Title:
Development of a Dashboard to Provide Decision Support for Complex Care Management in Primary Care

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Session Title:
Health Information Technology Tools to Support the Implementation of a Complex Care Management Program
Slot:
F 09: Friday, 28 July 2017: 2:30 PM-3:45 PM
Scheduled Time:
2:30 PM

Keywords:
Care Management, Dashboard and Nursing

References:
Spetz, J., Bates, T., Chu, L., Lin, J., Fishman, N. W., & Melichar, L. (2014). Creating a dashboard to track progress toward IOM recommendations for the future of nursing. *Policy, Politics, & Nursing Practice*, 1527154414521014.

Singer, S.J., Burgers, J., Friedberg, M., Rosenthal, M.B., Leape, L., & Schneider, E. (2011). Defining and measuring integrated patient care: promoting the next frontier in health care delivery. *Medical Care Research and Review*, 68(1), 112-27.

Thompson, C., Fahs, B., & Kell, C. (2016). A Nurse-Led Collaborative Linking Medical Center with Community Partners Transforms Patient Care and Reduces Readmissions. *Heart & Lung: The Journal of Acute and Critical Care*, *45*(4), 381.

Abstract Summary:
An electronic dashboard was created to provide nurses with timely information and decision support to enhance proactive outreach and ongoing data tracking. The dashboard proved essential for identifying patients in need of management, and tracking ongoing enrolled panels. This led to a significant increase in patients enrolled in care management.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to describe how an operable population-based electronic dashboard was developed.	We will describe how an interdisciplinary team created a nursing dashboard and provide an image of what the dashboard looks like with key features.

The learner will understand how an electronic dashboard provides decision support for nurse care managers in primary care.	We will review specific features of the dashboard and describe how the team will use this data to care for complex patients.
The learner will understand the importance of a nurse-driven dashboard as a tool for Complex Care Management in a global setting.	We will describe how the tool is used at the Community Health Center, Inc. to meet the needs of the nurses and diverse communities across the state-wide organization.

Abstract Text:

Primary care nurses often need to take on the role of nurse care manager (NCM) as they support a provider's panel of complex patients. NCMs require access to timely information from a single source to effectively provide care management to patients. In the past, manual data registries were maintained by NCMs. In the current era of Big Data, it is important to move away from inefficient, time-consuming processes toward automatic tools. Doing so ensures better utilization of valuable clinical skills to maximize the overall benefits to patients.

An electronic dashboard was developed to provide NCMs with decision support during the implementation phase of a Complex Care Management Program across 12 clinical sites of Community Health Center, Inc. (CHCI). CHCI is a statewide agency providing care to individuals with low socioeconomic status, including many that are uninsured and underinsured. It has 14 integrated patient-centered primary care sites, delivering medical, behavioral health and dental services along with other ancillary care services such as those delivered by registered dieticians, podiatrists or chiropractors to name a few. CHCI delivers care in over 200 total service delivery sites, when school based clinics and health care for the homeless sites are included in the total count. The care management dashboard enables NCMs to identify high-risk patients who would benefit from enrollment in care management. It serves as a population management tool for groups at highest risk for adverse outcomes related to uncontrolled chronic diseases, repeated hospitalizations, and increased emergency department utilization. This ensures the NCMs can use this tool for both proactive outreach and ongoing population data tracking.

The dashboard was built through the collaboration of CHCI's frontline NCMs, Business Intelligence, the Quality Improvement Department, and the Chief Nursing Officer. The dashboard is updated daily by extracting data from individual electronic health records based on an algorithm using Uniform Data System (UDS) measures along with other clinical markers. It is then populated with the medical record numbers of patients who meet these criteria, including uncontrolled hypertension, diabetes and asthma. The dashboard lists a patient's last recorded blood pressure, hemoglobin A1c, and smoking status. It indicates whether the patient has had two or more visits to an emergency room within six months, and if the patient has 4 or more chronic conditions listed on their active problem list. Additionally, the dashboard imports claims data from the state Medicaid database, which identifies patients currently hospitalized and/or recently discharged from a hospital. The dashboard is especially important in providing this information to nurses as it is often delayed from local hospitals. Given the focus on supporting patients to achieve self-management, the date on which the last self-management goal was set or motivational interviewing was completed is listed on the dashboard. This supports NCM's ongoing tracking of each enrolled patient as they progress toward their self-management goals.

When the dashboard was implemented in August of 2014, the overall enrollment in CHCI's Complex Care Management Program was 17 patients. This number grew to 861 in year 1 of implementation and to 1724 by the end of year 2. Toward the end of year 2, NCMs were interviewed to explore their thoughts about the dashboard and to identify any changes or enhancements to improve the tool to better support their daily work. NCMs noted the value of the dashboard as an enhancement to their work. They could find information on their patients quickly and easily, and valued the tool as a means to support the ongoing follow-up required post hospitalization. One of the primary care nurses interviewed summarized

her thoughts by stating: "if we did not have a dashboard, I would spend less time on care coordination." The NCMs did identify several areas where they requested revisions or reorganization to the dashboard to enhance its overall functioning, which will be integrated into the second iteration. Implementing a Complex Care Management dashboard can improve nurses' confidence in delivering care to patients with complex needs. Since clinics that serve patients of low socioeconomic status typically have a large population of high-risk patients, the dashboard lends timely decision support and organization to NCMs to improve their ability to identify patients who would most benefit from Complex Care Management. This may lead to improvements in overall job performance and satisfaction in NCMs, and could therefore improve overall retention for key clinical team members.