## Title: Process Reliability and Organizational Learning in Home Health Care

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## 1. Structured Abstract

Purpose: The goal of this study was to improve care in the home health setting by developing, implementing, evaluating, and disseminating an intervention program based upon identified causes of preventable hospitalizations.

Scope: Throughout the United States, more than 1.4 million patients are currently under the care of a home health agency. Each year, home health agencies provided over 7 million care episodes to a population at high risk for hospitalization. Among all US home health episodes, 11% include hospitalization, and approximately 28% of home health episodes among Medicare beneficiaries result in hospitalization.

Methods: Practice enhancement resources were developed to support effective care planning by visit staff. Materials included an agency self-assessment tool, staff training, and education materials – suitable for use in a facilitated inservice series, sample supporting policies and procedures, a physician communication tool, and an outcomes monitoring process. User feedback was gathered through train-the-trainer sessions, involving 142 home health professionals in four states.

Results: Across all sections reviewed, positive ratings averaged 94.9% for importance of materials, 91.6% for effectiveness of exercises, 90.4% for intention to apply materials, and 92.7% for recommending materials to colleagues.

Key words: home health, acute care hospitalization, care planning, training, and orientation.

## 2. Purpose, Study Objectives

The goal of this study was to reduce avoidable hospitalizations in the home health setting by developing, implementing, evaluating, and disseminating a risk-informed intervention program. This study is a continuation of the Agency for Healthcare Research and Quality (AHRQ) program RFAHS-07-003, Ambulatory Care Patient Safety Proactive Risk Assessment. Insights into process vulnerabilities and home health agency management practices that contribute to avoidable hospitalizations gained from that study provided the foundation for a comprehensive intervention strategy. The objectives for this study were to:

- Develop, implement, and evaluate an intervention program to reduce the incidence of acute care hospitalization from the home health setting.
- Based on lessons learned through intervention implementation, develop and disseminate toolkits that will support wider adoption of successful practices.
- Disseminate study findings to other identified stakeholders.

## 3. Scope (Background and Significance)

Throughout the United States, more than 1.4 million patients are currently under the care of a home health agency (HHA). Each year, in over 7 million home care episodes[1], approximately 20,000 HHAs[2] provide care to a population at risk due to post-acute care or post-surgical clinical needs, diminished capacity for self-care, elderly and frail status, multiple chronic medical conditions, and complex at-home treatment regimens.[3] Home health providers face significant challenges in ensuring a safe and effective care experience for their patients, such as:

- Successful initiation of home care often depends on the quality of the hospital discharge process,
- Determining patient needs and developing an appropriate care plan requires subtle expert judgment,
- A wide range of services is provided,
- The care environment is unstandardized, relatively uncontrolled, and may represent a hazard in itself,
- Care plan implementation relies on the active participation of the patient and (often) untrained and unpaid caregivers,
- Efforts must be coordinated between multiple disciplines within an agency,
- Monitoring for and responding to changes in status relies on patients and unpaid caregivers,
- HHAs rely upon external providers and in turn are relied upon by those same providers for communication and care coordination,
- Staff training and skills are highly variable,
- Monitoring staff performance is complicated by the distributed nature of the work, and
- Extensive field work can present barriers to establishing and maintaining a shared culture of quality, safety, and learning.

No comprehensive studies of home health safety in the US are reported in the current literature. Among all US home health episodes, 11% end with hospitalization,[4] and approximately 28% of home health episodes among Medicare beneficiaries result in hospitalization.[5] Not all of these outcomes can be considered to be avoidable or even undesirable (for example, elective admissions are included in hospitalization statistics). However, examination of the national acute care hospitalization (ACH) experience for Medicare beneficiaries demonstrates substantial variation in risk-adjusted outcomes that points to systems and process failures as significant contributors. Top-performing HHAs have risk-adjusted ACH rates less than 20%; the median HHA rate is 30% (50% higher), and 20% of HHAs have risk-adjusted ACH rates more than two times higher than top performers.[6] Similar variation is observed for other clinical and functional outcomes. These studies, and other studies of healthcare system performance and the impact of care fragmentation,[7,8] strongly suggest frequent and preventable patient harm in the home health setting and inefficient use of healthcare resources.

