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Feature Article

Eliciting nurses' perspectives to improve health information exchange between hospital and home health care

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ABSTRACT

Despite patient safety initiatives to improve care transitions, prior research largely neglects to elicit feedback from home health nurses regarding health information exchange. The goal of this quality improvement study was to identify opportunities to facilitate information transfer during hospital-to-home-health-care transitions for older adults with heart failure. We conducted focus groups with 19 nurses employed by a single healthcare system using two commercially available electronic health record (EHR) vendors. We analyzed interview transcripts following an immersion/crystallization approach to identify themes. Average participants were females in their mid-fifties with 15 years of home health experience. Nurses reported challenges with hospital-to-home-health-care information exchange, specifically: 1) poor medication management, 2) ineffective communication, 3) technology issues, and 4) patient factors. Nurses identified several opportunities for improvement, including discordant EHR-generated medication lists, which may be amenable to technological solutions. Local quality improvement efforts should incorporate nurses' suggestions and leverage existing best practices.

Introduction

Nearly 25% of older adults receive home health care referrals following a hospital admission for heart failure.[1,2] This population is particularly vulnerable to adverse events, including hospital readmission rates that exceed those from other post-acute care settings.[3–6] Ideal care transitions require complete communication of patients' health information in a timely, clear, and well-organized manner.[7] Several care transitions models exist, which geriatrics health care professionals can use to guide care for older adults across various care settings.[8] Yet a critical challenge is the lack of interoperability among electronic health record (EHR) systems between hospitals and post-acute care settings, including home health care agencies, which create gaps in care coordination and threaten safe medication management.[9–14]

Home health care nurses report several barriers to safe home care transitions, including incomplete communication and inadequate medication reconciliation.[15–18] A large quantitative study found all older adults referred to skilled home health care from the hospital had at least one medication discrepancy between hospital-generated and home health care-generated medication lists.[19] Home health care nurses must clarify these discrepancies, but ambiguity in provider accountability following hospital discharge makes it difficult for nurses to reconcile discordant information and enact care plans.[15,20,21] This problem is critical because poor nurse-to-physician communication is associated with increased likelihood of hospital readmission among high-risk patients with heart failure.[22]

Despite patient safety initiatives to improve care transitions, prior research largely neglects to elicit feedback from home health care nurses to inform quality improvement efforts.[23] Qualitative studies are essential to clarify the extent and complexity of challenges front-line nurses face when caring for older adults in their own homes. As such, ideas generated from nurses through interviews and/or focus groups should be used as prerequisites to developing local quality improvement efforts. One group elicited nurses' ideas to improve care coordination during hospital-to-home-health-care transitions, however the study did not address interoperability between EHRs across sites of care.[15] Another group identified opportunities to improve transitions in home health care settings using health information technology, yet their study employed a single, internally developed EHR, so results may not be applicable to agencies using

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two (or more) commercial EHR vendors.[13] Our qualitative study summarizes results of focus groups with home health care nurses who practice in a single healthcare system using two commercially available EHR vendors: Epic in the hospital and McKesson in home health care. Our goal was to identify opportunities to improve the flow of relevant information to home care nurses, their patients, and informal caregivers during care transitions from hospital to home.

Methods

Setting and participants

We interviewed home health care nurses employed by a university-affiliated health system, which operates a 733-bed acute care hospital and its own home health care agency, together serving more than 500,000 residents in the Mid-Michigan area. The health system uses Epic EHR in the hospital and McKesson EHR in its home health care agency. The typical workflow for generating hospital-to-home-health-care referrals is complex and consistent with others' reports.[24] Given the lack of interoperability between EHR vendors, agency-employed nurse liaisons summarize data from hospital records into a "referral information" note to supplement EHR-generated documents printed from Epic. The home care agency collates these hard-copy documents into a folder, which start-of-care nurses review prior to their first home visit (Fig. 1).

