Improving transitions in inpatient and outpatient care using a paper or web-based journal

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DECLARATIONS

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Abstract

Objective To develop a 'Transitions Journal' for inter-unit and inter-setting communication for improving quality and safety of care and patient satisfaction with timely, reliable and meaningful information for all stakeholders.

Design Front-line staff were targeted in a series of four team meetings through which this 'Journal' was developed iteratively; initially as a paper-based and subsequently as an IT-based tool. Goals were to: (1) develop a standardized tool based on SBAR format (Situation, Background, Assessment, Recommendation); (2) facilitate improved communication at the points of care; (3) use a bottom-up approach; (4) create situational awareness and facilitate team formation; and (5) create visual workflow models to help inculcate a culture of safety.

Setting A 183-bed community-hospital and its Primary Care Center, in an urban area in western New York State.

Participants Ten nurses and 12 physicians representing both the hospital and primary care center participated voluntarily.

Main outcome measures (1) Successful development of the 'Transitions Journal'; and (2) identification of its potential uses.

Results (1) Development: the journal was successfully developed in both paper and web-based formats; (2) identification of uses: participants recommended using the tool as a checklist to verify appropriate communication at both the sending and receiving ends; as an audit tool for retrospective review of handoffs; and as a teaching tool.

Conclusions A journal developed by and for front-line staff has the potential to provide opportunities for improvement, instill a systems approach, improve care continuity, improve compliance with safety goals,

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improve patient and staff satisfaction, reduce duplication and costs, inculcate teamwork, and provide mutual emotional and intellectual support. Further work to evaluate and disseminate this tool is in progress.

Introduction and objectives

Background

Transitions (also known as hand-offs, or hand-overs) present serious threats to safety.[1–7] These terms refer to the movement of patients between healthcare providers and between settings across the whole healthcare system. Transitions can occur within healthcare settings (e.g. from one hospital floor to another) as well as between them (e.g. from the hospital to home, or from a nursing home to the emergency department). The current quality of transitions of patients, especially from one hospital floor to another is particularly unsatisfactory, undermining patient satisfaction, increasing healthcare costs and impairing quality and safety. In the USA most of the 40 million discharges from hospitals each year occur without timely and reliable communications, presenting a major hazard to patients. The authors' premise is that well-structured discharges from hospitals can result only from sound practices of well-structured transitions/hand-overs within the hospitals. In the USA, 19.6% of Medicare patients are readmitted within 30 days of discharge.[8] Of the various causes of avoidable readmissions, lack of outpatient follow-up is known to be a major factor.[8] In fact, in the Medicare study cited above, half of those who were readmitted had no recorded outpatient follow-up between discharge and readmission, representing a failure in the transition from hospital to home. A World Health Organization (WHO) expert panel has identified lack of communication and coordination to be the top research priority for developed countries.[9,10] The US Agency for Health Research and Quality, the Joint Commission and the Alliance of Independent Academic Medical Centers, among various others, have therefore made pressing calls for patients to be transitioned with well-structured and standardized formats, bearing timely and reliable information.[11–15] Starting from October 2012, the USA's Federal Medicare system will penalize hospitals whose 30-day readmission rates are higher than expected.

Reliable transitions/hand-overs can reduce costs and safety hazards by 'breaking down the silos of care'.[16] The director of the US Agency for Health Research and Quality (AHRQ), Carolyn Clancy MD, draws attention to safety issues related to these 'silos' in her Podcast.[17] This should be seen in light of the fact the USA spends nearly one-sixth (16.5%) of its gross national product on healthcare every year.

Several strategies for improving transitions have been proposed. The Joint Commission in the US has advocated use of the SBAR (Situation, Background, Assessment, Recommendation) format, that is increasingly used in hospitals to aid communication.[6] However, it is not clear the extent to which it is used or the success/impact of its use. Patchy adoption and limited buy-in by staff suggests the need to further explore the transition process. Another important strategy for overcoming the problem of transitions is to learn lessons from the field of change management. Sustainable change for improvement is best achieved by empowerment of all the stakeholders at the front end of the healthcare processes. The essential prerequisite in this study, therefore, was to a adopt a bottom-up approach, engaging front-line staff in designing a transition tool.[18–23] Additionally, by improving continuity and coordination of care, we can improve patient satisfaction, since lack of continuity is transparent to patients and tends to lead to dissatisfaction.[17]