Resources describing recommended practices for reducing ACH have been developed and actively disseminated to the home health community.[9] The Centers for Medicare & Medicaid Services (CMS) has funded extensive training programs for HHAs through the Quality Improvement Organization (QIO) program,[10] and over 100 recommended practices are documented in the current home health Outcomes-Based Quality Improvement (OBQI) materials.[11] The training and resources form the basis for disciplined HHA assessment of care practices and application of quality improvement methods to home healthcare processes. Despite this intensive CMS focus and documented effort by HHAs, however, meaningful improvement trends have not been observed in ACH rates nationally. The national risk-adjusted ACH rate for Medicare beneficiaries of 28% has been largely unchanged since 2005.[12] We hypothesized that progress in this area may be impeded by a lack understanding of root causes of ACH and, in 2007, developed a prospective risk assessment study to increase understanding of ACH causes.

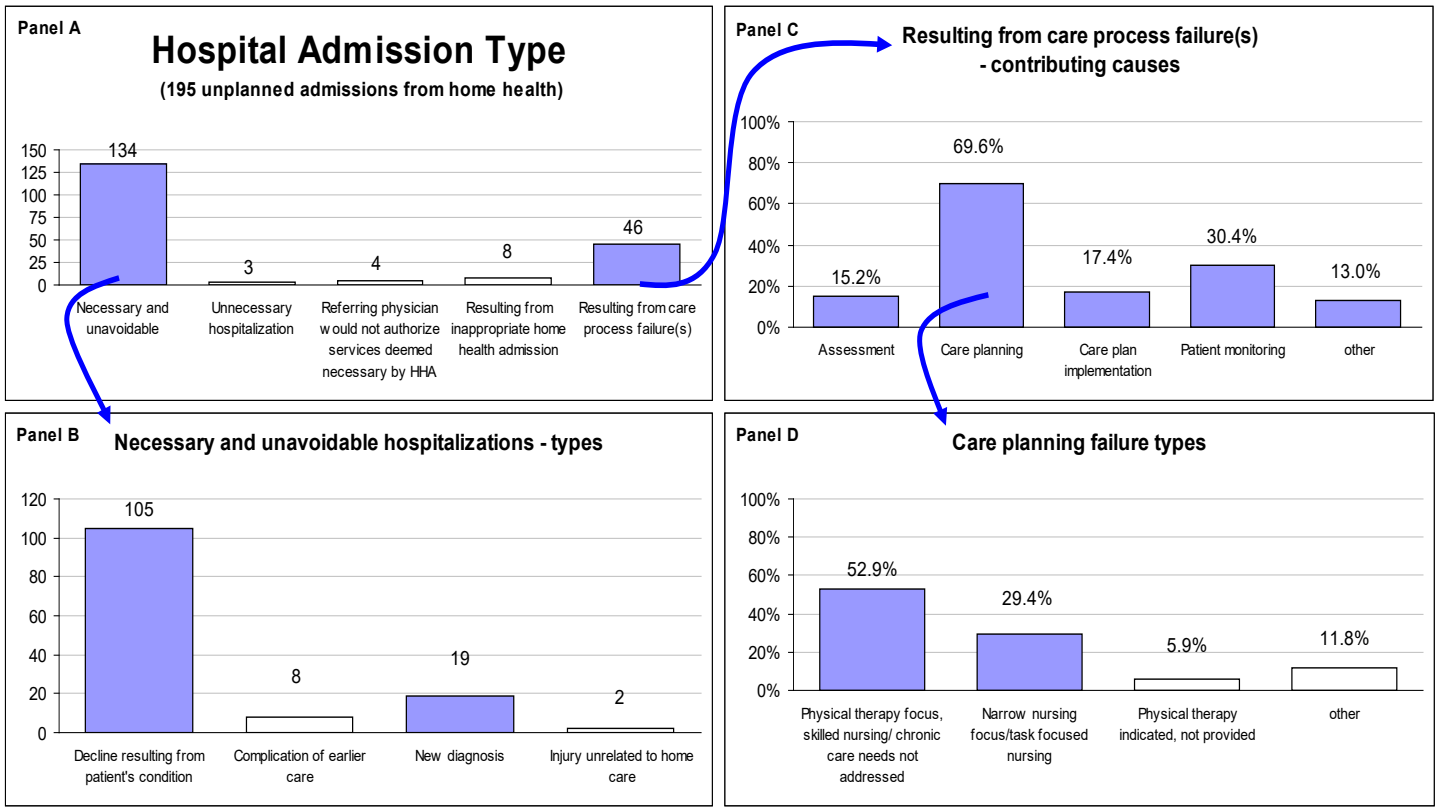
> ***Prospective risk assessment study –*** In 2007-2008, this study's team conducted a prospective risk assessment study of unplanned hospital admissions among five Utah home health agencies.[13] It used a fault tree model and structured treatment record review of 195 unplanned hospitalizations from collaborating home health agencies.

