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Prescriptions for Excellence in HEALTH CARE

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Medications and Care Coordination: Prevalence, Measurement, and Reduction of Errors

By *Karen B. Farris, PhD*

Medications and their dosages often change during hospitalizations and physician office visits. These changes require reconciliation with the medications patients already have in their homes or other health care facilities.

Medication reconciliation is defined as “a process for comparing the [patient’s] current medications with those ordered for the [patient] while under the care of the [organization]”.¹ The goal of this process is to ensure that individuals have available the correct medications in the correct doses at specified times.

In addition to intended changes, unintended changes may occur during transitions of care. Omitted drugs, changed doses, and changes in frequency of administration are the most common issues, but medications that should no longer be present may remain on the patient’s medication list.²

Studies of medication reconciliation have documented medication problems at admission and discharge,³⁻⁶ as well as during transitions to other facilities⁷ and back into the community.⁸ The magnitude of the problems varies by type of error and site of transition, but the evidence suggests that about one third of

patients admitted to a facility have an error on their admission medication lists and up to one third of patients have a discrepancy between their discharge medication lists and what they are taking 30 days later.⁶

Fortunately, many of these medication discrepancies do not cause significant harm, but those involving certain medications (eg, warfarin, insulin, nonsteroidal anti-inflammatory drugs) can have a serious, negative impact on chronic disease management and lead to adverse drug events. Thus, medication reconciliation to ensure that medication lists are transferred, checked, and evaluated in any new health care setting (including the patient’s home) has become an important National Patient Safety Goal.¹ The Joint Commission’s original implementation of this goal in 2005 presented difficulties for institutions and new guides are expected in 2011.

Medications are but one important aspect of coordinating care during various transitions. A broader view is necessary if we seek to improve the quality of care transitions in all aspects. To that end, the National Quality Forum (NQF) brings together health care organizations to discuss, measure, and report on quality indicators with

the expectation that these processes will lead to quality improvement.

The NQF endorses quality measures developed by various organizations using a standardized Consensus Development Process. Important to the topic at hand, NQF defined care coordination in 2006 as a “function that helps ensure that the patient’s needs and preferences for health services and information sharing across people, functions, and sites are met over time.”⁹

In 2008-2009, NQF led a Consensus Development Process to “endorse a set of preferred practices and performance measures in care coordination that are applicable across all settings of care.”⁹ From this process, 10 measures and 25 preferred practices were endorsed, 4 of which focused on medications across transitions of care.^{9,10}

The care coordination measures relevant to medications were submitted by the American Medical Association – Physician Consortium for Performance Improvement (NQF measure numbers 0646, 0647, 0648 and 0649). In addition to these 4 newer measures, the NQF had already endorsed 2 measures focused on medications and medication reconciliation from the National Committee for Quality Assurance

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(NQF measure numbers 0097 and 0554). The numbers for the measures are included here to enable a search of the measures database at the NQF Web site.

The most general measure (#0554) is defined as the “percent of discharges from January 1 to December 1 of the measurement year for patients 65 years of age and older for whom medications were reconciled on or within 30 days of discharge.” One measure (#0097) adds specificity to medication reconciliation conducted in physician offices within 60 days post discharge and another measure (#0646) assesses whether patients receive a reconciled medication list at discharge. Three measures focus on the transition record, in which medications are included, and document receipt of the transition record by the patient following an inpatient stay (#0648) or an emergency department visit (#0649) and its timely transmission (#0647). Additional documentation in the final report identifies all elements of the transition record.

In essence, NQF is broadening the focus on medication reconciliation to include medications within a transition record, and the types of information to be included in the transition record are specified. The value of the established NQF measures lies in their use by health systems to assess the quality of their care coordination across different settings.

Beyond the care coordination practices and measures, the NQF established the National Priorities Partnership (NPP), a collaborative group of 32 public and private organizations with health care interests. The NPP identified a set of 6 priorities in November 2008, believing that substantial improvement in those areas would result in transformative change in the health care system.¹¹

One of the 6 priorities is care coordination. In September 2010, the

NPP Care Coordination Convening Workshop was held, building on previous work to:

1. Identify environmental barriers with plans to address such barriers in achieving the NPP Care Coordination goals,
2. Identify gaps in measurement, and
3. Consider uses of health information technology.¹¹

We know that using NQF-endorsed measures to assess the quality of processes of care is essential to improving care. But, when problems are identified, how do we decide on the best approach for improving the processes of care? This is the role of randomized clinical trials or other research – to establish strong evidence of practices or processes of care that produce specific outcomes.

At the University of Iowa Hospitals and Clinics, we conducted a randomized controlled trial to quantify the effect of pharmacist-case managers on medication appropriateness, adverse drug events, and a composite measure of unscheduled office visits, emergency department visits, or rehospitalizations.¹² In this study, pharmacist-case managers:

- Conducted medication reconciliation at admission,
- Updated the hospital’s admission medication list,
- Monitored and visited patients daily,
- Created wallet-size medication lists for patients upon discharge, and
- Provided discharge counseling to all patients in the intervention arms of the study.

Patients in the enhanced intervention study arm also received a follow-up call 3-5 days post discharge. An enhanced

discharge care plan (format and example available upon request) with medication list (including medication name, dose, directions, titration, and monitoring plans) was sent to the patient’s primary care physician and community pharmacy. An enhanced care plan includes a summary of the course of each condition in the hospital, medication problem identification, and laboratory results and/or tests required to monitor the effects of medications.

The study was designed to allow separate determination of the effect of pharmacist-case managers’ inpatient activities on medication use versus their outreach activities. This will enable the results to be translated into effective practices by targeting aspects of the interventions to specific populations. For instance, the enhanced intervention with follow-up phone call and enhanced medication list may be used in populations for whom rehospitalization is the result of medication problems (eg, patients with diabetes using insulin, patients with heart failure).

As of August 2010, a total of 670 patients were enrolled in the study. An interim analysis of medication discrepancies showed that the number of important discrepancies was lower in primary care physician offices for the enhanced intervention group compared to the minimal intervention and control groups. Specifically, fewer medications were omitted from the medication lists in the physician records for those individuals in the enhanced care group.

In summary, we know that medication errors occur during transitions of care. Using NQF-endorsed measures provides a mechanism for evaluating care coordination practices such as medication reconciliation post discharge or timely transition record transmission in an institution or within a health plan. When problems are identified,

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implementing evidence-based interventions to improve medication reconciliation practices or other care coordination activities will result in improved processes of care that are known to impact outcomes of care.

Knowing which patients require reconciled medication lists, postdischarge phone calls, or home-based visits is critical to reducing medication-related rehospitalizations. Using nationally endorsed quality measures in conjunction with evidenced-based interventions can improve the quality of care coordination.

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