

## Evaluation Of Medication Coaching To Reduce Hospital Re-Admissions In An Indiana Care Transitions Project

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### Abstract

**Background:** In August 2008, the Centers for Medicare & Medicaid Services (CMS) awarded 14 Quality Improvement Organizations (QIOs) the Care Transitions project. One of the 14 QIOs was Health Care Excel (HCE), the QIO for Indiana. Among other activities, QIOs provide direct technical assistance to physicians, hospitals and nursing homes to improve the value of health care services that are paid for by Medicare. Medicare's Care Transitions project focuses on improving patient coordination across the continuum of health care settings to reduce the number of unnecessary hospital re-admissions. HCE has been concentrating its efforts to reduce 30-day re-hospitalization rates in the Evansville, Indiana Hospital Service Area (HSA). This HSA encompasses 90 counties, and is served by 6 hospitals, 11 skilled nursing facilities, 7 home health agencies, and 2 inpatient rehabilitation hospitals.

**Objective:** To evaluate a pharmacist-based coaching intervention conducted by hospital pharmacists to improve medication reconciliation and patient adherence with a medication regimen for patients with a principal diagnosis of heart failure (HF).

**Setting:** According to Medicare 2010 Q2 data, the Evansville HSA showed there were 171,998 beneficiaries in the target community. According to the 2000 Census, of those aged 65 or older, 31.16% lived alone. The average age of the Medicare beneficiaries in the target community was 72 years.<sup>1</sup>

**Participants:** From July 2009 through January 2010 hospital patients with an admitting diagnosis of HF who were admitted as inpatients to a large hospital system's cardiac telemetry unit, resided within the immediate HSA, and were discharged home.

**Measures:** Two outcomes were measured after hospital discharge: 1) Number of follow-up telephone calls made to recently discharged HF patients by pharmacy students and staff; and 2) Number of pharmacist interventions per patient through telephone calls.

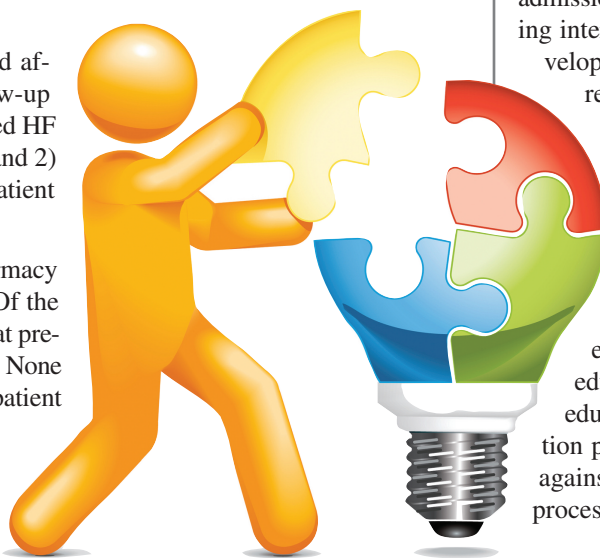
**Results:** Forty-two patients received pharmacy coaching and follow-up telephone calls. Of the 42 patients, 40 required an intervention that prevented a potential adverse medication error. None experienced undesirable outcomes, and 1 patient was readmitted to the hospital.

<sup>1</sup>U.S. Census Bureau; American Fact Finder Website located at: [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

### Introduction

Hospital A was identified in the target HSA for pharmacist-based coaching interventions as part of HCE's Care Transitions Project. Of the 1,344 Medicare patients admitted to Hospital A from October 1, 2007, to March 31, 2008, 16.59% were re-admitted within 30 days of discharge. For comparison purposes, Hospitals B and C implemented medication coaching without pharmacy involvement. Hospital B's re-admission rate during the same time period was 17.00% for 4,664 Medicare beneficiaries. Hospital C's re-admission rate was 17.96% for 2,372 Medicare beneficiaries. **Table 1** (pg. 19), shows hospital rates specifically for HF at baseline (first quarter 2008) and re-measurement (first quarter 2010). Hospital A had the greatest improvement in preventing 30-day hospital HF re-admissions.