Findings from this review were used to refine the fault tree structure, derive failure rate estimates, and identify the major sources of risk for preventable hospitalization. Findings from this study included:

***Causes of Unplanned Hospitalizations*** (see Figure 1)

- Panel A (upper left) shows the overall findings of the treatment record review. The categories shown are mutually exclusive. The majority of unplanned hospitalizations reviewed (134 of 195; 68.7%) were assessed as necessary and unavoidable – indicating no exception to recommended home health practice or other failure in clinical process was identified as a cause of the hospitalization. Three cases (1.5%) were observed wherein the hospitalization was assessed to have been unnecessary given the patient's condition and the treatment provided in the hospital. In four cases (2.1%), the referring physician would not authorize needed home care services.* Eight unplanned hospital admissions (4.1%) resulted from inappropriate admission to home healthcare. Finally, in 46 cases (23.6%) the unplanned hospitalization was determined to be the result of care process failures.
- Panel B (lower left) details the nature of the hospitalizations assessed to be necessary and unavoidable. Of the 134 necessary and unavoidable hospitalizations reviewed, 105 (78.4%) could be traced directly to the patient's recognized underlying condition. In eight cases (6.0%), the hospitalization resulted from complications of care provided in a previous setting. In 19 cases (14.2%), hospitalization resulted from a new or previously unrecognized diagnosis. Two hospitalizations (1.5%) were the result of injuries that were unrelated to home care.

**Figure 1. Treatment Record Review Findings**




* This category was added during the course of review.

- Panel C (upper right) details the care process step(s) that contributed to the preventable hospitalizations. Review methods allowed assignment of multiple contributors. The dominant failure mode identified was care planning, implicated in 69.6% of cases, followed by failures in the following: patient monitoring (30.4%), care plan implementation (17.4%), start of care assessment (15.2%), and other processes (13.0%).
- Detail on care planning failures that contributed to preventable hospitalizations is provided in Panel D (lower right). These failures represent a mismatch between the patient's needs and the skills included in the care plan. In more than half of these cases (52.9%), the care plan focused on physical therapy, with less than adequate response to the patient's need for skilled nursing (especially for chronic conditions and complex care management). About a quarter (29.4%) employed care plans with a narrow, task-focused, nursing approach. In two cases (5.9%), physical therapy skills were indicated but not included in the care plan, and the patient experienced a preventable decline and hospitalization as a result.

