

Setting A

The Community Mental Health Center (CMHC) described in this report consists of four outpatient clinics (one Rural, one Urban, and two Suburban) that provide psychiatric care and case management for publicly insured mentally ill adults in the St. Louis and surrounding areas. Clinical providers consist of attending staff psychiatrists at all sites, as well as PGY-3 general psychiatry residents from a local medical school who see patients for ½ day per week as part of a year-long community mental health clinical rotation at the Urban CMHC site.

The reported intervention aimed to implement a minimal standard for metabolic screening of antipsychotic-treated patients in response to the joint ADA/APA recommendations¹. This minimal standard included, but was not limited to, at least annual screening of plasma glucose. In accordance with ADA guidelines,² a fasting plasma glucose greater than 100 mg/dl, and a random finger-stick glucose of 110 mg/dl or higher were considered “at-risk.” To increase the sensitivity of the random plasma glucose values as a screening tool, “at-risk” for these samples was defined as any value greater than 125 mg/dl. All patients with an “at-risk” value either had the test repeated for confirmation, or were referred for further evaluation by a primary care physician.

When site-specific screening rates remained below target, site visits were conducted to evaluate the screening process and identify areas for improvement. For example, when screening rates remained below 70% in 2006 at Suburban site 2, a site visit revealed a problem with the initial identification of antipsychotic-treated patients. In this case, medical records staff were re-educated about how to perform record reviews and physician notifications of need for glucose screening. Similarly, in response to low screening rates during 2006 at the Urban site, a site visit indicated satisfactory processing of reminders but discovered that resident physician screening rates were lower than that of staff physicians, with a nadir in July at the beginning of the academic year. In late 2007, a 4th year resident on a month-long Administrative Psychiatry elective held a meeting with the PGY-3 residents to re-educate them on screening objectives, and to elicit feedback about the screening program. In this meeting, residents suggested that the prompt for ordering a glucose test be moved to the chart cover so that it was more visible. A follow-up meeting was held in spring of 2008.

Setting B

While resident physicians saw patients in both settings A and B, they received initial education about screening and reminders prior to clinic appointments in relation to the patients they saw in setting A only, with no reminders for their setting B patients they saw on the other 4½ days of the week. They also did not receive monthly email or hard-copy rank-order listings of their setting B screening performance in comparison to their peers.

The setting B clinic is part of a larger multidisciplinary clinic setting, with different floors devoted to different therapeutic areas including internal medicine and surgery, where faculty physicians provide clinical supervision of residents.

Patients who are seen in the academic clinic can have their blood drawn in the psychiatry clinic, in the internal medicine or other specialty clinics, or at the on-site outpatient hospital lab.

Program Outcomes

Figure 2 presents the control charts for monthly glucose testing rates for antipsychotic-treated adults receiving care at each of the four CMHC clinics during the study period. Average baseline screening rates by site were: Urban = 54%; Suburban 1 = 35%; Suburban 2 = 37%; Rural = 58%. During 2006, screening rates increased at all sites; Suburban site 1 (42% change from baseline) and the Rural site (19% change from baseline) met the 70% screening goal, while the Urban site (7% change from baseline) and Suburban site 2 (18% change from baseline) did not. In the second year of the program (2007), the Suburban 1 and Rural sites both met the 90% screening goal, while the Urban site and Suburban 2 sites again did not. In the third year of the program (2008), average screening rates rose at each site, but the Urban and Suburban 2 sites remained slightly below the 90% target while the Rural and Suburban 1 sites continued to exceed the target. Increases in low screening rates followed targeted interventions at Urban and Suburban 2 sites in 2007 and 2008 (see figure 2).

An assessment of the control clinic in December 2007 indicated an overall screening rate of 58%, where glucose screening was counted whether ordered by a psychiatrist, or any other physician. Compared to screening rates at the four individual CMHC clinics, the Setting B-specific screening rate was 26-38% lower than CMHC screening rates at all sites during the same month.

Discussion

In an effort to understand the pattern of observed results, setting-specific characteristics were evaluated. Although the psychiatrists in setting B received the same educational information as those at the Urban intervention site, annual glucose screening rates were lower than those observed in the Urban CMHC setting, where active client-specific and physician report interventions were in place. Additionally, setting B physicians, who also constitute the majority of the medical staff one of the four setting A sites, the Urban CMHC site, did not receive electronic communications that included the rank-order listing of screening rates by physician, and also did not attend the monthly meetings where this information was presented. This suggests that, in addition to active goal setting and advocacy from the medical director and general education from a variety of sources, a key element of change may be the physician- and client-specific reminders.

