

### **Patients take keen interest**

To find out what patients think, 2DIW conducted mixed qualitative-quantitative study on use of Telehomecare called the TELEKAT project in Netherlands. It had randomized (quantitative) and non-randomized (qualitative) components. The four different attitudes exhibited by patients towards technology that came out of the study are,

- Indifference
- Learning on day to day basis
- Feeling of security
- Feeling of motivation

They concluded that the patients were overall interested and committed to using of technology in their rehabilitation. TELEKAT also helped train the family members and led to increased communication and knowledge sharing among patients and care givers. A further study on TELEKAT by 5DIW confirms the decreased costs and increased effectiveness while delivering better healthcare in today's world. It gives more value for money and more savings on healthcare budgets.

Now, we know that THC works and that patients are interested in using it, let's consider some of the possible challenges we may have to face while attempting to adopt it in our environment.

## **The challenges**

Developing and delivering workable devices is a challenge. A study by 1DIW concludes that elderly patients are reluctant to use technical equipment and that it is being forced onto them. In addition to patients, the technology has also affected professions who are involved in creating devices and making them work. Technicians, clients, care managers and care givers, all struggle to making sure technology delivers on end users' expectations and abilities.

Another study by 1PT on heart failure and Arrhythmia patients transferred from hospital to home hospitalization through use of Telehomecare, points out its effect on family members of patients. According to them, patients clearly agree with the advantages of using of technology however, it puts a physical and psychological burden on family member. Family members feel more responsibility, increased nervousness and invasion of their privacy.

One more study by 6 DIT complements these findings and further suggests that video consultation is not a substitute for actual patient visits by nurses.

So, along with the proven benefits, there are some of the negative aspects and limitations of using telehomecare technology in patient's homes that needs to be considered depending on a situation. Opinion of all involved stakeholders would be important before choosing such technologies for province-wide implementation.

## **Conclusion**

- Patient empowerment
- Patient education through technology
- Self reliance is equal to successful old age



- Telehomecare is the technology to empower elderly
- Telehomecare is effective and saves money
- Challenges of telehomecare

## References

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