Evaluating the Cost Impact of PSYCKES – On June 23, 2009, Lloyd Sederer, M.D., convened a meeting to develop a plan to study the impact of PSYCKES-Medicaid on prescribing practices, costs, and broader aspects of care. Representatives from both OMH and DOH, the state agency responsible for Medicaid, were present. Richard Frank, Ph.D., Deputy Assistant Secretary for Policy and Evaluation in the U.S. Department of Health and Human Services, helped OMH design an evaluation of the cost impact of the PSYCKES initiative using Medicaid claims data. Recommendations included using a difference-in-difference approach as well as a decomposition of the cost offset of the PSYCKES initiative. To see a summary of the meeting, please see below.
Psychiatric Services Clinical Knowledge Enhancement System (PSYCKES)
Cost Impact
Planning Day Meeting
New York State Office of Mental Health
44 Holland Avenue, Albany, NY 12229
Commissioner’s Conference Room
June 23, 2009

Attendees
Harvard:
Richard Frank, Ph.D.

DOH:
James Figge, M.D., M.B.A
Foster Gesten, M.D.

OMH:
Mike Hogan, Ph.D.
Bruce Feig
Robert Myers, Ph.D.
Lloyd Sederer, M.D.
Susan Essock, Ph.D.
Molly Finnerty, M.D.
John Allen
Stewart Gable, M.D.
Martha Schaefer Hayes
Jayne Van Bramer
Sheila Donahue, M.A.

Maria Pangilinan, Ph.D.
Amitabha Bhaumik
Nitin Gupta
Emily Leckman-Westin, Ph.D.
Riti Pritam, M.A.
Qingxian Chen, M.S.

EBP-TAC:
Carlos Jackson, Ph.D.

Background

Lloyd Sederer, OMH medical director, opened the meeting, explaining that the New York State Department of Health (DOH) funded the Office of Mental Health (OMH) to migrate the Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES) project to community providers by summarizing medication utilization based on Medicaid claims data. Previously, PSYCKES had been initiated only within state facilities. The current version of PSYCKES uses Medicaid claims data to generate reports profiling performance at the state, region, county, agency, program, and prescriber levels and provides treatment histories of consumers whose medication regimens are flagged by quality indicators.

The PSYCKES-Medicaid project was launched 1 year ago, and Lloyd Sederer convened this meeting to develop a plan to study the impact of PSYCKES-Medicaid on prescribing practices, costs, and broader aspects of care (e.g., health and clinical outcomes). A large portion of New York State pharmacy spending is for psychotropic medications in general and antipsychotics in particular, making this especially timely.

Molly Finnerty reported that PSYCKES is part of an ongoing quality improvement initiative aligned with the OMH’s Continuous Quality Improvement Initiative and NYC
Department of Health and Mental Hygiene’s Quality Impact Program to improve psychotropic prescribing in the state. The program began in NYC in December 2008 and was implemented in the rest of the state (and state-operated outpatient clinics) in March 2009. Currently, PSYCKES has been implemented in 92 percent of eligible freestanding mental health clinics and 100 percent of state-operated mental health clinics. PSYCKES is not currently available in mental health clinics associated with a hospital, providing the potential for a comparator.

OMH asked clinics to choose an indicator set to focus on—either psychotropic polypharmacy (antipsychotic, antidepressant, and psychotropic polypharmacy) or prescribing antipsychotics with high to moderate risk of cardiometabolic side effects to recipients with evidence of cardiometabolic condition(s). About two-thirds of the participating clinics chose to use the polypharmacy indicator set. There is wide variation among clinics in the number of clients and outliers. In terms of PSYCKES use, all participating agencies have logged into the system at least once, and about 60 percent of the agencies are using the system at least once in any given month. To date, the PSYCKES initiative does not appear to have had an impact on prescribing practices for the two indicators.

**Evaluating the Impact of PSYCKES**

Richard Frank noted that there are narrow and broad ways to look at the impact of PSYCKES, including changes in prescribing patterns, pharmacy spending, mental health spending, and total Medicaid spending. Some important points to consider when evaluating a policy change are:

- The inferential challenge to remove secular trends so that any differences that are observed can be attributed to the intervention.
- The need to define a counterfactual—a comparison group that looks like the group where the policy was initiated, and more importantly, has a similar trajectory (on a parallel path) as the experimental group prior to the policy change. For the PSYCKES project, this could include agencies that selected the alternative continuous quality improvement (CQI) project, agencies where PSYCKES has not been implemented, or patients treated with antipsychotics whose providers are not using PSYCKES.
- The need to examine both the experimental and comparison groups during the time periods before and after the policy change.

Policy changes like this are typically evaluated via a difference-in-differences (DID) approach. In a DID analysis, baseline differences are of less concern than nonparallel trends. The impact of an intervention is the difference pre and post in the experimental group minus the difference pre and post in the comparison group – in other words, the difference in the post period between the expected trajectory of the experimental group and the actual data observed in the experimental group. The key is determining
whether the counterfactual is truly on a parallel path, and this requirement can be tested rigorously.

