

The Effect of Incident Comorbidities on Guideline-Concordant Chronic Disease Care

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Description

Little is known about how the development of a new chronic health condition affects management of existing chronic conditions over time. New conditions might worsen management of existing conditions because of competing demands or improve management of existing conditions because of increased engagement with health care.

As part of research efforts to inform guideline specificity, this study modeled how an event from a comorbid condition (such as an exacerbation of a coexisting chronic illness, or the diagnosis of a new condition) can affect guideline-based care for an underlying condition.

Specific Aims

1. Assess the effect of the comorbidities of new-onset depression, new-onset treatable cancer, and exacerbations of chronic pulmonary disease on control of risk factors for the index condition of type 2 diabetes.
2. Based on results of these analyses, propose specific adaptations to existing diabetes care guidelines and alternate care management strategies for complex patients with diabetes, which will be amenable to further investigation.

Findings

- Among three cohorts of similar age, the mean levels of hemoglobin A1c, systolic blood pressure (SBP), and low density lipoprotein (LDL) did not change significantly over time from before to after the diagnosis of a new comorbidity.
- Despite good individual risk factor control, only a small percentage of individuals were able to achieve and maintain simultaneous guideline concordant values of HbA1c, blood pressure, and LDL:

Main Objective

Develop a model that describes how new or exacerbated comorbid conditions affect guideline concordant care for an existing condition.

Chronic Conditions Considered

Type 2 diabetes (index condition)
Depression
Cancer
Chronic pulmonary disease

Preventive Service Considered

This project did not address a specific clinical preventive service.

Study Design, Data Sources & Sample Size

Analytic epidemiological study
Cohort of 5,873 Kaiser Permanente Colorado patients.

Strategies Addressed from the HHS Strategic Framework on Multiple Chronic Conditions

- 3.C. Address multiple chronic conditions in guidelines
- 4.C. Increase clinical health research

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9.6% over 12 months, 16.3 % over 24 months, and 22.4% over 36 months.

- A qualitative analysis revealed several themes that may potentially differentiate between persons with improving versus static A1c levels, including: social issues creating competing care demands, discordant comorbidities, treatment intensification, and engagement with self-care tasks.

Implications

On a population level, A1c, blood pressure, and LDL were not affected by the additional disease burden presented by the new comorbidities studied. However, competing demands for patients and/or clinicians may affect simultaneous control of the multiple cardiac risk factors associated with a diagnosis of diabetes.

Publications (as of September 2013)

Schroeder EB, Hanratty R, Beaty BL, Bayliss EA, Havranek EP, Steiner JF. Simultaneous control of diabetes mellitus, hypertension, and hyperlipidemia in 2 health systems. *Circ Cardiovasc Qual Outcomes*. 2012 Sep 1;5(5):645-53.

Raebel MA, Ellis JL, Carroll NM, Bayliss EA, McGinnis B, Schroeder EB, Shetterly S, Xu S, and Steiner JF. Characteristics of patients with primary non-adherence to medications for hypertension, diabetes, and lipid disorders. *J Gen Intern Med*. Jan 2012; 27(1):57-64. Epub 31 Aug 2011.

Raebel MA, Carroll NM, Ellis JL, Schroeder EB, and Bayliss EA. Importance of including early nonadherence in estimations of medication adherence. *Ann Pharmacother*. Sep 2011; 45(9):1053-60. Epub 18 Aug 2011.

Bayliss EA, Blatchford PJ, Newcomer SR, Steiner JF, Fairclough DL. The effect of incident cancer, depression and pulmonary disease exacerbations on type 2 diabetes control. *J Gen Intern Med*. 2011 Jun; 26(6):575-81.

Posters and Presentations

Schroeder EB, Bayliss EA, Newcomer SR, et al. Predictors of hemoglobin A1c trajectories in a cohort of patients with diabetes. Poster presented at: American Heart Association Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke 2011 Scientific Sessions; 2011 May 12-14; Washington, D.C.

Schroeder EB, Bayliss EA, Newcomer SR, et al. Simultaneous control of cardiovascular risk factors among patients with diabetes, hypertension, and hyperlipidemia. Presentation at the American Heart Association 51st Conference on Cardiovascular Disease Epidemiology and Prevention in Atlanta, GA, 2011

Bayliss EA, Blatchford PJ, Newcomer SR, Steiner J, Fairclough D. The effect of incident cancer, depression and pulmonary disease exacerbations on type 2 diabetes control. Poster presented at: North American Primary Care Research Group Annual Conference 38th Annual Meeting; 2010 Nov 13-15; Seattle, WA.