

Use of tandem observations in ambulatory primary care to evaluate physician—nurse teamwork

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1 INTRODUCTION

With the introduction of the Primary Care Medical Home (PCMH) model, primary care systems are being redesigned to better perform these tasks given the increasing complexity of healthcare and the use of information technologies and teamwork structures. Typical direct observation strategies use the approach of pairing a single observer with a healthcare provider; however, the data has limitations (Battles & Lilford, 2003). Observing one provider at a time only reflects how one piece of the system interacts with the whole, which is not reflective of the overall effectiveness of the healthcare system.

Patient clinic visits require work before, during and after a patient is seen. In the case of most U.S. clinics, this work is performed by a “team” of two providers, a physician and nurse, who have different roles but are trying to complete both collaborative and individual tasks associated with each patient. Throughout a given day, physicians and nurses teams relay information to each other and others through verbal, written and/or electronic means. Hence, simultaneously observing all team members working together during a given period yields data that is more complete and dynamic in nature relative to the overall effectiveness of the healthcare system present to meet the patient’s needs. Hence, a more robust method of simultaneous tandem observation was developed and incorporated in a study evaluating medication information management during transitions of care. In particular, we sought to understand information flow within the primary care clinic and between clinicians and patients, as well as to capture failures in information flow and processes used to recover from failures. We hypothesized that simultaneously observing nurse-physician teams would yield data that were more representative of actual events.

2 METHODS

The observation method uses two observers to evaluate the work of and information flow across a physician-nurse team in a primary care clinic. Tandem observations were conducted by a human factors engineer and a human-factors trained physician, one person observing the nurse and the other observing the physician. Observations started at the beginning of the morning or afternoon session of seeing scheduled patients and ending 3–5 hours later. Eighteen provider-nurse teams, six each at three different primary care clinics in the US were observed, totaling 130 hours. Observation notes were taken free-hand and transcribed by the researchers for analysis. Both sets of observation notes were reviewed by the observers for completeness. The observations were then analyzed separately and together using

a pre-determined coding structure to identify failures in medication information flow and recovery mechanisms.

3 RESULTS

Table 1 shows an example of failure of medication information flow during a patient visit. The text in Table 1 is a summary of the observation text. Analysis of the paired observation reveals that the physician plan for the patient to take two tablets of sleeping medication will fail based on information the patient provided to the nurse, which was not communicated to the physician. This failure would not have been identified if the researchers were only observing the physician. There were multiple contributing factors evident from the observation including:

1. the lack of documentation by nurse of pt taking 20 mg for MD,
2. time pressure to see a new patient in a short visit and the need to address other issues like high blood pressure,
3. the focus on the nurse obtaining a list of medications with no mechanism to easily indicate on the list that the patient is taking more medication than prescribed,
4. patient expectations that the nurse documented their conversation about the sleeping medication dose for the physician to see,
5. the nurse comments on the dose increase to the patient which may have prevented the patient from the admitting higher dose to the physician.

Many similar examples of failures in information flow between the nurse, patient and physician were found as a result of tandem observations. In addition, we found many examples of recovery from information flow failures occurring prior to the clinic visit and failures during the visit. Nurses, physicians, and patients recovered from their own failures and each others failures and worked together to recover from failures of information flow across the care transition.

4 DISCUSSION

Simultaneous, tandem observations of physician-nurse teams provided a more complete view of the work being performed before, during and after patient care visits. This method allowed us to observe information flow between the team members and the patient, and identifying failures in information flow, and how these failures were (or were not) recovered from during the patient care session.

Table 1. Example of failures in information flow at a patient visit.

Nurse observation: Nurse checks in new pt	Physician observation: Clinic appointment
<ul style="list-style-type: none"> • Pt called 1 wk earlier for appt, got RX for Ambien 10 mg nightly over phone for insomnia • Nurse reviews med list in EHR (Ambien) and checks that pt is taking med, reviews allergies, smoking hx and chief complaint • Pt states Ambien not working well, took double dose x 2 days and still not sleeping • Nurse tells Pt he should not take more med than prescribed. Does not document conversation. 	<ul style="list-style-type: none"> • MD greets new Pt and reviews Pt's medical hx, social hx • MD notes Pt's BP is high (not on meds) and that he smokes and discusses implications with Pt • MD discusses insomnia and Ambien use (MD now running behind for 15 min visit) • Pt states medication not working well • MD tells Pt to take 2 tablets nightly to see if this helps • MD tells Pt to follow-up in a few weeks with longer visit to discuss multiple problems

Pt = patient, EHR = electronic health record, MD = physician hx = history, BP = blood pressure.

ACKNOWLEDGEMENTS

This research was made possible by funding from the Agency for Healthcare Research and Quality. Grant Number: K08HS017014, Principal Investigator: Tosha Wetterneck.

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