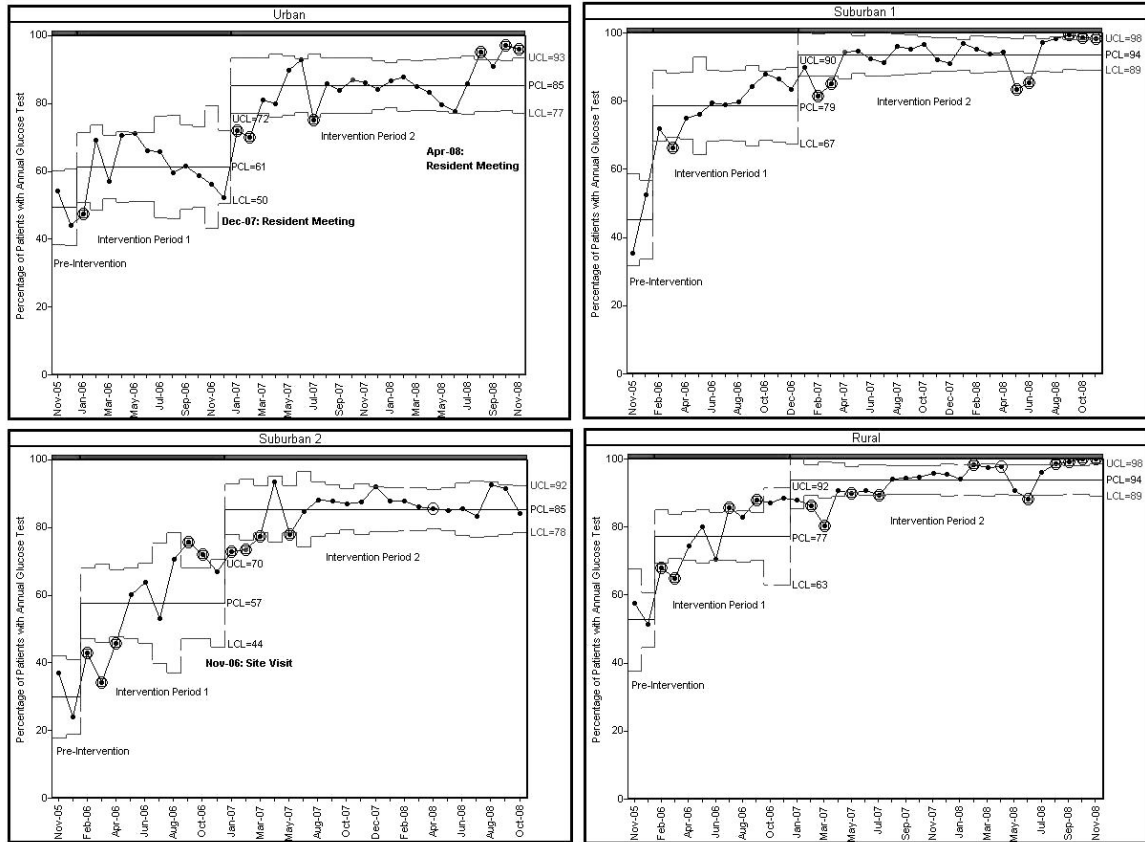
Targeted interventions in response to low screening rates at two of the CMHC sites were also assessed. Specific patterns in screening rates at the Urban site were observed, including an annual decrease in screening rates at the beginning of each academic year (July). In 2006, orientation to the glucose screening program was included in the overall resident-orientation to the CMHC rotation. In subsequent years, while the pattern persisted, screening rates reliably

increased within one month of orientation. Additional interventions tailored to individuals or groups of physicians where screening remained low (including group-specific interventions such as a resident medical meeting), indicate that responsiveness to group preferences and perceptions with regard to the screening program may be necessary to improve screening rates. These intervention elements have been shown to be essential for the adoption of a broad range of innovations³.

References

1. American Diabetes Association. Consensus development conference on antipsychotic drugs and obesity and diabetes. *Diabetes Care* 2004 Feb;27(2):596-601.
2. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care* 2004 Jan;27 Suppl 1:S5-S10.
3. Rogers EM. *Diffusion of Innovations*. New York, New York: Free Press; 2003.

Figure 2. Control charts of monthly glucose testing rates for antipsychotic-treated adults receiving care at four community mental health clinics



PCL indicates Process Center Line (average glucose screening rate) for each intervention period: screening target for period 1 (Jan 2006-Dec 2007) was 70%, screening target for period 2 (Jan 2007-Dec 2008) was 90%. UCL = upper control limit; LCL = lower control limit. Square and circle around points indicates the point is outside control limits.