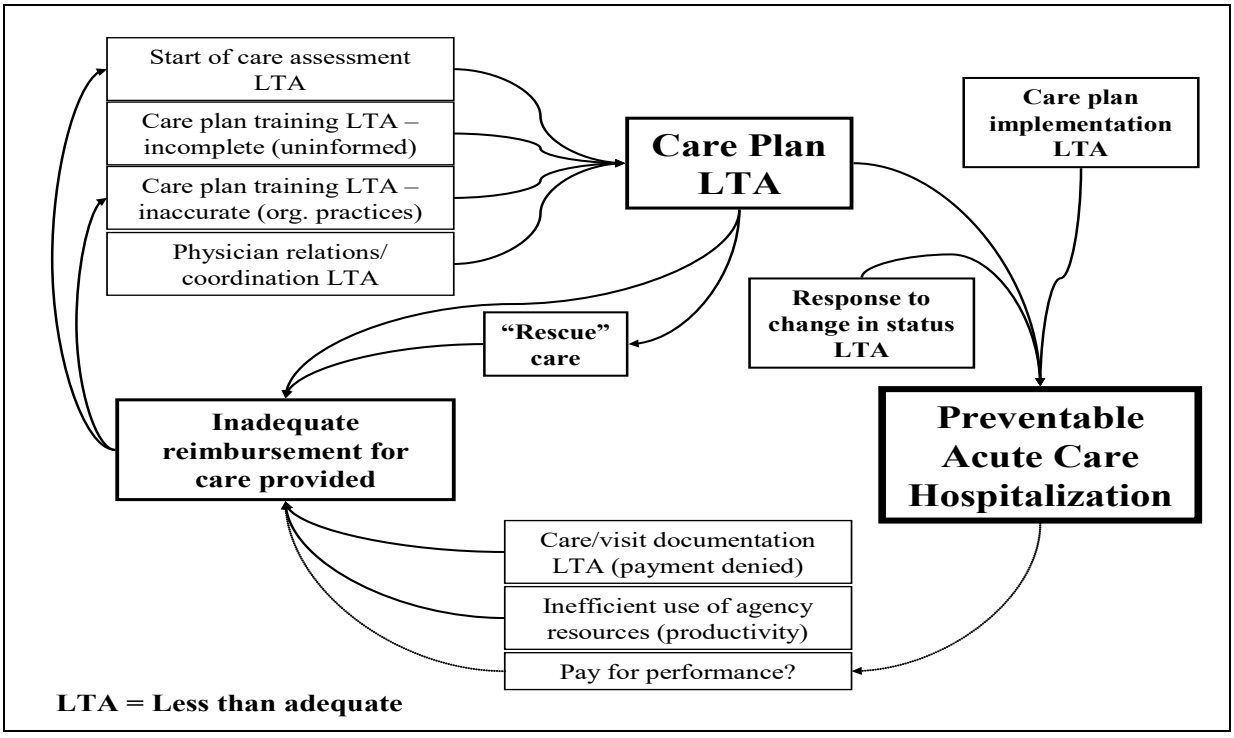
This study suggested a particular pathway that may place home health patients at elevated risk for preventable hospitalization. It begins with a patient who has complex or comprehensive care needs but is referred for narrow, simple, or task-focused home care services. The patient continues on this pathway when their complex or comprehensive needs are not identified and addressed through assessment and care plan development. This can happen when:

- There is no assessment by the appropriate discipline (typically nursing),
- The assessment is focused too narrowly on the referred-for care, or
- Care planning is not responsive to problems identified through patient assessment, because
    - Visit staff do not know how to develop comprehensive care plans consistent with benefits policy, or
    - Agencies avoid the use of more comprehensive services in these circumstances out of fear of payment denials.

This study also suggested another patient population at risk: patients denied access to home health services entirely because of misapplication of Medicare coverage guidelines.

A causal model for preventable home health hospitalizations, drawn from our study findings is shown in Figure 2. The interactions between management systems and clinical processes can be characterized as an "engine" that produces preventable acute care hospitalizations, although this characterization only applies to an at-risk minority of home health episodes. The majority of home health episodes do not include hospitalization at all, and most hospitalizations that do occur are not thought to be preventable. The key elements are:

**Figure 2. Preventable Hospitalization "Engine"**




1. **Care Plan LTA** – The dominant proximal cause of preventable hospitalization was found in care planning. Because the scope and/or intensity of the services ordered did not meet the needs of patients, they experienced avoidable decline in status such that hospitalization was required. We hypothesize that inadequate care planning has a negative impact on agency functioning and financial viability. When shortcomings in the original plan are recognized, the agency provides additional (unplanned or rescue) monitoring and care services. This effect would be expected regardless of whether the patient was ultimately hospitalized. These factors feed into the "inadequate reimbursement for care provided" model element.