The home health care agency employs 50–60 nurses with direct patient care responsibilities. The agency director invited 29 nurses to participate based on their availability (home visit schedule). We performed purposeful sampling to include home health care nurses working weekdays and weekends, and those admitting patients to home care (start-of-care nurses) and continuing care in the home (nurse case managers).[25] Based on others' work, we anticipated thematic saturation with a sample size of twenty.[16,26] Overall, 19 nurses provided verbal assent, signed in, and completed an anonymous survey before beginning their focus group session. In addition, participants were informed of their right to opt-out of the session at any time without threat of punishment. The agency was reimbursed for nurses' time, which paid for hours outside of patient care activities. The university and affiliated health system's institutional review boards declared our work a quality improvement initiative and designated an exempt status (#16–1364 and 1681Q).

Measurements

We conducted four focus groups with 19 home care nurses between May – August 2017, with an average of five participants per session. First, we used a brief written survey to assess nurses' demographics, experiences in home health care, and confidence using EHRs. Next, we prefaced each focus group by asking nurses to recall recent encounters with older adults admitted to home health care following a hospital admission for heart failure. This population is a high priority locally and nationally due to higher-than-average hospital readmission rates. We used a semi-structured interview guide, informed by others' research reporting nurses' perspectives of hospital-to-home-health-care transitions, to conduct each focus group session (Appendix).[16,17] Briefly, we asked participants to describe the information they receive prior to their first home visit and then inquired about prioritizing relevant information. Lastly, we elicited nurses' ideas to improve communication between the hospital and home health care agency, including health information technology and health information exchange to support EHR interoperability.

The principal investigator (ES), moderated each focus group session and two co-investigators (ME, LH) served as facilitators and took notes. Each session was conducted in-person in a private conference room and lasted 40–60 min. All focus groups were digitally recorded, transcribed verbatim and de-identified by a professional transcriptionist, and assessed for accuracy.[25] Three investigators (ES, LF, LH) reviewed transcripts to evaluate for emergence of any new information. We achieved thematic saturation – where no additional themes emerged from the data – after conducting four focus groups.

Data analysis

We provide descriptive statistics to summarize baseline characteristics of the home health care nurses we interviewed. Three investigators (ES, LF, LH) examined transcripts following an immersion-crystallization approach.[25] The immersion/crystallization analytic process requires investigators to immerse themselves into the interview text – reading and re-reading transcripts of audio recordings – then emerge after purposeful reflection with intuitive crystallizations, until reaching reportable interpretations (identifiable themes). Investigators read transcripts independently and then as a team in sequential horizontal passes to ask questions of the data, identify themes,

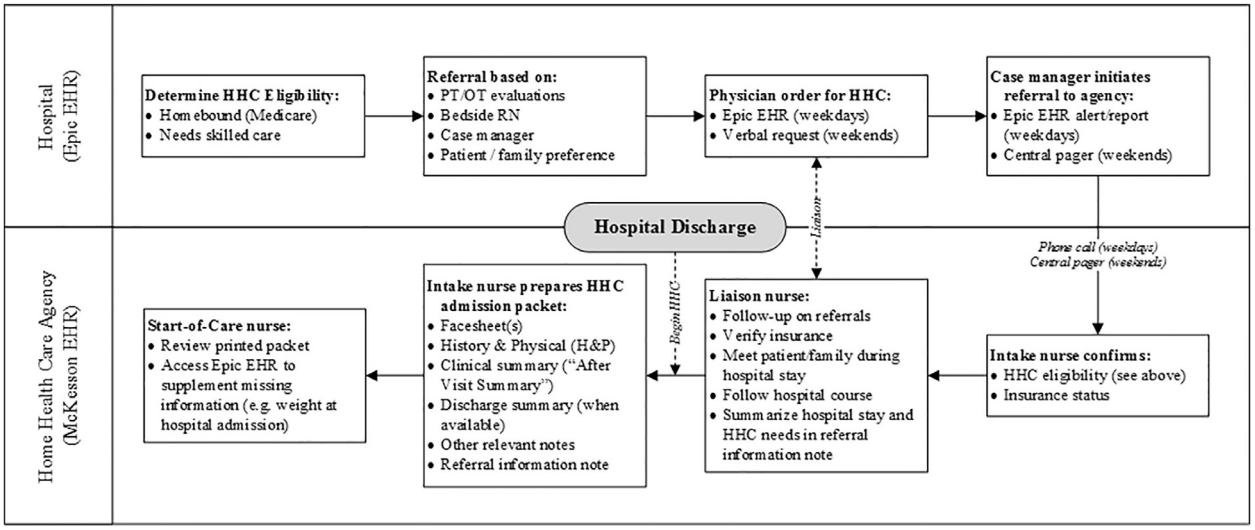

Fig. 1. Typical workflow for hospital referrals to home health care agency EHR = electronic health record; HHC = home health care; PT = physical therapy; OT = occupational therapy; RN = registered nurse.

