A Simplified Model for Educational Outcomes Measurements (EOMs): Change in Serum Lipid Monitoring Rates in Patients With Bipolar Disorder or Schizophrenia

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About the Poster

Abstract Number: P20

Theme Related Area: Quality of care and patient health outcomes improvement

Competency Area: 3.2 – Use measurement data to assess outcomes/results of the learning intervention as a basis for determining future learning needs and for determining the application of the educational knowledge and skills

Target Audience: Non-beginners

Member Section: All

Objectives

After viewing this poster, participants at the 2012 Alliance for CME annual meeting should be able to:

1. Describe a model for measuring performance improvements in their CME program.
2. Appreciate the value of collaboration with physicians, as well as with their institutional affiliations.
3. Explain the processes involved in creating a collaborative, comparative outcomes study.
4. Analyze data from study and control groups for simplified performance improvement outcomes reporting.
5. Utilize outcomes reports as foundational work for future continuous performance improvement activities.

Background

Continuing medical education (CME) seeks to improve patient health by promoting clinician practice change.[1,2] Working as CME providers, we documented that many clinicians do not appropriately monitor serum lipid levels in their mentally ill patients who are prescribed second-generation antipsychotic agents (SGAs). With this need identified, we designed educational interventions to promote improved monitoring, and then measured the effects of those activities on actual practice change among the clinician CME participants by statistical testing of educational research hypotheses. This poster reports on the methods and results of the outcomes measurement project.

Metabolic Monitoring in Patients With Major Mental Illness

Rationale for Monitoring

The risk of developing untoward cardiovascular and metabolic complications—or cardiometabolic risk (CMR)—is high in a significant number of Americans, with approximately one-third of adults in the United States meeting criteria for the cardiometabolic syndrome (CMS);[3] and this risk is even higher in adults with major mental illness.[4] It is estimated that CMS prevalence in bipolar disorder may be as high as 66%.[5] Key lifestyle and medication factors that are particularly relevant for patients with major mental illnesses often include a smoking habit, and typically, a sedentary lifestyle. These patients are often treated with SGAs,6 agents whose use is associated with increased cardiometabolic risk.[5,6] Specifically, some of these agents are associated with decreased insulin sensitivity, derangements in plasma glucose and lipids, and weight gain.[7,8] Because of findings available in 2004, the United States Food and Drug Administration (FDA) asked manufacturers to add a new warning to all SGAs' labels about these drugs' increased risk of hyperglycemia and diabetes, and the need to monitor metabolic side effects. This recommendation was endorsed by a consensus panel from the American Diabetes Association/American Psychiatric Association,[9] the STAndards for BipoLar Excellence (STABLE) project collaborators,[10] and other key medical groups.

Background cont'd

CME to Address the Gap Between Desired and Actual Monitoring Rates

Despite the well-documented and encouraged directive for metabolic monitoring in patients taking SGAs, many practice assessment studies confirm that metabolic screening practices among clinicians are often incomplete or inconsistent.[11-14]

Seeing the gaps documented above, the University of South Florida and CME Outfitters, LLC, collaborated to develop two CME activities that addressed the clinical problem of underperformance of metabolic monitoring in this patient population. These CME activities featured a faculty moderator who facilitated a 1-hour panel discussion between two faculty experts in psychiatry in a live broadcast (TV, webcast, and telephone). The CME content was clinically focused, while still presenting leading-edge data about the underrecognition and suboptimal management of CMR in adults who are being treated with an SGA medication for the management of bipolar disorder or schizophrenia. One CME activity (on schizophrenia) addressed monitoring in a global fashion; the other (on bipolar disorder) focused on lipid monitoring.

Methods

Study Populations and Data Collection

Primary and secondary outcomes were assessed through sampling in two clinician groups who participated in one or both of the designated educational activities. One participant group was a random, nationwide sample of clinicians (NP) and the other was a group of clinicians practicing at the Lindner Center of HOPE in Cincinnati, Ohio (LP). Both groups were assessed over 12 months for practice behavior changes in lipid monitoring rates in patients with bipolar disorder or schizophrenia who were within their first 16 weeks of SGA therapy. Clinicians in the NP group were surveyed about the number of patients they see each month who are newly prescribed an SGA and their rates of lipid monitoring in such patients in the past and 12 months after their participation in a designated CME activity.

A nationwide control group (NC) was also used. To generate a cohort of clinicians to serve as a nationwide control group (NC), the CME Outfitters database was queried to generate a list of all clinicians in the database who had 1) self-identified psychiatry as their primary clinical specialty, 2) provided a valid electronic mailing address, 3) not opted out of receiving correspondence from CME Outfitters, and 4) not participated in either of the two designated CME activities. This list included 9,324 clinicians, all of whom were invited to complete a two-item, online survey on their lipid monitoring rates in patients who were within their first 16 weeks of SGA therapy.