   In almost every case, the performance of front-line staff charged with care planning was consistent with their agency's standard practices. Because of this, the results (patient decline, rescue care, preventable hospitalization) were not identified as failures or opportunities for learning by the agency.

   We identified the following as causes of inadequate care planning:

   - Start of care assessment LTA. These included (1) assessments of patients with complex care needs (e.g., multiple chronic conditions, acute exacerbations, polypharmacy) performed, consistent with agency policies, by physical therapists and (2) nursing assessments that fail to fully capture the patient's condition and care needs.

   - Care plan training LTA – incomplete (uninformed). In these cases, the training and orientation provided to staff charged with developing care plans were incomplete. For example, training did not include detailed review of the Medicare home care coverage guidelines for "observation and assessment of the patient's condition when only the specialized skills of a medical professional can determine patient's status" or "management and evaluation of patient care plan." Frequently, staff recognize the patient's need for these skilled services but believe that they are not covered.

   - Care plan training LTA – inaccurate (organizational practices). In these cases, the training and orientation provided to staff charged with developing care plans were inaccurate

regarding Medicare home care coverage guidelines and focused on agency cost management strategies (especially limiting skilled nursing visits).

- Physician relations/coordination LTA. In these cases, care plans were developed in accordance with the orders of the treating physician although in the opinion of the agency staff involved, additional skills or care services were indicated. Agencies had not established procedures to ensure patients' needs were fully addressed in the care plans in these circumstances.

2. **Care plan implementation LTA** and **Response to change in status LTA** – These proximal causes of preventable ACH were less frequently observed. They represent breakdowns in performance reliability and coordination of effort. No agencies employ processes for detecting and correcting these breakdowns such that the impact on the patient could be mitigated. None have processes for systematically identifying and learning from such failures.

3. **Inadequate reimbursement for care provided** – Maladaptive organizational responses to this condition are hypothesized to be a major latent cause for preventable hospitalization. Management efforts to reduce costs of providing care distort clinical practice. Skilled nursing visits are a typical target. Cost-cutting strategies appear to have been pursued with limited understanding of the Medicare coverage guidelines and appreciation for the impact that factors within the control of the agency have on reimbursement levels. Beyond the effects of inadequate care planning, his condition is exacerbated by:

   - Care/visit documentation LTA. When field staff have not been trained in the Medicare coverage guidelines, they do not have the knowledge and skills to plan, conduct, and document patient care such that it is consistent with those guidelines. This leads to coverage and payment denials.

   - Inefficient use of agency resources (productivity). We hypothesize that this latent cause stems from misaligned incentives and inefficient process design.

   - In the future, pay-for-performance initiatives may create additional problems in this area.

The implications of this study diverge from approaches that feature prominently in the home health quality improvement field: the CMS Home Health Quality Improvement National Campaign[14] and the Briggs® National Quality Improvement/Hospitalization Reduction Study.[15] Although these approaches employ the best thinking of clinical experts and provide sound advice on practices that home health agencies can consider for preventable hospitalization reduction, they fail to address fundamental inadequacies in the practice and delivery of home healthcare. For example, both approaches promote a strategy of "front-loading" visits; that is, scheduling more frequent home care visits early in an episode of care. Neither approach articulates which skilled services covered by the Medicare benefit will be provided in those visits (e.g., an agency cannot simply increase the frequency of wound care), how to document the need for those services and the care provided, or the reasons that agencies have adopted their current practices. Both approaches assume a solid foundation of basics, which this study suggested may be lacking, and give high priority to what appear to be low yield improvement strategies.

This study proposed a comprehensive intervention strategy that directly addresses findings from the prospective risk assessment study within the constraints of existing payment programs.

## 4. Methods

This study was conducted as a collaboration between HealthInsight, the Medicare QIO for the States of Nevada and Utah, a clinical consultant in home health practice and science, a knowledge management consultant, and seven Utah home health agencies. Interventions were developed to address limitations in current approaches, based on findings from our prospective risk assessment study. Draft intervention materials were pilot tested for usability and acceptability with the collaborating HHAs. Following refinements based on feedback received in pilot testing, practice enhancement resources were disseminated to HHAs in outreach workshops conducted in three states and nationally through a project website. Evaluation included acceptability of materials, intentions to use materials, and effectiveness of study marketing activities.* All study activities were conducted under a protocol (#20081941) approved by the Western Institutional Review Board.