and consider alternative understandings. Next, they iteratively discussed disagreements and classifications to achieve consensus regarding a coding process to reflect central themes and sub-themes.[27] Finally, the same investigators applied the coding process to all transcripts, resolved disagreements by negotiated consensus, and identified representative quotations.

Results

Nineteen home health care nurses participated in one of four focus groups in 2017 (each group included 4–6 nurses), generating three hours and thirty-two minutes of audio recordings. On average, participants were middle-aged (51–65 years old) females with an Associate's Degree in Nursing and at least 15 years of home health care experience (Table 1). Most nurses (77%) reported confidence in using EHRs and other health information technology.

Nurses identified four challenges with health information exchange during hospital-to-home-health-care transitions (themes): 1) poor medication management, 2) ineffective communication, 3) technology issues, and 4) patient factors. Within each theme, home health care nurses consistently identified several barriers (sub-themes). For example, nurses identified specific barriers to safe medication management in home care, including: a) discordant EHR-generated medication lists, b) issues clarifying medication regimens, c) barriers to filling medications, d) complexity of medication self-management tasks, and e) side effects affecting quality of life (Table 2). Herein we provide representative quotations to exemplify each of the four themes, with emphasis on challenges to safe medication management. Next, we highlight nurses' suggestions to improve health information exchange from the hospital to home health care setting. Finally, we match nurse-identified barriers (sub-themes) with relevant best practices from the literature (Table 2).

Table 1
Characteristics of Home Health Care Nurses (n = 19).

Characteristic	Value
Age Range	
20–35 years	23.5%
36–50 years	23.5%
51–65 years	52.9%
Gender	
Female	100%
Highest Degree Earned	
Associate's Degree	58.8%
Bachelor's Degree	41.2%
Years as Nurse	
5–15 years	29.4%
16–25 years	5.9%
26–35 years	64.7%
Years as HHC Nurse	
< 5 years	29.4%
5–15 years	29.4%
16–25 years	35.3%
26–35 years	5.9%
Hours worked per week in HHC	
21–30 h	6.3%
31–40 h	31.3%
> 40 h	62.5%
Previous experience as a hospital nurse	
Yes	94.1%
No	5.9%
Level of confidence using health information technology (e.g. EHRs)	
Not at all confident	0%
Not confident	11.8%
Somewhat confident	11.8%
Confident	47.1%
Very confident	29.4%

HHC = home health care; EHR = electronic health record.

Theme 1 – poor medication management

Home health care nurses reported issues with medication management within the first minute of each focus group session. Participants indicated Epic EHR produced discordant medication lists at the same critical point in time – hospital discharge. Specifically, medication lists embedded within the clinical summary (also known as "After Visit Summary," intended for patients) and discharge summary (intended for receiving clinicians) often contained discrepancies.

> *The list printed off in our packet when we go out to do the start [of care] is different than the list the patient brings home from the hospital, even though they both come off of Epic [EHR]. (Focus Group D)*

Nurses also observed hand-written modifications to EHR-generated medication lists when clinicians printed patients' discharge documents before updating the medication reconciliation process in Epic.

> *Preferably make changes [to After Visit Summary] before they [clinicians] print it out because we get a lot of patients where the nurse has gone through and [writes], "STOP," and I don't know if it's been approved by a physician… so it needs to be corrected and then printed. (Focus Group A)*

Discordant medication lists made reconciling patients' medication regimens a time-consuming process, since nurses must contact [multiple] providers to clarify discrepancies.

> *It takes a very long time [medication reconciliation]. It can be an hour… and that's only the in-home stuff, not calling their doctor to figure it out, then calling the patient back and telling 'em what to take. (Focus Group C)*

Local quality improvement approach. Given the challenge of clarifying patients' medication regimens, the health system implemented a protocol-driven order set in Epic EHR to allow home health care nurses to adjust patients' diuretics immediately following hospital discharge (prior to the first home visit). An evaluation of this protocol is ongoing.

