

RESEARCH LETTER

“Whose Job is it, Really?” Physicians’, Nurses’, and Pharmacists’ Perspectives on Completing Inpatient Medication Reconciliation

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Medication reconciliation, when performed well, effectively identifies discrepancies and reduces medication errors in the hospital setting.^{1–3} This process involves 4 major steps: (1) obtain and document a comprehensive medication history on admission, (2) compare the medication history to medication orders in the hospital and identify and resolve discrepancies, (3) provide the patient with a written list of discharge medications, and (4) educate the patient about their discharge medication regimen.^{4–6}

However, medication reconciliation has been challenging to implement given difficulties with accurate medication information, patients’ ability to communicate or remember, and clinician’s not having enough time, motivation, or clear roles.^{5,7–11} Lack of role clarity is generally a barrier to quality improvement; therefore, we studied the perceptions of physicians, nurses, and pharmacists about their roles and responsibilities in completing inpatient medication reconciliation.

METHODS

We independently surveyed attending and resident physicians, nurses, and pharmacists at the University of California San Francisco (UCSF) Medical Center via email who were actively caring for hospitalized patients in April 2010. We collected data on demographics, roles on specific tasks in the medication reconciliation process from admission through discharge, and attitudes and barriers toward medication reconciliation and health information technology systems. Responses to questions used a 4-point Likert scale. We calculated frequencies and proportions, and used the Fisher exact test to evaluate differences in role agreement for specific medication reconciliation tasks.

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RESULTS

Of 256 active clinicians, 78 completed the survey (30.5% overall response rate) providing care in various hospital services (medicine, surgery, cardiology, neurology, pediatrics, obstetrics/gynecology). We received responses from 7 attending physicians (16% response rate), 14 resident physicians (19% response rate), 35 nurses (43% response rate), and 22 pharmacists (43% response rate). Most clinicians worked more than 5 years at UCSF, except residents (1–4 years).

Overall agreement was poor to fair on whose primary role it was for specific medication reconciliation tasks from admission through discharge (Table 1). Clinicians mainly agreed that it was a physician’s responsibility to decide which medications should be continued or discontinued on admission and discharge, although agreement between attending and resident physicians varied. Fisher exact test revealed significant differences in agreement among attending and resident physicians, nurses, and pharmacists to obtain and document a medication history on admission ($P = 0.001$), provide a list of the discharge medications ($P < 0.001$), or educate patients on the postdischarge medication regimen ($P < 0.001$). For these tasks, the physician, nurse, pharmacist or a combination of these clinicians (multiple category) were each identified to be responsible.

Most clinicians believed that maintaining a patient’s list of medications improves patient care (94%–100% agreement). However, when asked whether clinicians other than yourself should be responsible for an accurate medication list, most nurses (73%) and pharmacists (52%) agreed with this statement compared to resident (50%) and attending physicians (29%). Most clinicians agreed that information technology systems for reconciling medications were complicated, and that patients who do not know their medications, accessing outside medical records, working with inaccurate lists, or non-English-speaking patients are barriers to reconciliation.

DISCUSSION

We found fair agreement among clinicians that physicians were responsible for reconciling medications on admission and discharge. However, attending and