The LP group included clinicians (n = 10) at the Lindner Center of HOPE who were, at that time, prescribing SGAs to their patients with bipolar disorder or schizophrenia. These clinicians were invited to participate in the CME activities and follow-up study. After participation in one or both of the designated activities, the clinicians were sent a "commitment-to-change" form. Further, participants were asked to participate in a sham educational effectiveness study, which allowed blinding to the fact that they were being monitored for hyperlipidemia testing. The Lindner Center of HOPE then collected data through the surveillance of lipid monitoring in a direct electronic medical record review of participating clinicians' patients who met inclusion criteria.

Statistical Analysis

Analyses of probability and statistics used Microsoft Excel for Windows, version 2010, for data manipulation and statistical analysis. For two-tailed Student's t-testing, the probability level (alpha) was set at .01. Within the NP group, change between baseline and follow-up assessment rates was analyzed by paired, 2-tailed t-test. Significance of difference of changes in rates from baseline to follow-up between NP and NC groups was studied by paired, 2-tailed t-test. Research variables were defined for probability and statistical testing.

Methods cont'd

The independent variables were:

- Participation in a designated CME activity that addresses the need to consistently assess blood lipid levels (as being representative of metabolic monitoring) in patients taking SGAs
- Inclusion in a local team of clinicians with institutional support for practice change regarding blood lipid assessments in patients taking SGAs.

The dependent variable was:

- The rate at which clinicians perform blood lipid assessments in their patients with bipolar disorder or schizophrenia within these patients' first 16 weeks of SGA therapy.

Results

Participation

Of 100 participants on neuroscienceCME.com who submitted responses to the nationwide survey, 83 were included in the NP group for this analysis (discarding data from outliers and those who submitted unclear responses). The NC group included 118 respondents. While the local survey at the Lindner Center of HOPE was originally planned for participation among 10 physicians, the LP group expanded to 41 participating clinicians, who were tracked to gather performance change data.

Findings for the Nationwide Participant Group

Significant differences were found in the rates at which learners in the NP group performed blood lipid assessments in patients who were in their first 16 weeks of SGA therapy before and after participation in a designated CME activity. The NP group had significantly higher rates of blood lipid assessments after participating in CME, with a 17.8% higher mean rate, increasing from 44.6% to 62.3% ($p = .00001$); this performance improvement was a significantly greater change than that seen in the NC group over the same 12-month period ($p < .00001$; correction for unequal variance). Findings of a 5.8% reduction in monitoring rates in the NC group were not significant. See Table 1.

Table 1. Mean Percentage Changes in Nationwide Participants' Blood Lipid Assessment Rates in Patients Taking Second-Generation Antipsychotic Agents Over 12 Months After Clinician Education Compared With Rates in a Control Group.

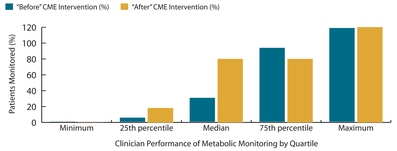
Measures of Blood Lipid Assessments	Nationwide Participants (n = 83)	Nationwide Controls (n = 118)
Mean Baseline Rate (% Patients Monitored)	44.6	63.9
Mean Follow-Up Rate (% Patients Monitored)	62.3	58.1
Gross Change in Mean Rates (% Patients Monitored)	17.8	-5.8
p Value: Change Within Groups	.00001*	.305
p Value: Change Between Groups	<.00001†	

* Denotes significant difference within groups between baseline and 12-month follow-up.
† Denotes significant difference between groups in change between baseline and 12-month follow-up.

Monitoring rates increased for more than half of the clinicians who responded. NP group respondents at the 25th and 50th percentiles increased their monitoring, those at the 75th percentile had a lower monitoring rate, and those in the 100th percentile had no change in monitoring rates (see Figure 1).

Results cont'd

Figure 1. Changes in blood lipid assessment rates in patients taking second-generation antipsychotic agents over 12 months after clinician education, by quartile.



Findings for the Local Participant Group

Analysis revealed a greater change in rates of metabolic monitoring in the LP group than in the NP group. The mean baseline rate of blood lipid assessment in this group was 27.5%, while the mean follow-up rate was 55.5%, a 102% increase. The LP group's 28% gross increase in mean performance of blood lipid assessment was therefore 62% higher than in the NP group.

Conclusions

- Participation in an online CME intervention that addressed clinician gaps in, and health system barriers to, implementing consistent metabolic monitoring increased the rate at which clinicians perform blood lipid assessments in their patients within these patients' first 16 weeks of SGA therapy.
- Clinicians who have institutional and peer support for practice change regarding lipid monitoring are probably better able to implement practice change regarding lipid monitoring than those who do not.
- Needs persist for both 1) additional, ongoing education with a goal of improving clinical care and treatment outcomes in patients taking SGAs and 2) additional, larger-scale studies such as this one to measure the effects of targeted continuing education.

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