***Materials Development*** – The intervention program was designed to help home health agencies address the most important causes of preventable hospitalizations that were identified through the prospective risk assessment study. These materials drew upon recognized professional practice standards and Medicare coverage guidelines. The program sought to develop and enhance professional expertise among participants and provided tools that support the application of that expertise under real-world conditions. Modules were planned to include self assessment tools, staff training materials, process reliability, and productivity tools, strategies for monitoring, and continuous performance improvement methods. The program was broken into the following modules:

I. Comprehensive care planning (initial development of this module was completed 3/3/09) – This module was designed to address the most common cause of preventable hospitalizations that we observed: narrowly focused scope of skilled services in patients with complex care needs and chronic conditions.

*Module materials*:

- Module Overview – Describes the focus of the module as application of critical thinking nursing skills described in Chapter 7 of the Medicare Benefit Policy Manual under "40.1.2.1 - Observation and Assessment of the Patient's Condition When Only the Specialized Skills of a Medical Professional Can Determine Patient's Status" and "40.1.2.2 - Management and Evaluation of a Patient Care Plan." An implementation road map is provided,
- Agency Self-Assessment Tool, Staff Quiz – This tool allows HHAs to evaluate the effectiveness of organizational processes for promoting and supporting critical thinking nursing skills in practice. It provided a framework for reviewing agency training and policies, staff and management knowledge, and patient outcomes.
- Applying Critical Thinking – Case-based training materials to support the development of expertise in home health clinical decision making. Two cases were explored in depth.
- Nursing Standards and Coverage – This section highlighted areas of professional practice and Medicare benefits policy likely to be unknown to, or misinterpreted by visit nurses. Materials were presented in a format that provided a model for study of other aspects of Medicare benefits and of other reimbursement/ payment systems.
  - Practice Enhancement Process
  - Introduction: Foundations
  - Critical Thinking Skills Coverage – Training and self-study materials
  - Homebound Status – Training and self-study materials
  - Home Health Resources – Training and self-study materials
  - Reasonable and Necessary Services – Training and self-study materials
- Comprehensive Nurse Assessment Sample Policy
- Physician Communication Example

* This was originally planned as a 3-year study but was not renewed after the first year. Further study evaluation of dissemination, uptake of materials, and impact on patient outcomes planned for the second and third years could not be completed.

- Critical Thinking Documentation – Training and self-study materials
- Outcome Monitoring Process – Process implementation and outcomes assessment methods

II. Patient assessment (this module was under development, 80% complete, and ready for focus group testing when the study was discontinued) – Our review of unplanned hospitalizations from home care identified opportunities to reduce the risk of acute care hospitalization through improvement in patient assessment. This module focused on aspects of patient assessment highlighted through this review:

- Identifying limitations in cognitive functioning that may impact a patient's capacity to carry out a care plan;
- Adapting patient assessment to the demands of home care; and
- Chronic and home care patient assessment methods.

This module was designed to be implemented directly by HHAs. It builds upon lessons learned in Module I. The materials were organized as a step-by-step improvement process:

1. Organizational self-assessment: Using this tool, HHAs agencies could evaluate the effectiveness of organizational structures and processes supporting patient assessments.
2. Skills development training and practice enhancement: Identifying limitations in cognitive functioning. Executive control function (ECF) impairment is often under-appreciated among older adult patients with chronic medical conditions. Failure to identify this may result in care plans that are incompatible with patients' abilities to carry them out, unsafe conditions, frustrations for caregivers and families, ineffective home health treatment, and preventable hospitalizations. In many instances, an impaired patient may be mistaken for a noncompliant patient. Although these problems are well understood, not all agencies have established training programs or systematic procedures for assessing cognitive functioning. This section introduced a simple assessment tool that can be incorporated directly into the home care assessment process and provide training exercises in care planning for patients with identified cognitive limitations.
3. Skills development training and practice enhancement: Home health and chronic care assessment. These materials were intended to address some key challenges of patient assessment for the home health nurse, a professional skill that requires clinical judgment. Materials were developed to support assessment that is sensitive to limitations in data sources; is action oriented; focuses on critical factors; recognizes connections and relationships between the patient, care resources, and the environment; identifies risks and anticipates problems and needs; and is otherwise oriented toward the future. Exercises were suitable both for orientation and to enhance skills of experienced home health visit staff.
4. Outcomes monitoring: Audit and measurement methods to assess progress. These procedures can be implemented in conjunction with or immediately following the previous step. This is an ongoing process.