Hospital A, with one of the highest re-admission rates, chose to focus on HF re-admissions. The pharmacist-based coaching intervention for HF patients was developed by the hospital pharmacy director to include the hospital pharmacist and pharmacy students. Hospital A is a top provider of advanced cardiac and pulmonary care and offers a full array of diagnostic and interventional cardiac services. This hospital is recognized as a leader in continuing health profession education, patient and community education, and screening and prevention programs that form the front line against heart and pulmonary disease processes. Its goal through this Care *(more on next page)*



Transitions project was to reduce all-care readmissions for patients with a principal diagnosis of HF by 2 percentage points.

Hospital A hypothesized that a pharmacy coaching intervention that included post-discharge telephone follow-up would improve medication reconciliation, would reduce potential adverse drug events, and would improve patient compliance. The pharmacy intervention involved:

- Making follow-up calls to patients within 72 hours of discharge,
- Reviewing medications for patients discharged home; and
- Making follow-up appointments with a primary care physician.

It was also important that the intervention be presented in a way that made it memorable for pharmacy students, who would then carry forward lessons learned and potentially disseminate this knowledge to patients throughout their careers.

## Methods

In July 2009, with QIO consultation, Hospital A designed a pharmacist-based coaching intervention program for HF patients using the hospital pharmacist and pharmacy students. To identify opportunities for improvement, rapid cycle processes were identified to improve patient adherence to their medication regimen for those with a principal diagnosis of HF. During the 13-month project, the hospital found that after discharge, at the time of the initial telephone call to the patient at home, an average of 1.37 pharmacy interventions per patient per call were required.

The QIO provided tools and resources throughout the project, bringing Eric Coleman, MD, MPH, professor of Medicine and Director, Care Transitions Program, University of Colorado at Denver and Health Sciences Center, and his team to Hospital A for onsite coaching intervention training. Additionally, the QIO arranged for health literacy experts from the American Medical Association to speak to staff.

To begin its pilot program, Hospital A formed teams that included the safety coordinator (pharmacy), clinical manager (pharmacy), student preceptor coordinator (pharmacy), cardiac rehab staff nurse

(nursing), executive director pharmacy/patient flow, and a pharmacy student. Team education on understanding care transitions and following the *Get with the Guidelines* (GWTG) model was provided by the hospital pharmacy director.

The Pharmacy Director's enthusiasm and his idea to build a bridge linking inpatient and ambulatory medication reconciliation processes engaged the hospital's senior leadership, who engaged corporate management, the home health agency, and rehabilitation departments. The majority of intervention success was due to the pharmacist champion in relaying the importance of pharmacy involvement for patient medication management and adherence.

In implementing the pharmacist-based coaching program, the hospital's education focused on conducting a hospital visit with a patient, follow-up telephone call to the patient within 24-72 hours post-discharge, and three follow-up telephone calls (2, 7, and 14 days post-discharge). Coaches trained patients to maintain their personal health records and to manage their own medications, and provided other coaching and support as needed. The coaching teams held regular meetings to discuss the problems they had identified and ways to improve the overall process.

Patients initially received an onsite pre-discharge visit from the hospital pharmacist or pharmacy student for medication reconciliation and education. A follow-up telephone call from the pharmacist or pharmacy student was then conducted one to three days post-discharge with the patient or care giver to ensure compliance with prescribed medication therapy and to answer questions. Two outcomes were measured after hospital discharge: 1) Number of follow-up telephone calls; and 2) Number of medication interventions, such as contacting the physician to clarify medication orders.

As a part of team education, Hospital A developed a pharmacy coaching toolkit that included a process overview, forms, scripting tools, and additional resources that could be accessed by pharmacy students implementing the coaching process.

With the goal of conducting pharma-

cy coaching hospital visits on the first full day of admission, pharmacy students explained the purpose of the meeting, the overall program, and use of the Medication Profile Card, and verified the best time to call the patient at home. They also asked patients to gather medication lists and bottles from home. The follow-up call to the patient's home included a review of the discharge medication list and asking open-ended questions. General questions and answers were provided along with counseling if needed. Students verified physician follow-up appointments, and asked if prescriptions were filled.