TABLE 1. Role Agreement for Specific Medication Reconciliation Tasks

Clinician	Response to "who is responsible"				
	Attending	Resident	Nurse	Pharmacist	Multiple*
A. On admission, obtaining and documenting the patient's medication history ($P = 0.001$)					
Attending	1 (14%)	6 (86%)	0	0	0
Resident	0	14 (100%)	0	0	0
Nurse	6 (17%)	20 (57%)	5 (14%)	2 (6%)	2 (6%)
Pharmacist	1 (5%)	9 (41%)	0	10 (45%)	2 (9%)
B. On admission, deciding which medications will be continued or discontinued ($P = 0.027$)					
Attending	6 (86%)	1 (14%)	0	0	0
Resident	3 (21%)	11 (79%)	0	0	0
Nurse	12 (34%)	22 (63%)	0	0	1 (3%)
Pharmacist	4 (18%)	15 (68%)	0	2 (9%)	1 (5%)
C. On discharge, deciding which medications will be continued or discontinued ($P = 0.123$)					
Attending	6 (86%)	1 (14%)	0	0	0
Resident	5 (36%)	9 (64%)	0	0	0
Nurse	10 (29%)	15 (43%)	1 (3%)	1 (3%)	8 (23%)
Pharmacist	5 (23%)	12 (55%)	1 (5%)	0	4 (18%)
D. On discharge, providing a list of the discharge medications to the patient ($P < 0.001$)					
Attending	1 (14%)	6 (86%)	0	0	0
Resident	0	13 (93%)	0	1 (7%)	0
Nurse	2 (6%)	22 (63%)	3 (11%)	6 (17%)	2 (6%)
Pharmacist	0	4 (18%)	2 (9%)	14 (64%)	2 (9%)
E. On discharge, educating the patient on the postdischarge medication regimen ($P < 0.001$)					
Attending	1 (14%)	4 (57%)	1 (14%)	1 (14%)	0
Resident	0	4 (29%)	8 (57%)	2 (14%)	0
Nurse	0	2 (6%)	23 (66%)	8 (23%)	2 (6%)
Pharmacist	0	0	3 (14%)	14 (64%)	5 (23%)

NOTE: Survey responses included 7 attending physicians, 14 resident physicians, 35 nurses, and 22 pharmacists. Agreement on who is responsible for specific medication reconciliation tasks significantly differs across clinician groups when $P < 0.05$. *The multiple category represents choosing more than 1 type of clinician to be responsible for a particular medication reconciliation task.

resident physicians each believed it was their primary responsibility, respectively, suggesting the need for better communication between each other. We found poor agreement among clinicians about whose primary role it was to perform the other main steps of medication reconciliation including obtaining and documenting a medication history, and providing a medication list and educating the patient at discharge. For these tasks, there was more confusion among physicians, nurses, and pharmacists. Our findings highlight the need for better role clarity and good communication among team members, particularly at discharge.

Nearly all clinicians agreed that updating patients' medication lists improves patient care. However, most nurses and pharmacists preferred that physicians be responsible for updating information and reconciling medications. They also noted a number of patient-related and information system barriers to effective reconciliation as others have identified.⁷⁻¹¹ Although standardizing medication information reporting and implementing technology that can integrate medical records to create, update, and share information between patients and providers can help streamline the medication reconciliation process,^{4,5,7,8,12} these procedures are unlikely to be effective unless good interprofessional communication, role clarity, and

clinician understanding of how the system works are in place.

When this study was conducted, our institution's policy required that medication reconciliation be completed, but no specific roles or standard work documents existed. Since then, we have clarified the role of the physician to be responsible for completing medication reconciliation with ancillary help from nurses, pharmacists, and other clinicians, particularly when obtaining a medication history and preparing the patient for discharge. This role clarity has led to focused training and "standard work guide" documents as guidance to clinicians in different hospital settings about expectations and how to complete medication reconciliation. Clearly, no single reconciliation workflow process will meet the needs of all hospitals. However, it is crucial that interprofessional teams are established with clearly defined roles and responsibilities, and how these roles and responsibilities may change in various situations or services.⁸

Our study had several limitations. We surveyed 1 academic medical center, thus limiting the generalizability of our findings to other organizations or settings. Our small sample size and low response rate could be susceptible to selection bias. However, our findings are similar to other studies.^{7,10,11} Finally, we

included clinicians practicing on various services throughout our hospital, and the local medication reconciliation process could have contributed to the poor agreement. Nonetheless, differences in perceived roles and attitudes for completing medication reconciliation were observed.

In conclusion, lack of agreement among clinicians about their specific roles and responsibilities in the medication reconciliation process exists, and this may result in incomplete reconciliation, inefficiency, duplication of work, and possibly more confusion about a patient's medication regimen. Clinically meaningful and efficient medication reconciliation requires inter-professional teamwork with clear roles and responsibilities, good communication and better information reporting, and tracking systems to successfully combine the steps of medication reconciliation and ensure patient safety.^{8,12}

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