III. Patient monitoring and responding to changes in condition (this module was in an early stage of development when the study was discontinued) – Delayed recognition of changes in patient status and/or communication failures are important contributors to preventable hospitalizations. This module would support agencies in establishing effective and reliable patient monitoring and communication practices. Materials would address identification of meaningful change in condition, communicating between disciplines and within agency, timely and efficient physician communication processes, and learning from related process failures. Strategic planning for this module identified the following approaches:

1. Critical behaviors prompts from applied human reliability (e.g., the "STAR" prompt: Stop, Think, Act, Reflect) to increase awareness of change in condition.
2. Exercises in anticipating potential complications and/or changes in symptoms.
3. The SBAR communication tool.

4. Identifying barriers to reporting changes in condition: unclear expectations, time/production pressure, and response/feedback from those notified (especially "false alarms").
5. Performance monitoring, structured review methods for patient monitoring.

***Dissemination*** – Improvement to public reporting of HHA ACH rates[16] allowed for an expansion of materials testing beyond the seven participating Utah HHAs. Using an ACH measure endorsed by the National Quality Forum, changes in risk-adjusted patient outcomes could be monitored for any Medicare-certified HHA in the country. Dissemination efforts benefited from the support and participation of the National Association for Home Care & Hospice and collaboration with the CMS national Patient Pathways initiative (involving 14 states). We used a national network of professional relationships with home health agencies, Medicare Quality Improvement Organizations, and state home health associations to promote participation in the project. In addition, we provided a link to the study website (www.healthinsight.org/prol/kpah.html) from a previously established HealthInsight website that provides national rankings of home health performance and conducted direct outreach to HHAs that experienced recent declines in ACH performance.

***Evaluation*** – Study evaluation was planned to include both:

- an assessment of study process effectiveness, used to inform materials development, improvement, and dissemination efforts, and
- an assessment of the impact of the use of study tools and materials on risk-adjusted acute care hospitalization rates in participating home health agencies (HHA).

User Feedback – As the first level of evaluation, user feedback was solicited on study materials. In early pilot activities, this feedback was gathered through focus group sessions with local agencies and used to improve materials prior to broader testing. Subsequent materials testing activities – both web-based materials access and in-person train-the-trainer sessions – used a standardized ratings and open-ended comments format. Feedback included the following items rated on a 1 (Disagree Strongly) to 5 (Agree Strongly) scale:

- I consider this to be an important training session.
- The exercises and activities were effective.
- I intend to use these materials to make changes in my agency.
- I would recommend this training to my colleagues.

Dissemination and Implementation – This level of evaluation was planned to assess potential study impact in terms of the number of HHAs and other stakeholders accessing study materials. Evaluation of the proportion of HHAs that incorporate study materials into their practice and the size of the patient population that may be impacted through the changes implemented was planned for the second and third years of the study.

Patient Outcomes – Assessment of study materials implementation impact on risk-adjusted ACH rates for participating HHAs was planned for year 3 of the study.

## 5. Results

***Findings*** – At the close of the study, Module I materials had been downloaded from the project website by 350 registrants from 37 states. This, however, proved an ineffective method for collecting feedback on those materials, as few registrants returned to the website to provide feedback.