Objectives

The general objective of the work reported here is to improve quality and safety of care and patient satisfaction with structured inter-unit and inter-setting communication; bearing timely, reliable and meaningful information for care providers and patients through a bottom-up approach. This work should help the profession move in the direction of the objectives stated in the recent UK Department of Health's White Paper[24] as follows:

- To put patients at the heart of everything the NHS does;
- To focus on continuously improving those things that really matter to patients – the outcome of their healthcare;

- To empower and liberate clinicians to innovate, with the freedom to focus on improving healthcare services.

The specific objective of this study was to engage a team of nurses and physicians from a single hospital and its affiliated primary care clinic to develop a structured transition tool, with various potential uses, incorporating the expertise, knowledge, and needs of these front-line workers.

Design – justification

The clear message from the IOM reports *To Err is Human* and *Building a Better Delivery System: A new Engineering/Health Care Partnership* is that safety is primarily a human factor-based problem.[25,26] Instead of the classic academic medical model approach, it is more desirable to use the systems approach (including human factors, engineering, or safety theory models) that is used in other risk-sensitive arenas. The UK House of Commons Committee added its call for a *Safer Place for Patients* in 2006.[27] In the work reported here the authors have applied interdisciplinary systems management, systems engineering and systems science approaches. For example, the authors have tried to respond to the often expressed call from the US Accreditation Council for Graduate Medical Education (ACGME) to inculcate competencies of 'System-based practice' and 'Practice-based learning and improvement' (see http://www.acgme.org/outcome/comp/GeneralCompetenciesStandards21307.pdf).

Recently, as stated earlier, the Joint Commission has called for standardized approaches to transitions communications. Process mapping at the macro- and micro-levels can be a great aid to understanding the risks associated with these transitions. A visual approach[28] is particularly useful for tracking patients' encounters within the healthcare system over time and recording their interactions across the various parts of the system. This approach can help improve continuity of care and reduce the risk of errors that occur during transitions.

The pre-defined goals of the Transitions Journal development process were to: (1) develop a standardized transitions tool based on the SBAR format (Situation, Background, Assessment, Recommendation);[30] (2) facilitate improved communication at the point of care for transitions within and between healthcare settings; (3) use a bottom-up approach incorporating front-line staff; (4) create situational awareness[29] and facilitate formation of teams, promoting the competency of practice-based learning and improvement; (5) create visual workflow models promoting the competency of system-based practice as well as inculcation of a context-sensitive culture of safety; and (6) identify other potential uses of the tool.

Design – process

A series of meetings was held with staff, beginning with a didactic presentation covering the issue of transitions and possible strategies for addressing the problem, including SBAR. An initial draft of the 'Transitions Journal' was produced on paper and presented to the team. Discussion of the content and format and the potential uses of the Journal proceeded over the course of three additional meetings. The nurses at the hospital engaged in detailed discussion of issues relevant to transition between units within the hospital. Issues pertaining to transition between the hospital and primary care engaged nurses from both settings. The physicians (including trainees and faculty) work in both settings and contributed to all aspects. The tool underwent two sets of revisions in response to team input. Finally the Transitions Journal was implemented as a web-based tool.

Setting

The work took place at a 183-bed community hospital and its associated Primary Care Center which is located on an adjacent site. The hospital operates a Family Medicine residency training program with 12 residents. The Primary Care Center is the outpatient training site for these residents. Both settings serve inner-city under-served populations with healthcare disparities and physician shortage.

Main outcome measures

The outcome measures were: (1) the development of the Transitions Journal tool incorporating the feedback and input of team members; and (2)

the identification of possible uses of the Journal, suggested by the members of the team.

Results

A total of 22 staff participated, including six from the hospital (four nurse safety champions, one nurse trainer, one nursing supervisor) and 16 from the affiliated primary care office (four nurses, nine resident physicians and three faculty physicians).

Figure 1 shows paper versions of the Transitions Journal that was developed for assessing transitions within a hospital (top half) and between hospitals and primary care (bottom half).

