

Toward Effective and Efficient Health IT Adoption in Home Healthcare: A Qualitative Investigation of Maryland Home Health Agencies



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HEALTH information technology (HIT) becomes a critical tool in home healthcare as its utilization increases. Compared to other types of healthcare providers, HIT adoption levels among home health agencies (HHAs) have traditionally been lower.¹ Furthermore, various eligibility issues prevented HHAs from receiving financial incentives for adopting electronic health records (EHR),² which can be considered among essential HIT systems. Most HHAs in the United States (US) are in a position to adopt HIT solutions in highly budget constrained settings where it is crucial to achieve effective and efficient HIT adoption. In this context, effectiveness means creating the maximum value possible with limited resources; efficiency means minimizing the overheads of HIT adoption. We conducted a qualitative study to obtain rich contextual information strengthening the evidence base about the (i) HHAs' challenges and opportunities related to delivering care and conducting business, which should derive HIT adoption strategies and decisions to achieve effectiveness (ii) contextual determinants of HIT adoption that should be managed to achieve efficiency by minimizing overheads.

Methods: Semi-structured phone interviews were conducted with the executives and managers of thirteen Maryland HHAs. Maximum variation was used in recruitment by considering the HHAs' size, organization type, business model, geographical areas served, and age. For each recruited HHA, one interview was conducted involving either two participants, one knowledgeable in HIT and the other in home care, or involving only one participant knowledgeable in both areas. The topical areas were based on (i) a number of established systems analysis techniques such as problem analysis, duration analysis, activity-based costing, outcome analysis, and technology analysis to document the HHAs' challenges and opportunities (ii) the constructs in the Rogers' diffusion theory³ to uncover the contextual determinants of adoption. The interview transcripts provided the raw data analyzed using the Framework method.⁴⁻⁷ The analysis of qualitative data included constructing an index, open coding, summarizing and sorting, and eliciting descriptive and explanatory accounts.

Results: (i) Coordinating clinical and administrative work flows was stated as an important challenge. Complying with the strict and changing Federal rules for reimbursements, therapy assessments, and physician approvals was described as excessively time consuming and costly, particularly for smaller HHAs. It was reported that HHAs use telephone and fax as the primary means of health information exchange (HIE). Most participants complained about not having adequate access to patients' medical history during admissions. Hiring and training qualified clinicians was considered to be a challenge for HHAs. Some participants noted that the scheduling and training difficulties increase greatly as the number of part-time employees increase. Educating and training patients and caregivers was found to improve outcomes, but it required overcoming cultural, educational, and age-related barriers. Smaller HHAs experienced significant difficulties with getting referrals. (ii) Most HHAs lacked defined processes for analysing their HIT requirements driven by their actual improvement needs, evaluating alternative HIT solutions, and making HIT adoption decisions. Perceived complexity of using HIT was mentioned as a challenge but the HHAs were able to train most clinicians successfully if their training budgets allowed. Still, the participants mentioned that using EHR at patients' home presented usability issues which sometimes detracted from the quality of interaction. The participants perceive HIT to be useful but they said the opinions varied among their clinicians. While larger HHAs customized HIT solutions to a certain extent, most HHAs avoided customization to prevent future problems. Vendor lock-in occurred commonly because HHAs lacked in-house IT resources and tried to reduce the compatibility issues between the existing and new systems. HHAs' service-oriented social norms and values were found to be consistent with using HIT for improvement. The participants valued peer advice and used their association as a communication channel to increase their HIT awareness and knowledge.

Discussion: It seems that HHAs' clinical, administrative, and management functions require a strong coordination which can benefit from HIT. Increasing HHAs' awareness about existing HIE capabilities and developing better HIE infrastructures could improve the quality of care by facilitating admissions and care delivery. Education and training of patients and caregivers is a promising area for quality improvement. Regulatory agencies should consider that frequent changes in regulations will require changes in HIT systems increasing HHAs' costs.

Conclusion: The majority of the participating HHAs have made considerable progress in HIT adoption without receiving

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financial incentives. Most of them were interested in increasing their HIT adoption levels. Developing an evidence-based HIT adoption environment and culture is likely to benefit HHAs in their HIT projects.

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