Quality and Workflow:

How Novel Medication Reconciliation Software Transformed Communication & Enhanced Patient Safety

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1. Employ workflow redesign utilizing technology to promote safety through enhancing communication among caregivers.
2. Examine evidence-based concepts of medication reconciliation & nursing informatics to promote quality resulting in reduced adverse drug reactions.

Medication reconciliation is required on admission to acute care facilities to ensure that orders for inpatient medications reflect thoughtful consideration of the patient’s home medications, and that medications ordered on admission are adjusted accordingly (The Joint Commission, 2011b).

Despite the regulatory requirement, many patients do not have an accurate list of medications collected and documented on admission, potentially leading to Adverse Drug Events (ADEs) (Carney, 2006; HI; 2008; ISMP; 2006; Mansur, n.d.; McGaw, Conner, Delate, Chester, & Barnes, 2007; Poole, Chilcote, Pearson, & Graham, 2006; Pronovost et al., 2003; Schroppel et al., 2009, & Stefan, 2003).

The goal of medication reconciliation is to:
1. Obtain information on the medications the patient is currently taking when he or she is admitted to the hospital.
2. Compare the medication information the patient brought to the hospital with the medications ordered for the patient by the hospital in order to identify and resolve discrepancies (The Joint Commission, 2011b).

Although previous regulatory efforts, patient-centered, technology-enabled medication reconciliation is still not a consistent reality.

Menu-set option in MU1 in order to promote adoption of a technology-enabled process through financial incentives.

Becomes a Core Objective in MU2 with EP & EH needing to demonstrate compliance with 50% of all TOC.
"Old" Process & Workflow - Admission

- RN captures "home" meds on paper Admission Database
  - Source: Typically the patient
- Provider captures "home" meds on H&P
  - Source: Old records, multiple sources
  - Neither discipline sees the other's list
  - Pharmacy never sees either list
- Provider orders inpatient meds via CPOE
  - Pharmacy verifies
  - RN administers meds
- No independent double-check or cross check

Reality of the hand-written chart

H&P Provider Home Med List

- Provider writes out list of home medications on middle panel of paper discharge form
- RN re-writes med list on right panel of tri-fold form
  - The provider is to have manually reviewed the H&P & current active order in CPOE to create list
  - The RN is to have verified the provider list & compare to Admission Database, CPOE, & H&P
- Second RN to verify process
Meet the 2006 Joint Commission Medication Reconciliation requirement

Utilize grant monies to purchase medication reconciliation software and implement

Roll-out in 2007

Pharmacy to manage

No medication reconciliation software was available for purchase as a stand-alone or add-on solution for the existing CPOE

Decision was made to create a novel system

The Joint Commission mandate was delayed as many organizations struggled to meet the mandate

Development took 18 months

Initial product was released in late 2008, clinician validation found user interface cumbersome & redesign was needed

The Joint Commission extended the implementation date to January 2009

Programmers and pharmacy leaders did not include end-users in design

Goal was to meet regulation, *not usability*

Due to the delay and initial lack of front-line staff input, a pilot was conducted

Patient safety issues identified during pilot

Three months spent fixing – pilot again

Success!!! July of 2011 . . . Just in time?

Flaw – No edit feature
Informatics & the Sociotechnical Process

Informaticians are prepared to influence, contribute to, and mold the realization of an organization’s vision for knowledge management.  
McLane & Turley, 2011

Communication is essential.  
(AHRQ, 2011; ISMP, 2005; Pronovost, 2003; Poole et al., 2007; Schnipper et al., 2009)

Interdisciplinary cross-checks, independent redundancy, independent double checks  
(AHRQ, n.d.; Poole, et al. 2006), McGaw et al. (2007), and Schnipper et al. (2009)

Integrated electronic process is critical

Focus has been on discharge process, not admission. Complete data on transitions is essential.  
(Greenwald et al, 2010; McGaw et al., 2007; Poole et al., 2007; Schnipper et al., 2009)

Need more data about environment & process on admission (Poole, 2007; Schnipper et al., 2009)
G. Octo Barnett’s 10 HIT Commandments

1. Know what you want to do
2. Thou shall construct modular systems - given chaotic nature of hospitals
3. Thou shall build a computer system that can evolve in a graceful fashion
4. Thou shall build a system that allows easy and rapid programming development and modification
5. Thou shall build a system that has consistently rapid response time and is easy for the non-computernik to use

(Silverstein, 2011)

6. Thou shall have duplicate hardware systems
7. Thou shall build and implement your system in a joint effort with real users in a real situation with real problems
8. Thou shall be concerned with realities of the cost and projected benefit of the computer system
9. Innovation in computer technology is not enough; there must be a commitment to the potentials of radical change in other aspects of healthcare delivery, particularly those having to do with organization and manpower utilization
10. Be optimistic about the future, supportive of good work that is being done, passionate in your commitment, but always guided by a fundamental skepticism.

(Silverstein, 2011)

Ensuring that usability through direct input from front-line clinical staff is a priority during design phase (ISMP, 2005; Leviss, 2010; Silverstein, 2012)

Change management with support of administration, clinical informatics, physicians and nurses, and IT are as important, if not more so, than the software or system itself (Greenwald et al., 2010; Koppel & Kows, 2009; IOM, 2012; Silverstein, 2011; Weir 2009).

Weir et al. (2009) confirm this view by stating:

“A sociotechnical perspective is essential. Technology and the institution must be viewed as an indivisible whole and change as an emergent property to properly answer the question of how to transform an institution into a 21st-century health care institution” (p. 393).

Computers are incredibly fast, accurate and stupid; humans are incredibly slow, inaccurate and brilliant; together they are powerful beyond imagination.” - Author Unknown

Source: http://www.benshoemate.com/2008/11/30/einstein-never-said-that/


References


References


References