## Results

From July 2009 through January 2010, 42 HF patients were visited in the hospital, 29 successful post-discharge calls were made, and 40 interventions were put in place (1.37 pharmacy interventions per patient per call). Fifteen physician follow-up appointments were made, twenty-seven patients were satisfied with the post-discharge telephone call made to them, and one patient was rehospitalized. **Table 2** displays performance measurement data as presented by the Pharmacy Director, Don Julian, RD.

Pharmacy-related interventions included ensuring that missing prescriptions were written and filled, reconciling discrepancies in medication start date and dose, and providing appropriate counseling regarding medication use, smoking cessation, and appropriate diet. Patients were encouraged to use a weekly pill planner and contact their physician for issues or concerns.

Results indicated that the pharmacy intervention revealed the following types of errors:

- Newly prescribed medications not available,
- Discontinued medications still being used, and
- Lack of knowledge regarding indication for medication.

## Discussion

Patients are routinely ill-prepared for the transition from hospital to home. Inadequate communication between clinicians

**Table 1. A Comparison Of Hospital Readmission Rates For Heart Failure Patients Discharged Within The Evansville HSA**

Hospital Name	Baseline Rate (30-Day Unadjusted Discharge Rates: 01/01/2008 – 03/31/2008)	Readmission Rate (30-Day Unadjusted Rates: 01/01/2010 – 03/31/2010)	Percentage Point Improvement Achieved (From Baseline to Re-measurement)
Hospital A	34.9% N=63	15.4% N=39	19.5
Hospital B	20.5% N=112	11.2% N=116	9.3
Hospital C	20.3% N=64	16.7% N=60	3.6
Aggregate	24.3%	13.5%	10.8

\*Note: Goal is to reduce baseline rate by at least two absolute percentage points.

**Table 2. 30-Day Readmission Rates For Hospital A, All Diagnoses And Principal Diagnosis Of Heart Failure<sup>4</sup>**

Outcome Measures: Source data: Premier Quality Manager		Benchmarks QIO or CMS	Jan-June 2009	July 2009	Aug 2009	Sep 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010
30 day Readmissions, all diagnosis, all cause, all payor	Target <8.1%		10.4%	10.3%	10.3%	8.7%	9.1%	8.8%	9.7%	9.4%
30 day Readmissions, all diagnosis, all cause, Medicare	<13.5%	17.6%	14.5%	16.8%	16.3%	10.5%	13.7%	13.1%	14.0%	12.4%
<b>Number of patients diagnosed with principal diagnosis of HF</b>			<b>188</b>	<b>35</b>	<b>32</b>	<b>23</b>	<b>36</b>	<b>24</b>	<b>43</b>	<b>38</b>
30 day readmissions, first admission HF, Readmission all cause, all payor			23.8%	25.7%	28.1%	8.7%	36.1%	25.0%	14.0%	18.4%
30 day readmission, first admission HF, readmission all cause, Medicare	<19%	24.5%	22.3%	30.8%	33.3%	11.8%	42.9%	25.0%	14.3%	21.4%

and patients compromises post-discharge care. Redesigning the pharmacy medication reconciliation and patient educational processes improves continuity and quality of patient care and reduces the potential for medication errors or adverse events.

It is vital to make patient transitions a priority in order to reduce hospital readmissions. Adequate resources were the largest barrier to this pilot intervention. Looking forward, the hospital plans to involve sixth-year pharmacy students and establish a dedicated pharmacy student 3-month rotation. Hospital A intends to

make an effort to reach more HF patients, and expand the program to other medical conditions, including patients over 65 years, and those taking more than 10 medications.

### Funding

The analyses upon which this publication is based were performed under Contract Number HHSM-500-2008-IN9THC, funded by the Centers for Medicare & Medicaid Services, an agency of the U.S. Department of Health and Human Services. The content of this publication does not necessarily reflect the views or

policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsements by the U.S. Government. The author assumes full responsibility for the accuracy and completeness of the ideas presented. **RR**

*This material was prepared by Health Care Excel, the Medicare Quality Improvement Organization for Indiana, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. (9SOW-IN-TRAN-10-025 10/02/10).*