

Going Digital: Adoption of Electronic Health Records in Assisted Living Facilities

BACKGROUND

The 2009 federal Health Information Technology for Economic and Clinical Health (HITECH) Act allocated \$27 billion to doctors and hospitals to promote the use of electronic health records (EHR) to improve the quality and safety of health care, eliminate inefficiencies, reduce costs, and encourage greater patient engagement. Although the benefits of EHRs are theoretically promising, adopting meaningful use of this technology has proven difficult. Preliminary 2010 estimates indicate that 44% of U. S. hospitals and 50.7% of outpatient practices reported using EHR systems. Currently, qualified health centers, rural clinics, children's hospitals, and physicians' offices are eligible to receive Medicare and Medicaid incentives payments to adopt EHRs, however, long-term care providers are not eligible for such incentives.

Although ALF residents have been found to not differ from nursing homes residents with respect to depressive symptoms, physical impairments, behavioral problems, and changes in morbidity, ALFs are not a healthcare facility leaving residents vulnerable to a multiple hospitalizations and mismanagement of medications. Consequently, EHR integration into ALFs may improve residents' health outcomes and reduce unnecessary healthcare expenditure.

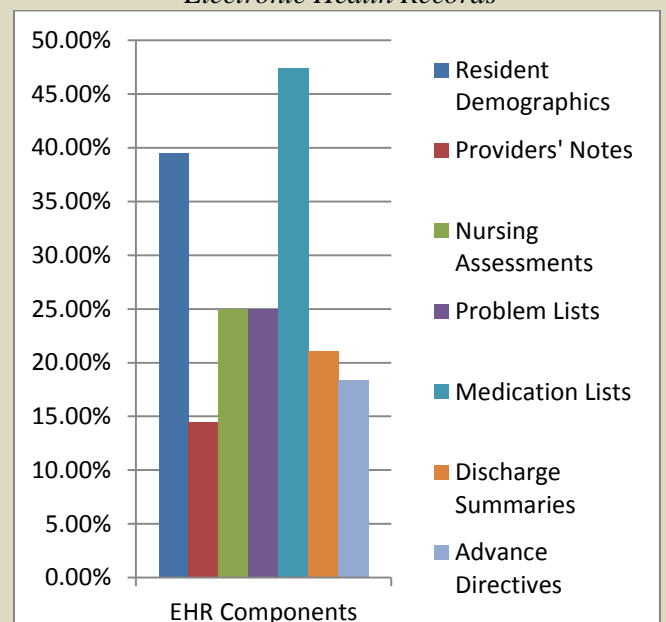
STUDY METHOD

A sample size of 579 survey participants from the 2768 licensed assisted living facilities and 490 licensed adult family care homes in Florida from 2009 was used based initially on achieving a sample size close to 300 for 80% power for logistic regression analysis for study outcomes. A total of 76 ALFs completed the survey (11.2% response rate). Respondents and non-respondents were similar with respect to facility size, licensure type, and profit status (not reported here). Sample strata only differed between respondents and

non-respondents for the low category with fewer small facilities responding to the survey.

A questionnaire was developed to examine the availability of different EHR components in ALFs. The survey also assessed structural characteristics of the facility based on the structure, process, outcome model. Staffing measures included the number of full-time equivalent (FTE) registered nurses (RN), licensed practical nurses (LPN), and personal care aides (PCA). Resident case mix was described by the percentage of females, Caucasians, those with a diagnosis of dementia or Alzheimer's disease, those requiring assistance with 3 or more activities of daily living (ADL), and primary payment source as either Medicaid or private funding. Licensure type and status as a for-profit, publically traded corporation were also examined.

Figure 1: Percentage of AL Communities Using Electronic Health Records



FINDINGS

Descriptive statistics were used to examine the frequency of EHR use in AL facilities. To study the relationship between structural characteristics in AL facilities and EHR use bivariate correlations were used. Separate logistic regression models were conducted on EHR outcomes that had significant associations at the bivariate level. Four EHR components (resident demographics, nursing assessments, problem and medication lists) had predictors with significant associations. Predictors that were included in the logistic regression models were facility size, RN and LPN staff, profit status, and specific resident case mix variables including the percent of Caucasian residents.

The findings of this study provide the strongest evidence to date that ALFs are currently utilizing EHRs. Although, considerable variability exists in the proportion of ALFs using EHRs, the technology is most often used to record resident demographics and medication lists. Study findings have indicated that the use of EHR in ALFs is based on organizational characteristics with profit status serving as the strongest predictor of this technology for documenting medication lists, problem lists, nursing assessments, and resident demographics. Although there is no research on this topic for ALFs, the finding that profit status is associated with EHR use for several domains did not follow the direction suggested by existing research in nursing homes. Considering the costly initial investment for establishing and maintaining this technology, for-profit communities may have the financial infrastructure to adopt EHR earlier than other facilities. Additionally, since AL facilities opt to implement specific components with others being used less often, EHR may be implemented in stages with the use of this technology best modeled by a continuum of applicability instead of the current dichotomy.

POLICY IMPLICATIONS

The benefits of EHR use in ALFs may be demonstrated through a reduction in the number of avoidable hospitalizations and medication errors. The presumption is that ALF residents will benefit through

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Figure 2: Logistic Regressions Predicting Use of EHR Components

	B	S.E.	Wald	Odds Ratio
<i>Resident Demographics</i>				
Total Beds	.013	.011	1.571	1.013
FTE RN & LPN	.012	.076	.023	1.012
FTE PCA	.006	.036	.030	1.006
Resident Percent Caucasian	.013	.008	2.475	1.013
For Profit, Publicly Traded	2.501*	1.174	4.541	12.197
Constant	-1.934	1.085	3.176	.145
<i>Nursing Assessments</i>				
Total Beds	.019	.008	5.985	1.020
For Profit, Publicly Traded	2.865**	.927	9.556	17.552
Constant	-2.842**	.653	18.94	.058
<i>Problem Lists</i>				
For Profit, Publicly Traded	1.891**	.720	6.891	6.625
Constant	-1.485**	.320	21.58	.226
<i>Medication Lists</i>				
For Profit, Publicly Traded	1.728*	.830	4.338	5.630
Constant	-.342	.252	1.844	.711

*p<.05; **p<.01

widespread implementation of EHR across community and acute care settings by reducing system inefficiencies and costs.

Future studies will have to consider innovative ways to conduct research about smaller, adult family care homes. A key limitation rests in the fact that this study only examined the use of EHRs in ALFs and not the duration of use or the availability of the technology. Future research in this area should explore how barriers to availability and implementation affect the extent to which this technology is used and how it is implemented.

Many policymakers believe that the adoption and subsequent use of EHRs are essential to improving the quality and efficiency of the U.S. healthcare system. Implementing EHR in community care settings including ALFs enables immediate, electronic access to an individual's health record, which can result in more efficient, integrated care across healthcare settings. Further studies that examine the availability and barriers to adopting EHRs across community care settings will be necessary to advise the development of policies and improve the quality of care delivered across the healthcare system.