Cost-offset theory suggests that appropriate prescribing practices reduce use of other treatment inputs, while inappropriate prescribing increases side effects and other complications. In fact, offsets are often claimed and rarely discovered. A more narrowly targeted investigation (e.g., focusing on a specific disorder) can increase the chance of observing the impact of an intervention.

A decomposition of the cost offset can help determine the reasons for cost savings. The offset could be attributable to factors unrelated to the policy change. Costs are driven by number of users, volume of medications used, and prices set for medications. Savings might be observed because of fewer instances of polypharmacy, fewer people taking antipsychotics, or changes in pricing (e.g., switching to generics). And unintended consequences of policy changes can include increased hospitalization or discontinuing medications. Foster Gesten commented that the duration of an expected impact can vary widely depending on the outcome of interest (e.g., prescribing practices versus development of diabetes).

**Non-continuously Medicaid enrolled individuals.** The group considered whether to exclude non-continuously enrolled individuals. Richard Frank recommended excluding non-continuously enrolled individuals unless they are a large portion of the sample. For the youth population, including only children who are continuously eligible might be a good policy. Richard Frank recommended testing whether experimental and comparison groups have similar rates of Medicaid discontinuity. Another solution might be to include continuous eligibility as a variable in the analysis, especially in cases where there are large differences in continuous eligibility.

**Matching individuals.** One important consideration is the level at which matching might occur. If the change appears to occur via organizational input, then matching at the clinic level is important. If certain types of individuals would be best served by the intervention, then matching at the individual or recipient level might be more important.

**Focus on specific disease categories.** Focusing on specific disease categories can also help tighten analyses. Richard Frank encouraged OMH to match individuals within the experimental and comparison groups, utilizing advanced matching technologies (e.g., propensity scoring). He strongly supported matching people at least by disease group (e.g., comparing people with schizophrenia in Article 31 clinics to people with schizophrenia in Article 28 clinics). Richard Frank recommended using propensity score matching and then comparing across settings. Propensity variables could include comorbid psychiatric and medical disorders, history of psychiatric hospitalization, age, sex, and race/ethnicity.
In terms of initial steps toward an analytic plan, Richard Frank suggested that certain “tracer” populations be followed in quarterly cross-sections (including a variable for how long the recipient had been observed) on the outcomes of interest by whether they were served in a participating clinic or not. The tracer conditions identified included schizophrenia, bipolar disorder, and perhaps depression for adults. In children, a condition might be more difficult to identify, but ADHD with comorbid conduct disorder as a tracer condition might be best.

**Implementation of CQI Interventions.** Another factor to consider is the number of CQI interventions from different groups; these data could be considered in terms of the “dose” of the intervention. OMH needs to identify clearly what interventions are being delivered and when. Phased rollouts can be used as an opportunity for comparison groups. Another option is to use Medicaid data from neighboring states and conduct a regional analysis (for example, northeastern NY compared with western MA and western NY compared with northwestern PA).

Commissioner Mike Hogan has encouraged augmenting the data with site visits to find out how these CQI programs are actually being implemented, including visits to both good and poor performing agencies. Others suggested identifying local champions at the agencies and giving provider report cards to consumers to create some natural competition.

**Price.** Because prices can fluctuate for a number of reasons, Richard Frank recommended that OMH should think about “costs” in terms of services utilized as opposed to claim amount and create a price index for analysis.

**Wrap up**

Mapping out the workplan: OMH has Medicaid claims data for 4 years before and 2 years after the policy change. Richard Frank estimated that the workplan to accomplish the analyses outlined above would require:

- 1 FTE data programmer
- 50–75 percent FTE research assistant to speak with clinics and document how the intervention is being implemented
- 20 percent FTE research coordinator (e.g., Ph.D. in economics, epidemiology)
- 15–20 percent FTE statistician.
- Small percent FTE of an economist.

Bruce Feig noted that in the current fiscal environment there is not likely to be significant state funds available to undertake an extensive evaluation. The evaluation plan will need to be commensurate with whatever modest funding the state can provide.
Recommendations for statistician: Naihua Duan, Sue Marcus (propensity), Sharon Lise-Normand.
Recommendations for economists: Pinka Chatterji (SUNY-Albany), Colleen Barry (while not an economist per se, she performs economic impact analyses), or Susan Bush (Yale).

OMH would need to identify a statistician and an economist to help with this project. Molly Finnerty indicated her goal to have a written plan to give to DOH by early- to mid-August 2009.

**Next Steps**

1) Molly Finnerty will approach Pinka Chatterji as a possible economist for this project.

2) Susan Essock will approach Naihua Duan to see if he or someone in his division would be willing to serve as statistician/methodologist for the project.

3) Molly Finnerty will arrange for the statistician and economist to be briefed by Richard Frank on today’s meeting, and then they will work together to draft a workplan, including an analytic plan, for OMH to review.