The Transitions Journal incorporates the SBAR format to describe the content of the communication, including deficiencies in the content, and also addresses the mode of communication, including problems with transmission. Two versions were developed – one for transitions within the hospital and another for between the hospital and primary care offices. The left side of each page (Figure 1) is used to record transitions from another setting, while the right side represents transitions to another setting.

Participants proposed to use the Transitions Journal for the following three purposes:

(1) As a checklist to verify appropriate communication at the time of handoff. The nurse or other provider would complete this prior to discharging or transferring a patient. The receiving personnel would also use the checklist to verify receipt of appropriate information and this would prompt follow-up or clarification as needed;
(2) As an audit tool for real-time or retrospective review of handoffs. Individual members of a healthcare team would complete the Journal to record the quality of each hand-off for quality improvement purposes and report cases of unsatisfactory transitions. Participants felt that this should be used to promote learning and aid the focused development or improvement of transitions procedures;
(3) As a teaching tool for medical and nursing personnel (including but not limited to trainees). The tool was seen by participants as formative.

The authors suggest a cyclical improvement process for continuously monitoring and improving transitions as portrayed in Figure 2.

Based on uses proposed by staff and incorporating the ideas in Figure 2, a web-based Transitions Journal was created. Figure 3 shows the opening screen with some explanatory notes. This provides general orientation for the participant with the aid of a PowerPoint presentation and allows access to instructions for use of the Journal and statements of the benefits of so doing. Figure 4a is an example screen for assessing and reporting the quality of transition *to* primary care office from another setting such as hospital. Input to questionnaires includes not only SBAR content but also the processes of communication. Space is provided for 'story' telling about the unsatisfactory transition being reported. Figure 4b shows the screen that allows the user to see the compiled results of all the anonymous entries by various members of the team over a predetermined period of time. These compiled data, at any stage of evolution (Figure 2) of a specific setting, are presented to respondents in a bar chart form (Figure 4c). This aids identification of the most significant vulnerabilities and facilitates consensus-based prioritization of improvement interventions.

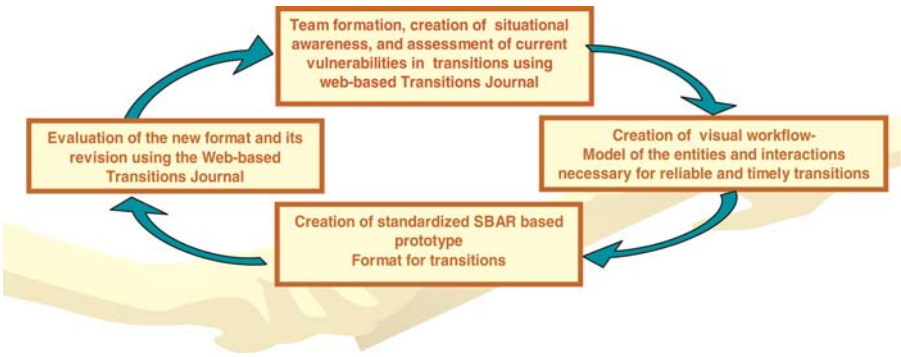
During discussion, participants expressed enhanced general situational awareness of transition safety issues as well as awareness of the need to assess the current weaknesses in their system. Participants expressed a desire to adopt standardized transition checklists but felt that these lists needed to be tailored to their setting. The Transitions Journal was perceived to be intuitive and user-friendly for monitoring current vulnerabilities in the system. They recommended that this tool be made generally available, with tailoring for different settings.

Discussion

Front-line staff from an inpatient setting and an affiliated outpatient setting successfully worked together to develop a transitions tool ('Transitions Journal') in both paper and online formats intended to serve multiple purposes including a hand-off checklist, an audit tool, and a teaching tool.

Figure 1
Paper versions of the Transitions Journals for inter-unit and inter-settings

Figure 2
Cyclic process of monitoring and improving transitions



The main strength is the participation of a broad base of end-users in the development of the tool. This is the first study documenting the development of a multipurpose transition tool by end-users. The main weakness is that this took place in a single system and therefore might not be generalisable to other settings. The study is preliminary; we did not study the effectiveness of the tool.

