



Category: Cross Boundary  
Collaboration and Partnerships

Project: The Psychiatric Services and Clinical  
Knowledge Enhancement System (PSYCKES)

State Agency: New York State Office of  
Mental Health/Department of Health



The Psychiatric Services  
and Clinical Knowledge  
Enhancement System



*Improving New Yorkers' Quality of Life*

Prepared by CIO/OFT on Behalf of  
The Office of Mental Health/Department of Health

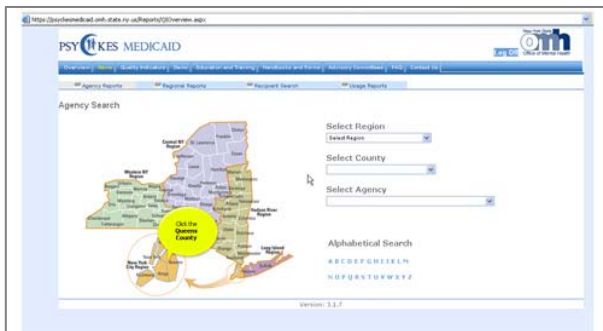


## B. Executive Summary

While New York faces some of the worst economic difficulties we have ever seen, government agencies are putting critical strategies in place to increase operational efficiency and reduce costs. **Through collaborative technologies, the New York State Department of Health (DOH) and Office of Mental Health (OMH) has undertaken the initiative to improve the quality and efficiency of psychotropic prescribing practices in NYS.**

The **Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES)** - initiative is based on an award-winning portfolio of web-based tools designed to identify Medicaid enrollees statewide who are receiving care that is considered both costly and questionable in quality. Through PSYCKES, system users are able to easily review quality indicators, identify consumers whose treatment could benefit from review, and obtain medication and service utilization

information to support quality improvement and clinical decision-making.



PSYCKES User Interface

In developing the set of robust quality indicators for PSYCKES, OMH and DOH collaborated with a diverse and extensive group of stakeholders including: academics, advocates, providers, consumers, and family members. This successful collaboration, along with the PSYCKES tools, laid a solid foundation for an initiative that continues to provide benefits to all stakeholders and to the taxpayers of New York State. PSYCKES is

**utilized by 92% of eligible clinics statewide, reaching 40 percent of those Medicaid recipients with quality flags.** Through PSYCKES, significant improvements in the quality of care have been achieved, while at the same time the costs of providing this care have been reduced through efficiencies of **more than \$88 million in pharmaceutical costs.**

Using PSYCKES mental health providers have access to accurate and complete patient medical history so treatment plans can be efficiently developed and effectively executed. The care provided to Medicaid patients is directly improved and the cost of providing this care is reduced. Saving Medicaid tax dollars contributes significantly to meeting our Governor's strategic initiatives to reduce costs, improve efficiency, and improve the delivery of services to New York residents.

Since PSYCKES utilizes existing data from the NYS Medicaid claims, all of the benefits of the initiative accrue **without any additional costs to New York State.**

This application addresses several of NASCIO's State CIO Top Priorities including: Budget and Cost Controls; Shared Services; Health Information Exchange and Business Intelligence and Business Analytics.



## C. Business Problem and Solution

### ***Problem***

Research across the United States shows that a majority of individuals diagnosed with a serious mental illness do not receive evidence-based care. Over the past decade a number of studies have documented quality issues including under- and overdosing of medications, inadequate duration of medication trials, frequent changes in medication regimens, medication adherence issues, off label use of psychotropic medications in children, and the use of polypharmacy. Psychotropic polypharmacy is a particular concern due to potential side effects such as weight gain, diabetes, and metabolic syndrome, as well as increased risks of drug-drug interactions. The use of medications with significant metabolic side effects is also of concern, given high rates of



cardiometabolic conditions and under treatment for these conditions among those with mental disorders.

Informed clinical decision-making and best practices require knowledge of past treatments and their results, but accurate and complete medication histories are very difficult to obtain. Consumers have long and complicated treatment histories and may lack specific information about past medications, and are often seen by many different physicians in many different treatment settings. Unfortunately, communication among staff within a single health care agency often fails to convey important clinical information, and communication challenges are even greater across agencies.