Theme 2 – ineffective communication

Given the focus on older adults with heart failure, nurses reported discharge documentation often omitted key information, such as a patient's ideal weight.

> *[No indication of] Their target weight—what you want them to stay… in the discharge summary it'll say, "diuresed well," but did they lose 20 pounds of fluid? How much fluid did they gain [to prompt hospital admission]? (Focus Group C)*

Home health care nurses suspected patients are overwhelmed during their hospital stays, which may limit the effectiveness of hospital-based [print] educational strategies.

> *What happens in the hospital – they're handed a whole wad of papers [e.g. EHR-generated discharge documents] in a notebook, and it's like they don't know what it is, or what they're supposed to do with it, so they're overwhelmed with information, particularly the older population. (Focus Group B)*

Nurses indicated challenges working in two different EHR systems, including conflicting or incomplete information. Therefore, agency staff created workarounds, such as employing nurse liaisons

Table 2
Home Health Care Nurses' Perceptions of Health Information Exchange from Hospital to Home.

Themes (Challenges) and Sub-Themes (Barriers)	Potential Strategies to Address Challenges
Theme 1 – Poor Medication Management	
Inaccurate medication lists (e.g. poor medication reconciliation)	Prioritize [acute and post-acute] medication reconciliation,[21,42,43] and maintain a single, updated medication list across all sites of care[14,39]
Issues clarifying patients' medication regimens	Eliminate redundant sources of information (e.g. clinical summary and discharge summary),[32,44,45] and implement protocols for HHC nurses to adjust key medications (e.g. diuretics) prior to patients' first outpatient follow-up visit[c]
Patients' barriers to filling medications	Involve pharmacists[46] and consider a "Meds-to-Beds[a]" program[47,48]
Complexity of medication self-management tasks	Simplify medication regimens[49]
Side effects of medications (e.g. incontinence with diuretics)	Involve pharmacists[46]
Theme 2 – Ineffective Communication	
Ineffective clinician-to-clinician[b] communication (e.g. inconsistent messages regarding care plans)	Identify all members of patients' care teams and facilitate synchronous and asynchronous communication about goals and care plans[50]
Ineffective clinician-to-patient communication (e.g. patients overwhelmed, need to improve delivery of patient-centered education)	Incorporate health literacy best practices (e.g. plain language materials, teach-back, etc.)[51,52]
Ineffective system-to-system communication (e.g. lack of EHR interoperability)	Identify and prioritize relevant information to share across care transitions,[11,12,39,40] and expand the role of HHC nurse liaison[c]
Poor EHR-generated documentation – too much information, but lacking essential data (e.g. labs, dietary/fluid restrictions, target weight, ejection fraction, and code status)	Cull out relevant information; eliminate extraneous data; modify EHR templates to auto-populate key information[35,53]
Ambiguity in clinicians' roles and responsibilities between hospital discharge and outpatient follow-up appointments (lack of accountability)	Negotiate clinicians roles and responsibilities for each aspect of care transition[15]; communication regarding each clinicians' scope of practice[20,21]
Issues accessing relevant information (e.g. contacting multiple providers to clarify medication discrepancies) and resources (e.g. arranging oxygen or supplies), especially on weekends	Standardize policies and procedures for weekends and "after-hours;" facilitate synchronous and asynchronous communication[50]; direct phone lines for HHC nurses[15]
Theme 3 – Technology Issues	
Issues with hardware and software (e.g. old computers and multiple EHRs)	Institutional support; standardize access and screen views
Insufficient training	Refresher training courses in hospital-based EHR[c]
Poor connectivity (e.g. no signal in remote areas)	Invest in mobile WiFi hotspots
Inefficiencies (e.g. double documentation)	Advance EHR interoperability[11,12,39,40]
Theme 4 – Patient Factors	
Limited health literacy	Screen for health literacy and document in EHR[54]
Social determinants of health (e.g. financial, transportation, home environment, etc.)	Screen for social determinants of health and document in EHR[55,56]
Functional limitations (e.g. low mobility, cognitive impairment, or hearing/vision loss)	Identify goals of care; screen for functional limitations and document in EHR[57]
Ineffective informal caregiver (e.g. caregiver has own functional limitations, caregiver absent, etc.)	Identify caregiver and his/her contact information; screen for caregiver's capacity to provide care[57]