Implications

The fact that a transitions tool was successfully developed and implemented with input from

Figure 3
The opening screen

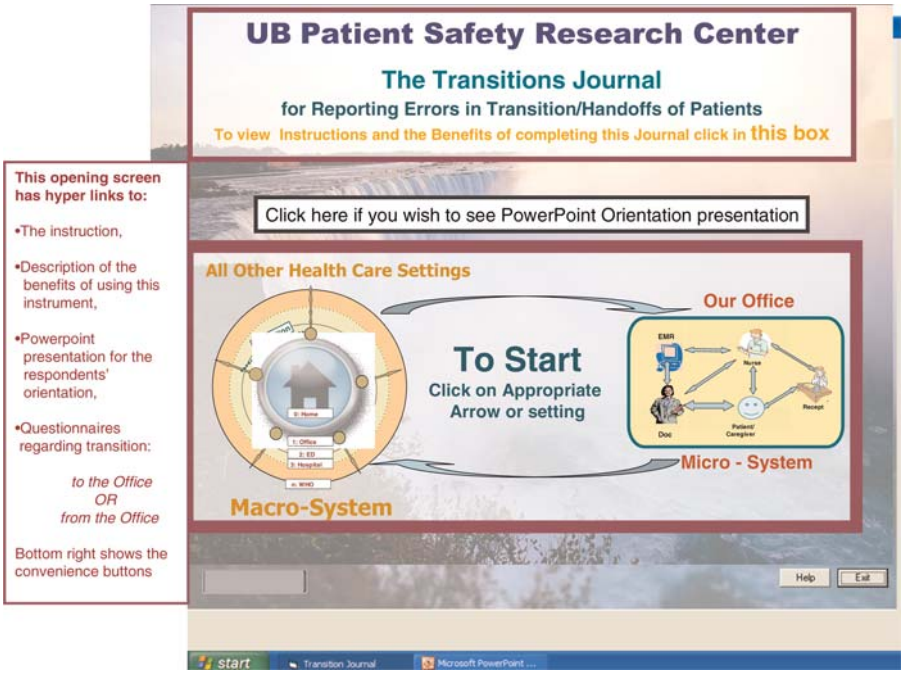
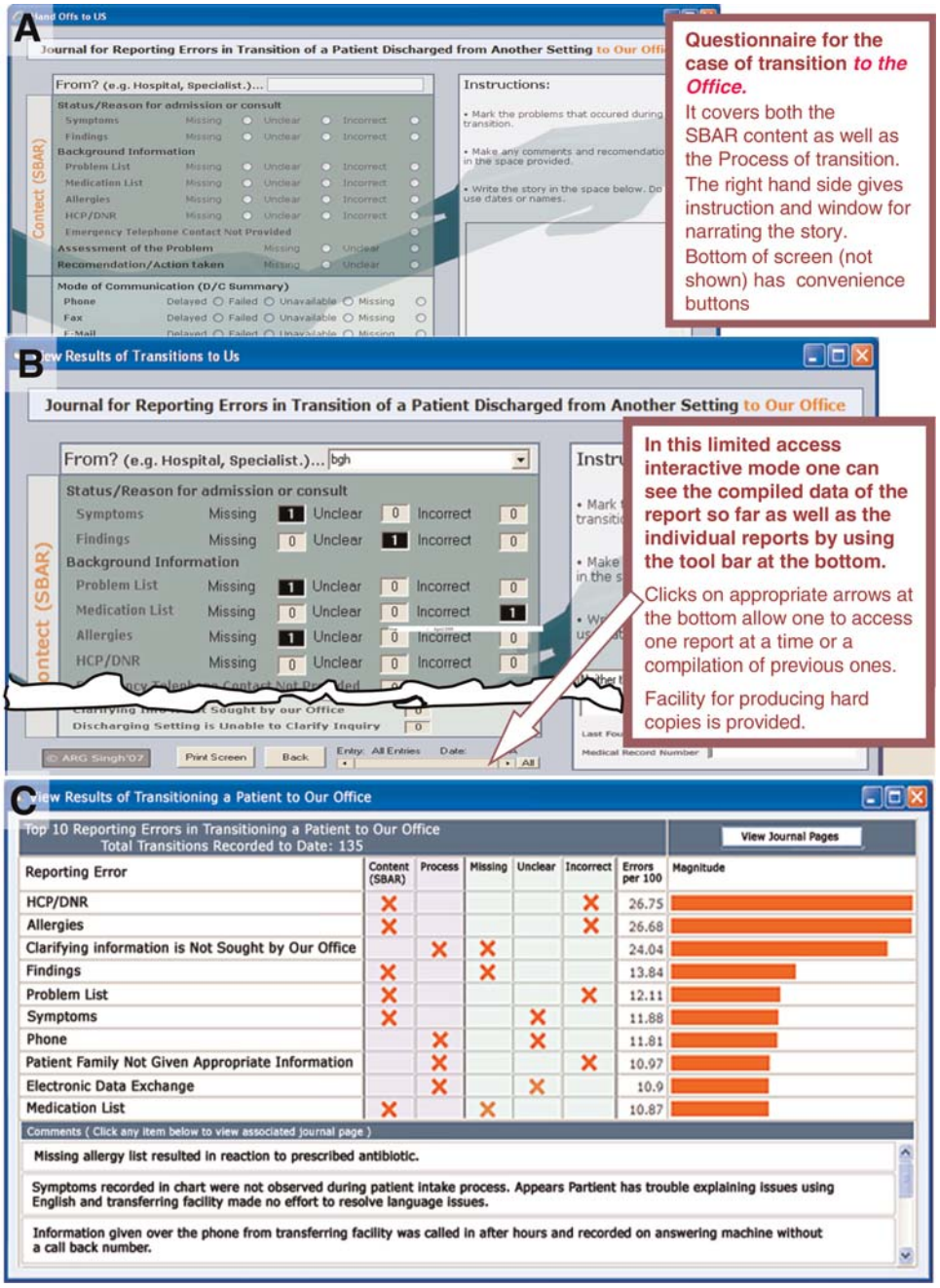