### ***Solution***

In response to these concerns, the New York State Department of Health and Office of Mental Health are collaborating on a four-year initiative to improve the quality and efficiency of psychotropic prescribing practices in NYS. The project is based on the adaptation of successful OMH program, the Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES), to the Medicaid population. Initially developed for use in state psychiatric facilities where it supported significant improvement in medication practices, PSYCKES is an award-winning portfolio of web-based tools designed to identify Medicaid enrollees statewide who are receiving care that is considered both costly and questionable in quality.

Users can navigate through state, region, county, agency, program, and recipient-level reports to review quality indicators, identify consumers whose treatment could benefit from review, and obtain medication and service utilization information to support quality improvement and clinical decision-making.

PSYCKES utilizes administrative data from the NYS Medicaid claims database to generate quality indicators and summarize treatment histories. This administrative data is collected when providers bill Medicaid for services. All states are required by the



Federal Government to monitor the quality of their Medicaid programs. Since all reports are based on Medicaid data, no data entry by mental healthcare providers is required.

OMH/DOH PSYCKES was designed to support both quality improvement and clinical decision making. Quality Improvement (QI) teams currently use PSYCKES to: identify consumers who meet criteria for the project; identify variations in prescribing patterns at the site and prescriber level; and to track performance over time.

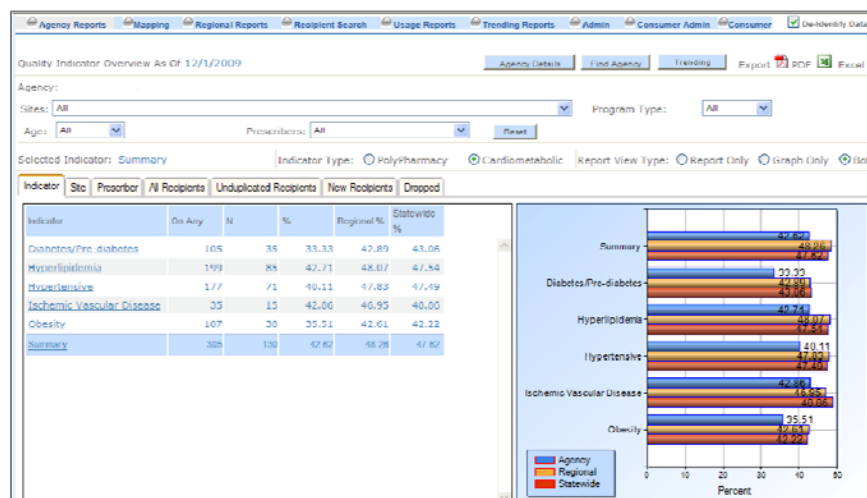
Clinicians currently use PSYCKES to review up to five years of Medicaid treatment data across settings, including medications, outpatient services, and hospitalizations. This allows them to: identify consumers whose medication regimens may pose risks; review a comprehensive list of past medications and services for consideration in treatment planning; and identify other providers involved in a consumer’s care (see **Figure 1**).



Other Key Components of PSYCKES Include:

- Agency Reports which allow users to find an agency and look at the performance of all programs within that agency, relative to state and regional performance.
- Regional Reports allow users to drill down from state and regional level data to county, provider, program and prescriber level performance profiles.
- Recipient Search allows users to search for an individual Medicaid enrollee or group of enrollees with similar characteristics.
- Clinical Reports summarize five years of clinical history across treatment settings for clients whose medication regimens meet indicator criteria.
- Education and training materials, including web-based Continuing Medical Education (CME) modules for prescribers, are available for download.

**Figure 1:**  
**PSYCKES User Interface - Quality Indicator Overview**



## **Technical Overview**

PSYCKES is a three tier web based application developed in .NET & Oracle technology. The PHI (Protected Health Information) within the system is protected by dual authentication using ClearTrust . Oracle's Fine Grained Access mechanism controls agency user's access to only their data. All usage of the application gets monitored by Oracle's Fine Grained Auditing. Infragistics and Dundas software plug-ins enhance the grids, drill-downs, maps and graphical features in the .NET front end which make the application very intuitive and user friendly.