[a] Meds-to-Beds program = provide patients with a few days of all medications during hospital discharge process, which allows patients and receiving clinicians time to clarify discrepancies and fill prescriptions
[b] Clinician = physician, nurse practitioner, physician assistant, and registered nurse
[c] Nurses' suggestions from focus group sessions
HHC = home health care

to summarize information in Epic EHR to inform the start-of-care nurses' first home visits, which was subsequently re-documented in McKesson EHR. Despite these workarounds, nurses frequently asked patients or caregivers to supplement missing information.

> *Our referral information note [summary] doesn't always capture every nuance of the hospital stay… it's good, but it's not complete. (Focus Group C)*

> *We ask the patient. That's where we get our information [laughs]. (Focus Group A)*

Weekends magnified several barriers to health information exchange, since communication with providers is more difficult when offices are closed and "on-call" physicians are largely unaware of patients' complex post-acute care plans. Moreover, participants had difficulty troubleshooting issues with technology outside of normal business hours.

> *It's tougher on the weekends that's for sure… I mean, there's been times when on the weekend we don't get any information, and I go in and I'm totally punting when I go into a home… (Focus Group B)*

> *It's easier to deal with on Monday morning than on a Friday night… It gives us a chance to call docs and say, "Hey they can't afford this. Can we get the cheaper whatever?" A lot of the physicians don't know how much this stuff costs. (Focus Group A)*

Local quality improvement approach. Currently, the home health care agency is re-evaluating the role of nurse liaisons, including prompts to collect key information (e.g. target weight, social determinants of health, and reliable contact information for hospital providers to troubleshoot issues "after hours" and on weekends) during patients' acute hospitalization, which is not routinely included in EHR-generated discharge documents. In addition, the agency standardized its referral process to maintain consistency after hours and on weekends.

Theme 3 – technology issues

Nurses struggled to obtain relevant information from the hospital-based EHR to augment data missing from admission packets, which contain "referral information" notes (summaries written by liaison nurse) and several documents printed from Epic EHR.

> *It can be time-consuming [to access information in Epic EHR]. You can get lost in there very easy, and… there's no specific place to really even look— You have to go in several different… orders, doctors' notes… labs, and you have to know how to navigate… (Focus Group C)*

Participants also relayed issues with their hardware and software, or losing internet connections when providing care in patients' homes.

I want the paper because if the computer fails I still got the paper... (Focus Group A)

Local quality improvement approach. Pending transition to a single EHR vendor across all sites of care, the health system provides home health care nurses with read-only access to Epic EHR to review hospital records. Nurses indicate hospital EHR access is necessary, but not sufficient to improve communication, and suggested additional training and refresher courses in Epic EHR (ongoing). Moving forward, expanding the role of nurse liaisons may mitigate the inefficiencies of accessing two EHR systems, which start-of-care nurses report is frustrating during home visits (Theme 2).

Theme 4 – patient factors

Participants routinely witnessed problems for patients with limited health literacy. For example, EHR-generated discharge documents rarely incorporate health literacy best practices.

The med they have in their home or they're familiar with needs to be listed. If they take Lasix it needs to say Lasix, and I know they have both names there, but if they have furosemide, it needs to say furosemide. [confusion about drugs: Trade name versus *generic name] (Focus Group A)*

Nurses identified challenges in providing care in patients' homes, which compared with the hospital setting, is a less structured environment. For example, nurses desire alerts about social issues, such as illicit drug use in the home, which could affect their care plans (e.g. securing narcotics to prevent diversion).

The hospital's like going to the theater... Here [home health care] is like attending the circus! (Focus Group A)

Finally, participants shared concerns about the reliability of patients' informal caregivers.

