

Feedback of Treatment Intensification Data to Reduce Cardiovascular Disease Risk

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Target Population: Adults, Chronic Care*, Diabetes, Heart Disease

Summary: Despite the availability of highly effective medications for controlling the major cardiovascular disease (CVD) risk factors, many patients, including many at high risk for developing CVD, continue to be in poor control of systolic blood pressure (SBP), low-density lipoprotein cholesterol (LDL-c), and glycosylated hemoglobin (hemoglobin A1c). Evidence indicates that clinician failure to prescribe recommended increases in the intensity of medication regimens is frequently associated with poor control of these outcomes. Treatment intensification, the frequency with which clinicians appropriately increase pharmacotherapy in the face of poor control, has been proposed as a new measure of clinical quality. The linkage of process measures, such as treatment intensification to clinical benefit, is often supported by strong clinical trial evidence. Such measures could also be more useful than reports of risk-factor control because the actions needed to improve control are implicit in the measures and because concerns about case-mix differences are largely avoided. However, there is little empirical evidence that reporting and improving these process measures can lead to better outcomes.

The Intensification Feedback and Outcomes Study worked with eight primary care facilities of Kaiser Permanente Northern California to assess whether the use of systematic feedback on the need for treatment intensification in patients with poor control of CVD risk factors improves risk-factor control. Using a cluster randomized trial design, this project leveraged health information technology, including Kaiser Permanente's Certification Commission for Health Information Technology-certified Epic-based electronic medical record (EMR) HealthConnect and the population management software tool used for the Preventing Heart Attacks and Strokes Everyday (PHASE) program, to create and deliver this need for treatment intensification information to providers who have high CVD-risk patients. At intervention facilities, patient-level information was obtained from the EMR on the need for treatment intensification for SBP, LDL-c, and hemoglobin A1c, as well as recent medication adherence. This information was added to the PHASE population management database and fed back through software currently used by the PHASE staff working with primary care providers. Staff at control facilities continued to use the PHASE population management database and the same software but received information only on risk-factor levels and selected medications.

The proposed feedback intervention was tested for 6 months. The study population for primary analyses included all PHASE patients who were found to have had poor control of two or more of the CVD risk

factors and a need for treatment intensification at any point during the 6-month period. One primary analysis was tightly-linked processes (i.e., was treatment intensified more frequently) measured during the 3 months following initial reporting of need for intensification. Another endpoint was mean levels of intermediate outcomes (SBP, LDL-c, and A1c) measured for all study population subjects during a 9-month period that began 3 months after the end of the intervention. Secondary endpoints included proportions in control for each risk factor; treatment intensification and risk-factor improvements in patient subgroups defined by prior adherence to prescribed medications; efficiency of the intervention in terms of patient contacts, visits, and costs per unit improvement in risk-factor control; and provider reports of the utility and efficiency of the treatment intensification feedback. Positive findings point the way for other health information technology systems to achieve an effective means of lowering the occurrence of CVD and also serve to validate treatment intensification as a new process-of-care quality metric.

Specific Aims:

- Evaluate the effectiveness of measuring and reporting information on the need for treatment intensification in patients at high risk for CVD to improve rates of treatment intensification and to reduce levels of poorly controlled SBP, LDL-c, and A1c. **(Achieved)**
- Evaluate the impact of the intervention, compared to current population management practice, on total numbers of patient contacts, outpatient visits, and costs of care in relation to improvements in risk factor control. **(Achieved)**
- Evaluate the effect of the intervention on physician and staff perceptions of the value (effectiveness and efficiency) of the population management program for high risk patients. **(Achieved)**

2010 Activities: The study team primarily focused on data collection and analysis during this timeframe. Manuscripts were developed and published.

Grantee's Most Recent Self-Reported Quarterly Status (as of August 2010): The project was completed with all major aims achieved.

Impact and Findings: While adjusted treatment intensification rates for patients with elevated SBP and LDL-c levels differed somewhat in favor of the intervention facilities, proportions of patients who were in control of risk-factor values were similar (or slightly favored the control sites) at the end of the followup period. Because the intervention overall had minimal impact on outcomes, a full cost-benefit analysis of the intervention was not undertaken. The qualitative assessment of the intervention showed that facilities would be more willing to use this type of information in population outreach, and that their use would be more effective, if treatment intensification flags were created in a more timely fashion and if patient-level adherence data were also provided.

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

Business Goal: Synthesis and Dissemination

* *AHRQ Priority Population*