## **Timeline**

The OMH/DOH PSYCKES collaboration was implemented in New York City clinics in November 2008 and in the remainder of the state starting February 2009. It is important to note the reporting period includes all data available since the PSYCKES initiative was operational.

## **D. Significance**

The OMH/DOH PSYCKES initiative is organized around a series of indicators designed to highlight quality concerns in psychotropic prescribing. These indicators were developed through extensive collaboration among diverse groups of stakeholders including the New York State Office of Mental Health, the New York State Department of Health, the New York City Department of Mental Hygiene, the New York State Psychiatric Institute/ Columbia Division of Mental Health Policy and Services Research, provider coalitions, a Stakeholder Advisory Committee, and a Scientific Advisory Committee of national experts in the field of psychopharmacology. Members of the Stakeholder Advisory Committee include:

- The Coalition of Behavioral Health Agencies, Inc.
- Conference of Local Mental Hygiene Directors
- Greater New York Hospital Association
- Healthcare Association of New York State (HANYS)
- Mental Health Association of New York State
- National Alliance on Mental Illness NYS/NYC (NAMI)
- New York Association of Psychiatric Rehabilitation Services (NYAPRS)
- The New York State Psychiatric Association
- New York State Council for Community Behavioral Healthcare

The PSYCKES Scientific Advisory Committee identified over 70 potential quality concerns in psychotropic prescribing. Working together with the stakeholders, two areas of particular concern were determined: (1) polypharmacy and (2) use of antipsychotics with a high to moderate risk of causing metabolic problems among consumers with existing cardiometabolic conditions. These two indicator sets are the basis of the PSYCKES initiative.



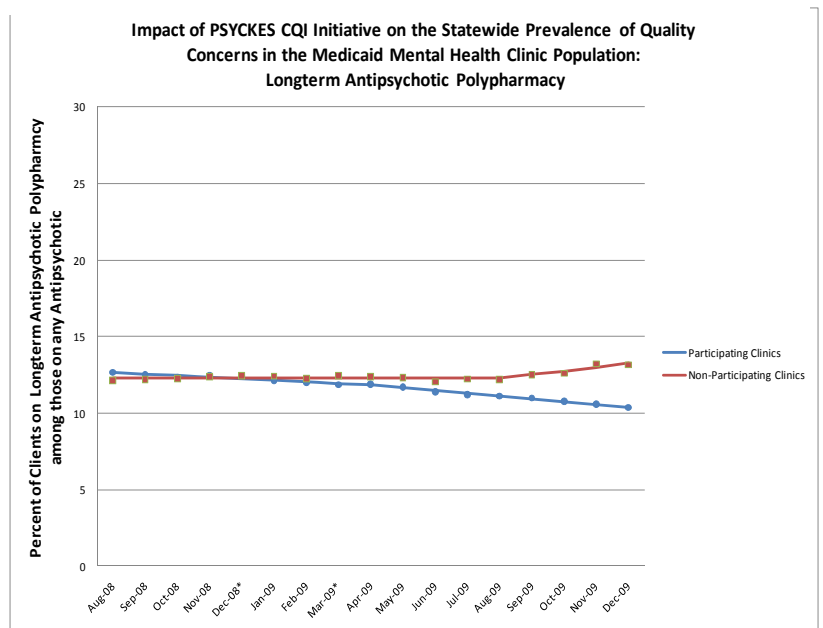
The Polypharmacy Indicator Set targets antidepressant, antipsychotic and psychotropic polypharmacy in adults and children. Polypharmacy, although sometimes clinically necessary, is overused, incurring increased risks of morbidity and mortality to Medicaid enrollees, as well as unnecessary pharmacy costs. The Cardiometabolic Indicator Set targets a drug-disease interaction where individuals with cardiometabolic conditions including diabetes and heart disease, are being given antipsychotics with a high or moderate risk for causing or exacerbating these medical conditions. The majority of antipsychotics with low risk for cardiometabolic conditions are low cost generic medications that are safer for this population. Selecting a lower risk agent not only decrease pharmacy costs, but also decreases the risk of further morbidity and mortality in this vulnerable population.

