The use of Information and Communication Technology (ICT) to facilitate self-management of chronic conditions for home-dwelling seniors

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Introduction:

- Many seniors who are living at home receive services from numerous healthcare professionals.
- Managing the appointments, information, and required actions associated with these encounters can prove to be very challenging.
- Information and communication technology (ICT) can help seniors with self-management and coordinating their care, as well as minimizing errors by professionals and risk of harm to their patients.
- ICT can facilitate communication among healthcare professionals themselves and with their patients and caregivers.

Objective:

Identify recent ICTs (from 2001 until today) and evaluate them through the following question:
What is the effectiveness of ICT for facilitating self-management of chronic conditions for home-dwelling elderly persons?

Methodology:

Figure 1: Study flow diagram

363 potentially relevant articles identified through literature searches
352 in Medline Ovid, 2 in PubMed, 7 in Google Scholar and 2 through bibliographic searches

→ 299 excluded after review of titles and abstracts
Reasons for omission:
- Duplicate
- Outcome measures not relevant
- No mention of ICT

64 full-text articles assessed

→ 56 excluded after review of text
Reasons for omission:
- No evaluation of established ICT, only mention of EHR
- Outcome measures not relevant
- Does not pertain to target group

6 articles included in review

Results:

- Most developed ICTS only include EHR. Very few add other communication technologies such as a messaging system, that would facilitate conversations between elderly persons and healthcare professionals as well as let them self-manage their care
- Successful technologies included training sessions (5) . The lack of participation by the elderly is due to low computer literacy (2)
- Healthcare professionals have also seen benefits in the use of ICTs
- The simplest ICT works best for the elderly. Demands for an easier access to the ICT, such as on tablets, were also made. (5)
- Building on one government based system, such as done with PRISMA, resulted in one centralised technology instead of many, no extra costs, and work on policies so that all health records would be shared with all healthcare professionals (1)
- Because of policies, healthcare records cannot be accessed by private practicians (6)
- The only Cochrane study found related to this subject was a study protocol (7)

Table 1: ICTs available for seniors with chronic conditions

Name & Type of ICT	Targeted Population	Outcomes
PRISMA -(Program of Research to Integrate the Services for the Maintenance of Autonomy); 6 facets and the technological aspect is a computerized client chart (1)	Elderly people with chronic conditions	- Less emergency room visits - Lowered unmet needs - Increased client satisfaction & empowerment - No effect on costs
ZWIP -Online Health Community for patients and professionals, includes EHR & messaging system (2) (3)	Frail older people requiring long-term care	- Small % of elderly used ZWIP (26%) - 84% health professionals used it once or more - Didn't improve patient outcomes - 77% believed help desk necessary
EHR (Electronic Health Records) (4)	Elderly persons	- Seniors felt information was easily available - Trust in healthcare professionals, no deep concern on sharing their HR
Web self-monitoring tool (symptoms and exercise) -Required daily input by patient (5)	Older Adults With Chronic Obstructive Pulmonary Disease	- With training session and paper manual, elderly found system quick and easy to use - Some found it hard to remember and to do it everyday

Conclusions:

- There is a need for more research and more development of ICT that can help home-dwelling seniors with self-management of chronic conditions and coordinating care
- These technologies need to be adapted to the elderly (simple, user-friendly) and accessible on different devices (computers, tablets etc.)
- Training on the use of the technology is necessary for both the professionals and the elderly
- Involvement of government may lead to centralisation of one technology and limit development of private funded technologies.

Limitations:

- Only ICTs that were in publications were included
- Very small size of sample for results and analysis

Figure 2: Elderly person using ICTs with the help of a healthcare professional (8)

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