

Automating Assessment of Obesity Care Quality

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Summary: Obesity and its public health effects are an increasing burden on the health care system. This project proposes to develop, implement, and evaluate a routine, automated method to assess outpatient obesity care quality using measures from comprehensive electronic medical record (EMR) data based upon the National Heart, Lung, and Blood Institute (NHLBI) obesity care guidelines.

The study team is investigating associations between obesity care delivery steps and clinical outcomes known or suspected to be accelerated by obesity. Measures to evaluate the association include: reasons for visit; orders; referrals; diagnosis codes; vital signs; text clinical notes pertaining to weight (BMI) and weight loss counseling; and other obesity intervention efforts. The project team is using percent change in body weight as the primary outcome measure.

Retrospective EMR data from Kaiser Permanente Northwest (KPNW), a midsized health maintenance organization and Oregon Community Health Information Network (OCHIN), a consortium of federally-qualified health centers, is being used to evaluate the association between obesity guideline adherence and clinical outcomes. The project is using Kaiser Permanente's Epic-based EMR, HealthConnect, and OCHIN's EMR, EpicCare. Information from both structured and free-text fields will be used. Free-text fields are being automatically coded using natural-language processing computer software. Data produced under the automated method of quality measurement is being compared to medical record reviews performed by abstractors in order to assess the validity of the automated system.

The automated system is being applied to patient populations of KPNW and OCHIN, which total more than 350,000 adults to determine: 1) the proportion of overweight or obese patients who are receiving advice, counseling, weight-loss program referral, medication prescription, and other care recommended by the guidelines; 2) correlates of overweight and obesity diagnosis and treatment guideline adherence including patient characteristics, comorbidity status, provider characteristics, and health system characteristics; and 3) changes in health status as a function of guideline adherence for obese patients.

Specific Aims:

- Develop obesity care quality measures based on updated NHLBI guidelines to evaluate obesity care performance in primary care. **(Achieved)**
- Use comprehensive EMR data to develop and validate an automated (generalizable and scalable) method for applying the measures identified in the first aim. **(Ongoing)**
- Apply the method developed in the second aim to assess ambulatory obesity care quality in two distinct health plans representing diverse patient populations and care practices. **(Ongoing)**

- Evaluate the association between measures of obesity guideline adherence to recommended obesity care processes and clinical outcomes and provider characteristics. **(Ongoing)**

2011 Activities: Study staff identified the content-specific rules and codes required to distinguish the relevant clinical events (e.g., the order codes used at each site that indicate “obesity counseling”), and codified the text statements clinicians use to satisfy the measures (e.g., “advised pt to lose wt”). These statements are being built into the knowledge base of the automated program that identifies the relevant clinical events of the quality measure set.

An abstraction form and process were developed to enable chart review to validate the measures. A random sample of approximately 450 study patients, stratified by age, sex, and BMI, was selected at each site. Both KPNW and OCHIN chart reviews were completed with a 10 percent sample validation, using a practicing primary care clinician to ensure the quality of chart reviews.

Early in 2011, the project slowed significantly because the OCHIN study site was reworking their data-sharing arrangements with their participating clinics. This put on hold all access to the data by the non-OCHIN staff. The data agreements were subsequently executed and the project team was able to view patient data and begin the key tasks of chart review and quality measure implementation.

All data necessary for applying the measurement process has been staged. Primary care encounter data was drawn for the resultant population for the observation period beginning in January 2007 in KPNW (yielding roughly 125,000 eligible patients), and OCHIN (yielding roughly 25,000 eligible patients).

Initially, the team planned a 24-month evaluation period because they interpreted the NHLBI guideline to mean that BMI and waist circumference were to be documented every 2 years. They have re-interpreted the guideline to mean that BMI should be assessed at all primary care visits for all patients, and waist circumference at all primary care visits for obese and overweight patients. This change in the method reduced the need for evaluation from a 24- to a 1-month window.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track in some respects but not others and project funds are significantly underspent due to the previously described delay of data-sharing agreements with participating clinics. The project is using a 1-year no-cost extension to complete the project.

Preliminary Impact and Findings: This project has no findings to date.

Target Population: Adults, Chronic Care*, Obesity

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

Business Goal: Knowledge Creation

* This target population is one of AHRQ's priority populations.