Figure 4
Interactive screen for reporting (a), viewing compiled data (b) and top 10 errors (c)



front-line staff is significant. Tools developed by end-users are more likely to be accepted and incorporated into workflow than those that are imposed from 'above'. A participatory process such as the one we used may be an effective means of addressing transitions. We suggest that this Transitions Journal developed by and for front-line staff has the potential to:

(1) provide opportunities for learning and improvement in quality of communication for safe, effective and efficient transitions of care;
(2) instill a systems approach;
(3) improve continuity of care;
(4) improve compliance with important national patient safety goals (e.g. Joint Commission);
(5) improve patient satisfaction;
(6) reduce duplication and unnecessary work, thus reducing costs and increasing efficiency;
(7) encourage team formation and teamwork embedded in a context-sensitive culture of safe transitions;
(8) provide mutual emotional and intellectual support for all staff.

Unanswered questions and future research

There are various issues that need further exploration. First, the efficacy of the transition tool for the various proposed functions needs to be studied. Outcome measures of interest would include frequency and types of transition errors, 30-day hospital readmission rates, and safety climate, specifically related to transitions. Further, it remains to be seen to what extent the format and content developed at the study site will be accepted in other settings. Since each setting is unique, each setting should consider tailoring the tool to suit its own needs. Further study is required to establish staff motivation and ability to create and implement setting-specific transition tools.

Seeing the huge potential of information technology (IT), the US Centers for Medicaid and Medicare Services (CMS) defined 'meaningful use' of IT as using an Electronic Health Record (EHR) for objectives that fall under four general topics:

- Improving quality, safety, efficiency, care coordination, population and public health;
- Reducing health disparities;
- Engaging patients and their families;
- Ensuring adequate privacy and security protections for personal health information.

All four of these topics, but in particular the first and the third, are important in the context of transitions. The capability to seamlessly exchange key clinical information among providers of care and patient-authorized entities electronically is expected to help achieve meaningful and measurable improvements in healthcare quality, safety and efficiency. However, the roadmap to achieving meaningful and measurable improvements has yet to be established.

Western New York, through a competitive federal funding process, was selected as one of the first 15 Beacon Communities to be funded by the US Office of the National Co-ordinator for Health IT. Applications such as web-based portals will be deployed to improve transitions across all levels of care – home/community, physician office, hospital, home care, short-stay rehabilitation, and long-term care. The Western New York Beacon Community will explore the use of the Transitions Journal as part of clinical transformation activities, examining impacts on quality, cost and efficiency.

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