### E. Benefits of the Project

The OMH/DOH PSYCKES has resulted in significant benefits to the stakeholder groups, Medicaid patients, and New York State. Specifically:

- PSYCKES has identified questionable costs to the taxpayers of New York State. The Polypharmacy Indicator Set identifies approximately 41,000 Medicaid enrollees annually who are receiving questionable prescribing practices, and an estimated \$55,000,000 in questionable pharmacy costs per year. The Cardiometabolic Indicator Set identifies approximately 42,000 Medicaid enrollees annually who are receiving questionable prescribing practices, and an estimated \$33,000,000 in additional questionable pharmacy costs/year (See **Figure 2**).

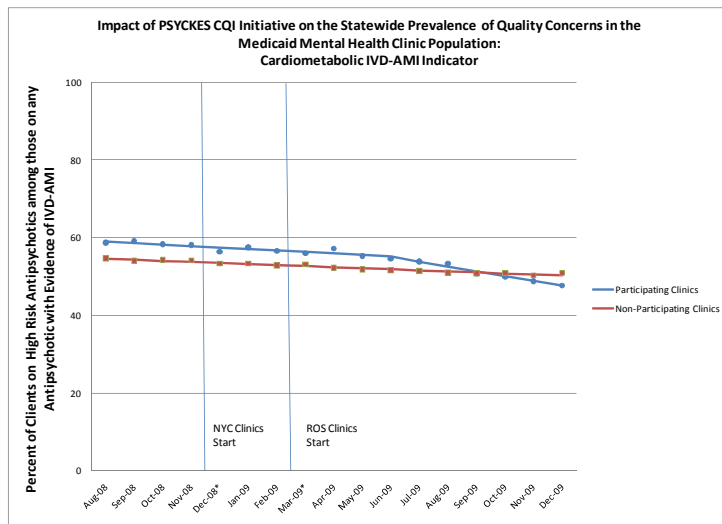
**Figure 2**



- Additional cost savings are achieved through reduced Medicaid expenditures as a result of to decreased rates of medical complications, morbidity and mortality.
- The benefit of PSYCKES has resulted in high participation rates by providers. As a result, a significant percentage of at risk consumers are served by this initiative. Specifically, there are a total of 338 clinics within 177 separate mental health agencies currently participating in the OMH/DOH PSYCKES initiative, representing approximately 92% of eligible clinics statewide. These clinics serve approximately 40% of consumers meeting criteria for polypharmacy and 30% of those meeting criteria for cardiometabolic risk.



- The direct benefits to Medicaid patients are demonstrated by the decreasing prevalence of quality concerns in the Medicaid population served by participating clinics, compared to non-participating clinics. Since the start of the project, the prevalence of the Polypharmacy Summary Indicator significantly decreased by 5.2% while the prevalence in non-participating clinics significantly increased 3.3%. Furthermore, the project has had its greatest impact in reducing longterm antipsychotic polypharmacy, which has the strongest scientific support and represents the greatest potential cost savings. As shown in the first chart, overall



prevalence of longterm antipsychotic polypharmacy decreased by 12.5% for participating clinics, but increased by 5.8% for non-participating clinics. For the Cardiometabolic Summary Indicator, prevalence decreased for both participating and non-participating clinics, but the trend was more pronounced for participating clinics –a 7.6% decrease - versus

non-participating clinics which had only a 2% decrease. As shown in **Figure 3**, the project has had even greater success in decreasing the use of high-to moderate risk antipsychotics among those with heart disease, who represent a more vulnerable population. For this indicator, prevalence decreased by 14.8% for participating clinics, and by 4.3% for non-participating clinics.

- PSYCKES benefits mental health providers by providing instant access to patient records and history so that treatment plans can be efficiently developed and effectively executed. In this way, the care provided to Medicaid patients is directly improved while, at the same time, the cost of providing this care is reduced.
- Mental Health Administrators have easy access to their performance relative to other providers and, as a result, are able to set realistic goals based on high quality information for improvements in operational efficiency and the quality of care.
- PSYCKES has laid the foundation for Academics to bridge the research-practice gap by providing an effective and efficient mechanism for dissemination of evidence-based quality indicators. Rather than relying on traditional means of communicating research results, this connection supports the ability of direct care staff to integrate research evidence into routine clinical practice, and has the potential to influence new models of integrating research, quality improvement and direct care.