Beginning in July, 2009, 10 train-the-trainer sessions were conducted using Module I materials to obtain feedback data from home health professionals Seven sessions involved the Utah HHAs originally recruited for the study. Three additional sessions were conducted in collaboration with the Medicare Quality Improvement Organizations for the States of Michigan, Alabama, and Texas. Participants included both HHA visit staff and management. The sessions were facilitated by members of the study team and employed a format that involved participants in simulated activities as trainers using materials from the Module I workbook. Through these sessions, feedback was obtained from a total of 142 home health professionals. Participants by state totaled – Alabama: 9; Michigan: 25; Texas: 33; Utah: 75. User feedback on Module I materials is summarized in Table 1.

**Table 1. Module I – Comprehensive Care Planning: User Feedback**

| | ***Response: "Agree" or "Agree Strongly"**** | | | |
|---|---|---|---|---|
| ***Section*** | I consider this to be an important training session. | The exercises and activities were effective. | I intend to use these materials to make changes in my agency. | I would recommend this training to my colleagues. |
| Agency Self Assessment† | NA | NA | 91.8% | 98.2% |
| Critical Thinking Skills Development | 97.7% | 98.4% | 94.2% | 97.6% |
| Application of Critical Thinking Skills | 93.1% | 90.1% | 89.7% | 91.9% |
| Home Health Benefit – Homebound Status | 96.7% | 91.3% | 93.3% | 90.1% |
| Home Health Services – Resources | 94.9% | 91.9% | 89.5% | 91.8% |
| Home Health Services – Reasonable and Necessary | 95.1% | 91.1% | 85.7% | 91.1% |
| Outcome Performance | 92.0% | 86.0% | 88.7% | 87.9% |
| ***Average*** | ***94.9%*** | ***91.6%*** | ***90.4%*** | ***92.7%*** |

The generally positive feedback on Module I materials was observed in all train-the-trainer sessions and from participants in all four states. Written comments echoed this positive response, with participants indicating intention to incorporate materials into existing orientation processes. Participants also offered suggestions for improving the materials – including clarifications and additional applied exercises.

***Discussion*** – Study findings should be interpreted with caution, as materials were tested only under simulated training conditions. Uptake and application in home health practice was not assessed; barriers or further refinements might be identified through such review. Similarly, the impact of practice changes resulting from implementing this program on patient outcomes was not accessed. Though the approach used in this study is based on improving alignment of home health practice and established professional standards,[17] effects cannot be established without further testing.

* Average respondents across all sections and items: 103.3 (range 89-128); across all sections and items, more than 90% of responses other than "Agree" or "Strongly Agree" fell into the "Neutral" category.

† User feedback prompts for this section did not include two items and used slightly modified phrasing in the other two items.

Feedback received on Module I materials suggest that potential users can be expected to find them to be important and useful resources. Module I merits consideration for further dissemination efforts.

Study findings also have broader implications for home care quality improvement. This study built upon a prospective risk assessment study involving only eight HHAs in one state. A key finding from that study was the attribution of preventable hospitalizations to organizational conditions – management, training, and orientation – that improperly or inadequately prepared visit staff for the critical task of developing comprehensive and effective care plans. More than half of the material from Module I was based on readily available CMS home care benefits coverage materials.[18] Though participants considered the exercises developed for this study to be value adding, it is important to note that Module I materials were not reported to be redundant of existing orientation and training approaches. Though not conclusive, this finding is consistent with the prospective risk assessment study finding of organizational contributors to preventable hospitalizations and potentially expands this finding to HHAs in three additional states. The impact of national efforts aimed at reducing preventable hospitalizations from home care may be limited by their effectiveness in addressing these contributors.

***Conclusions*** – This study developed training resources that target identified causes of preventable hospitalizations from home healthcare. In simulated training activities, home health professionals rated these materials as important and effective; they indicated intentions to use the materials in their practice. Further dissemination, study, and development of resources using study principles are warranted.

## 6. Publications and Products

To date, there have been no publications from this study.

*Keeping Patients at Home, Module I: Comprehensive Care Planning* workbook was made available in electronic format from the study website http://kpah.healthinsight.org (registration required) or the Principal Investigator (contact: Michael P. Silver, MPH – msilver@healthinsight.org).

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