

Facilitators and Barriers to Health Information Technology Adoption in Long-Term Care During COVID-19: A Systematic Review

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Background

This is a systematic literature review about the intersection of two broad topics: health information technology (HIT) and long-term care (LTC). These two topics are only loosely related largely due to their omission from the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009. For health organizations eligible for Meaningful Use incentives from the HITECH Act, EHR adoption rose from 3.2% before to 14.2%, while ineligible organizations rose from 0.1% to 3.3% [1]. LTC facilities were not listed as eligible for Meaningful Use incentives for the adoption of HIT under HITECH. Adoption of HIT in LTC before HITECH was dismal, and afterwards it was not much better.

While adoption of HIT has been observed as slow in LTC facilities, the presence of COVID-19 has forced healthcare professionals to rapidly adopt telemedicine, which requires HIT as a base infrastructure [2]. It is possible the pandemic may have served as a catalyst for LTC facilities.

Rationale and Objectives

In 2018, researchers examined the socio-technical practices in LTC of older persons [3]. Through the interview of 25 Finnish LTC workers, researchers found the EHR improved workers' accountability, but the workers found the EHR to be disorganized, unrefined, and burdening. This work was prior to COVID-19, and researchers failed to analyze health outcomes.

In 2020, a systematic review was published on HIT and LTC [4]. Researchers analyzed 99 articles and made recommendations along five domains: strategy/vision, continuing care community, services and support provided, external clinical support, and administrative. This review did not include COVID-19 implications, and it did not analyze health outcomes.

The purpose of this review is to analyze the facilitators and barriers to the adoption of HIT in LTC during the COVID-19 pandemic. Through the analysis of 2 years of literature, this review will identify factors both in favor and working against the adoption of HIT in LTC, and it will note any increase in adoption as a result of COVID-19.



Methodology

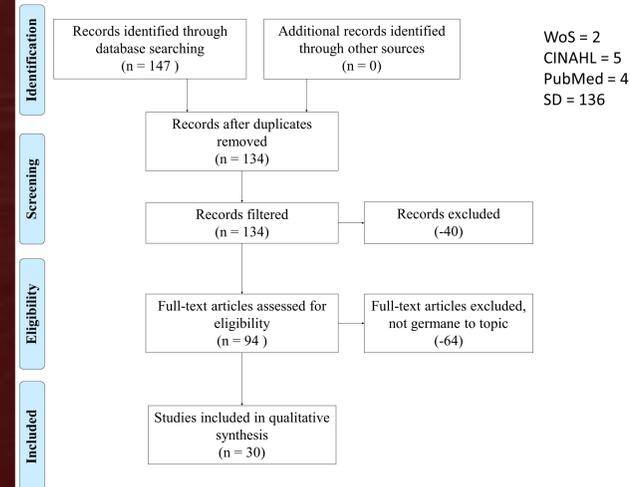
This review was conducted in accordance with the Kruse Protocol for writing a systematic review and reported its findings in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) [5, 6]. Authors set search parameters to look for articles published in 2020 and 2021.

Google Scholar was initially consulted to gather information on the topic and determine what had already been published. We then created a Boolean search string to combine key terms from several articles found in Google Scholar. We typed key terms into the Medical Subject Headings (MeSH) of the U.S. Library of Medicine to create a robust and exhaustive string.

("electronic health records" OR "electronic medical record" OR "health information technology") AND ("long term care" OR "skilled nursing facility" OR "assisted living") AND COVID-19

We used the same search string in all databases. We attempted to use similar filter strategies, because not all databases have the same tools. Once the search string was entered into each database, we filtered results and screened abstracts for applicability.

The search string was entered into four databases: Web of Science, CINAHL, Pub Med, and ScienceDirect. An initial total of 147 articles were identified. Articles not germane to the research topic were excluded. After duplicate articles were removed, an analysis abstract was conducted, and the addition of exclusion criteria, the final total of articles was 34.



Analysis

This research analyzed the facilitators and barriers to health information technology identified by researchers. This research is currently ongoing therefore these themes listed below were found to be common throughout the analyzed literature.

Study	Facilitators	Barriers
Se Young Jung, Keehyuck Lee, Ho-Young Lee, Hee Hwang, Barriers and facilitators to implementation of nationwide electronic health records in the Russian Far East: A qualitative analysis	Strategic plan by government, centrally managed systems, health information exchange, willingness to use new functions, well-established work processes	Lack of communication between hospitals and the government, insufficient system development environment, poor adoption of standard technology, poor infrastructure, resistance to new platform, poor functionality
Serena P. Wong, Heather N. Jacobson, Jennifer Messingill, Heidi K. White, Mamata Yanamadala, Safe Interorganizational Health Information Exchange During the COVID-19 Pandemic	Strong partnership between SNFs and hospital, technology widely available at all SNFs, low burden for users, timely, secure, sustainable	Limited technological resources, data integration delay
Brandon P. Verdoorn, Mairead M. Bartley, Lori J. Baumbach, Anupam Chandra, Kyle M. McKenzie, Maria Mendoza De la Garza, Daniel E. Sanchez Pellecer, Tina C. Small, Gregory J. Hanson, Design and Implementation of a Skilled Nursing Facility COVID-19 Unit	SNF and health systems collaboration, improved communication	Limited resources, implementation difficulty

Findings and Conclusion

A final total of 34 articles were chosen for analysis. This systematic literature review allowed for the evaluation of facilitators and barriers to health information technology in long term care during COVID-19. The adoption of health information technology in long term care has been slow, but when it is present it provides great value. The COVID-19 pandemic has impacted the adoption of health information technology and will continue to do so.



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For a complete set of references, please contact one of the authors.

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