One family member fills the pillbox, and then takes the pills [bottles] home or something, and then you don't know what's in there... You don't know if they're getting the right dose of Lasix... (Focus Group C)

Local quality improvement approach. Again, there is an opportunity to expand the role of agency-employed nurse liaisons to summarize patients' health information that is not routinely collected in EHR-generated discharge documents.

Overall, these insights from home health care nurses highlight opportunities to improve health information exchange relevant to older adults receiving skilled home health care services following a hospital admission for heart failure. Local quality improvement efforts should incorporate nurses' suggestions and leverage existing best practices (Table 2).

Discussion

Our qualitative study interviewing home health care nurses identified four challenges to reliable health information exchange between hospital and home health care agency: 1) poor medication management, 2) ineffective communication, 3) technology issues, and 4) patient factors (e.g. limited health literacy). Among these themes, we identified barriers (sub-themes) based on nurses' insight while providing care to older adults in their homes following a hospital admission for heart failure. Of particular concern, nurses reported discordant EHR-generated medication lists embedded in two unique discharge documents – clinical summaries (intended for patients) and discharge summaries (intended for providers). Given concerns for patient safety, this discordance requires a systematic evaluation to identify potential solutions.

Our work adds to emerging literature that highlights vulnerabilities among a growing population of older adults receiving skilled home health care services following an acute hospitalization.[2,4] One qualitative study elicited nurses' ideas to improve care coordination during hospital-to-home-health-care transitions and recommended enhanced access to hospital records to augment communication.[15] Our results support this recommendation, but with an important caveat – EHR access is necessary, but not sufficient to overcome ineffective communication. Nurses in our study reported working in two EHR systems, which is inefficient and requires multiple trainings and refresher courses. Moreover, duplicate documentation – both within Epic (clinical summary *and* discharge summary) and between Epic and McKesson (re-documenting medication lists and care plans) – perpetuates concerns for discordant information.

Qualitative studies with nurses indicate medication management is a critical barrier to safe home care transitions.[15–17,28] Numerous care transitions models emphasize the importance of medication management, particularly for older adults with heart failure, yet implementation remains challenging.[7,29–31] A recent study assessed the medication management process during hospital-to-home-health-care transitions and found home healthcare nurses spanned multiple work systems (hospital, agency, and patients' homes) to ensure safe medication management.[21] Similarly, we found nurses spent considerable time trying to clarify patients' medication regimens when hospital discharge documents containing EHR-generated medication lists were discordant or incomplete. Ours is another example of upstream errors (discordant discharge documents) propagated downstream, which home healthcare nurses attempt to resolve with limited resources. These common experiences, together with reviews of a pilot study assessing health information exchange of medication lists, suggest these challenges are independent of healthcare systems and EHR vendors.[32]

Nurses emphasized the need to improve communication among healthcare teams and between clinicians and patients, echoing priorities of a national collaborative attempting to reduce preventable hospital readmissions.[33] Nurses in our study were equally frustrated by ambiguity in clinicians' roles and accountability during the immediate post-discharge period, which makes it difficult to clarify and enact care plans.[15,20] Our quality improvement initiative begins to address these challenges by pairing nurses' feedback with existing best practices to address individual barriers. Moving forward, healthcare systems could benefit from conducting targeted needs assessments to improve communication of medication information between acute and post-acute care settings to reduce medication-related errors.[34]

Home health care nurses identified workarounds and redundancies resulting from poor system-to-system communication, such as culling out relevant data from Epic EHR to guide continuation of care in patients' homes. Similar to another study, nurses frequently relied on patients or their informal caregivers to supplement missing information.[16] Mirroring the poor quality of discharge communication between hospitals and skilled nursing facilities, we identified ineffective communication as a barrier to safe hospital-to-home-health-care transitions.[35] These challenges were even more pronounced on weekends, when it is difficult to arrange ancillary services and clarify discrepancies in patients' medication regimens.[36]

Finally, nurses reported several patient-related factors associated with sub-optimal health information exchange, which may affect

care transitions. Similar to work by Greysen et al., we found older adults experience functional, social, and environmental challenges during transitions from hospital to home.[26] Overall, these observations align with a broader movement away from hospital-centric views of care transitions, with increasing emphasis on recognizing patients' unmet needs, providing anticipatory guidance, and supporting formal and informal caregivers.[33,37,38]

Results of our study should be interpreted in light of several limitations. First, we conducted focus groups with home health care nurses employed by a single healthcare system, which limits generalizability. Second, our participants were not representative of all home health care nurses. Third, we focused on a single diagnosis, heart failure, although we expect older adults with heart failure have multiple chronic conditions and represent the complexities of care home health care nurses routinely encounter. Fourth, we did not elicit feedback from patients, thus we cannot account for their perspectives as the recipients of home health care services. Finally, we did not design our study to assess associations between identified themes and actual patient outcomes (e.g. hospital readmissions).

