Performance Feedback Can Improve Diabetes Care Provided By Residents

Ziemer DC, Doyle JP, Barnes CS, et al. An intervention to overcome clinical inertia and improve diabetes mellitus control in a primary care setting: Improving Primary Care of African Americans with Diabetes (IPCAAD) 8. Arch Intern Med 2006;166:507–13.

Study Overview

Objective. To investigate if computerized reminders, specialist feedback, or both can overcome physician inertia related to intensifying diabetes therapy.

Design. Randomized controlled trial.

Setting and participants. Over a 3-year period, 345 internal medicine residents in the Grady Medical Clinic (affiliated with Emory University) were randomized to be controls or to receive computerized reminders that provided diabetes patient–specific recommendations at each visit and/or a 5-minute feedback session on performance every 2 weeks by an endocrinologist. Physician baseline performance was measured 6 months prior to the intervention.

Main outcome measure. Steps taken by residents to reduce glucose level. Resident behavior was characterized as "did nothing" (no steps taken), "did anything" (any intensification of therapy), or "did enough" (intensification met recommendations) for each patient visit where glucose levels exceeded 150 mg/dL (n = 4038).

Main results. At baseline, residents did anything for 35% of visits and did enough for 21% of visits when changes in therapy were indicated, without notable differences among intervention groups. During the trial, resident behavior was most improved during the first year and then declined. However, resident behavior intensified more in the feedback alone and feedback plus reminders groups compared with the reminders alone and control groups ($P < 0.001$). After 3 years, resident behavior in the reminders alone and control groups returned to baseline. Improvement in the feedback alone and feedback plus reminders groups did decline but remained above baseline: 52% "did anything" and 30% "did enough" ($P < 0.001$ for both versus the reminders alone and control groups). Multivariable analysis showed that feedback on performance contributed independently to intensification of resident behavior, which then contributed independently to decreases in glycated hemoglobin (HbA_{1c}) ($P < 0.001$ for both).

Conclusion. Feedback on performance led to improved clinical behaviors in residents and lowered HbA_{1c} levels for diabetic patients.

Commentary

Diabetes, now the sixth leading cause of death in the United States, is a significant public health burden [1]. Despite several well-known trials demonstrating that better metabolic control can reduce long-term complications [2], the National Health and Examination Survey 1999–2000 showed that only 37% of t he diabetic population achieved an HbA_{1c} level less than 7% [3]. Unfortunately, the recent National Healthcare Quality Report indicates that care for patients with chronic diseases, including diabetes and coronary artery disease, remains inadequate [4]. Prior studies have investigated ways to improve physician adherence to national guidelines, and computerized reminders and feedback sessions have proven useful [4–6]. Thus, Ziemer and colleagues initiated the current trial to test interventions to improve diabetes care by reducing "clinical inertia" (ie, failure of health care providers to intensify diabetes therapy).

This is an interesting trial that compared the effect of computerized reminders, feedback sessions with an endocrinologist targeting overall performance (rather than case consultation), or both on diabetes care provided by residents. Chart review established whether residents intensified diabetes therapy appropriately, intensified therapy at all, or did nothing. Interestingly, even the control group had an initial improvement in therapy intensification, demonstrating the Hawthorne effect (ie, behavior change due to awareness of being monitored) and that the residents had the knowledge to provide appropriate diabetes care from the beginning of training. Over 3 years, intensification rates returned to baseline for both the control and computerized reminders groups, which suggested that residents were ignoring the reminders. Despite some concerns about clustering and contamination across groups, the increase in rates of intensification in the feedback and feedback plus reminders groups remained significant, and these results support the use of one-on-one feedback to improve diabetes care. This trial suggests that increased feedback during residency training can enable

residents to improve their chronic disease management skills.

Applications for Clinical Practice

Individualized feedback on resident performance improves adherence to recommendations to intensify therapy for patients with type 2 diabetes who are not achieving glycemic targets. Such improvements in provider behavior are independently associated with a reduction in HbA_{1c} levels among patients with diabetes. Training programs may want to include this approach to educate residents on managing chronic diseases.

—Review by Mark S. Horng, MD

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