Since limited interoperability among acute and post-acute EHR vendors poses a significant threat to care coordination, there is an urgent need for improved health information exchange to support care transitions across multiple settings.[10–12,39,40] While using the same EHR vendor in the acute and post-acute care settings may seem ideal, such alignment may be unrealistic, and nurses need short-term solutions. The nurses we interviewed generated several ideas, ranging from simple (e.g. refresher courses in inpatient EHR use) to complex (e.g. eliminating redundant EHR-generated medication lists).

Locally, nurses received new laptop computers and refresher courses in Epic (inpatient) EHR use. The agency is revising the role of nurse liaisons, with a focus on reducing redundant EHR-generated documentation in HHC admission packets, while simultaneously supplementing with relevant data frequently omitted from EHR templates (e.g. target weight and social determinants of health). Next, the agency streamlined its referral process into a single closed-loop system (Epic report), which maintains consistency after hours and on weekends. Meanwhile, the healthcare system initiated a diuretic protocol for HHC nurses to adjust patients' diuretics immediately following hospital discharge, which is a critical time for ongoing diuresis and before follow-up with their primary care physicians. Finally, this quality improvement study renewed organizational support for HHC services, which resulted in the agency receiving greater representation on system-wide care transitions workgroups.

Regardless of the approaches employed by local healthcare systems, we agree with suggestions to incorporate home health care nurses' perspectives, which is imperative to improving the quality of hospital-to-home-health-care transitions.[15,23] Some of these challenges may be amenable to health information technology solutions, and each should consider evidence-based best practices as potential strategies to address specific barriers (Table 2). As with other quality improvement initiatives, organizations must prioritize which best practices to implement based on their local needs and circumstances.[41]

Conclusions

We interviewed nurses and identified four challenges associated with health information exchange for older adults receiving home health care services following hospital discharge: poor medication management, ineffective communication, technology issues, and patient factors. Poor medication management is a critical safety concern, potentially complicated by discordant EHR-generated medication lists at hospital discharge (clinical summary versus discharge summary). The lack of interoperability between commercial EHR vendors exacerbates these challenges. Home health care nurses identified numerous opportunities for improvement, some of which may be amenable to health information technology solutions. Our quality improvement efforts focused on reducing redundant EHR-generated documentation in HHC admission packets (e.g. medication lists), implementing a diuretic protocol, leveraging nurse liaisons to prioritize key health information often omitted from EHR templates (e.g. social determinants of health), and investing in technology and EHR refresher training. Above all, this study generated greater organizational support for the home health care agency, and a better appreciation for the role of HHC services in care transitions.

Moving forward, there are numerous opportunities to improve health information exchange for hospital-to-home-health-care transitions. Locally, we are evaluating nurses' concerns about discordant EHR-generated medication lists embedded in two unique discharge documents – clinical summaries and discharge summaries. Overall, prioritizing efforts to improve communication about medication regimens following hospital discharge is a direct result of nurses' feedback from our quality improvement study.

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Appendix A. Semi-structured interview guide

Overall Question: How can our health system improve the flow of relevant information for home care nurses, their patients, and informal caregivers during care transitions from hospital to home with home health care services? Please focus on older adults with heart failure.

- What information is necessary to review prior to making your first home visit for a patient admitted to home care following a hospitalization for heart failure?
- What patient-level information is available to you before Start of Care?
- How could our system streamline the transfer of information for patients admitted to home care after hospital discharge?
- What information gaps exist for patients and their caregivers?
- How do patients [and their caregivers] manage their medications?
- What else is necessary to improve communication about care needs for patients admitted to home care following a hospitalization for heart failure?

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