What Can We Do To Address Unnecessary Readmissions: A Review of the Literature
Overview of Presentation

• Scope of the Problem
• Review of Literature
• GNYA/HANYS/OMH Quality Collaborative
• Summary of Findings
Behavioral Health
Inpatient Readmissions: Scope of the Problem
Reducing Readmissions: A National Quality Focus

• Hospital readmissions are common and costly
  • 19.6% of Medicare beneficiaries discharged were re-hospitalized within 30 days; cost to Medicare of unplanned readmissions estimated at $17.4 billion (Jencks, 2009)
  • Up to 79% of readmissions are likely to be preventable (van Walraven, 2011)
  • Medicaid enrollees aged 21-64 had 10.7% 30-day readmission rate (Healthcare Cost and Utilization Project (HCUP) Statistical Brief #89, 2010)
• While most attention nationally is on medical readmissions, behavioral health readmissions are an important component of the overall picture.
### 30-Day Readmission by Major Diagnostic Category (MDC) at Initial Hospital Stay for Medicaid Recipients Age 21-64, 2007

<table>
<thead>
<tr>
<th>MDC at 1st admission</th>
<th>Readmission rate</th>
<th>% of all non-obstetric readmissions</th>
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</thead>
<tbody>
<tr>
<td>Circulatory System</td>
<td>10.4%</td>
<td>15.0</td>
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<tr>
<td>Mental</td>
<td>11.8%</td>
<td>12.0</td>
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<tr>
<td>Respiratory System</td>
<td>11.4%</td>
<td>10.7</td>
</tr>
<tr>
<td>Digestive</td>
<td>10.3%</td>
<td>9.6</td>
</tr>
<tr>
<td>Alcohol/Substance Abuse</td>
<td>13.0%</td>
<td>8.4</td>
</tr>
</tbody>
</table>

Among 15 states, behavioral health discharges ranked among the top 5 diagnostic categories for 30-day readmissions.

Agency for Healthcare Research and Quality (AHRQ) Health Care Utilization Project Statistical Brief #89, 2010
### Potentially Preventable Readmissions (PPR), NYS Medicaid Program (2007)

<table>
<thead>
<tr>
<th>Recipient Health Condition</th>
<th>PPR Rate</th>
<th>Total PPR Cost</th>
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<tbody>
<tr>
<td>Mental Health</td>
<td>8.0</td>
<td>$202,842,118</td>
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<tr>
<td>Substance Abuse</td>
<td>10.3</td>
<td>$90,714,989</td>
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<tr>
<td>Mental Health and Substance Abuse</td>
<td>17.9</td>
<td>$370,272,653</td>
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<tr>
<td>All Others</td>
<td>4.8</td>
<td>$149,116,486</td>
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<tr>
<td>Total</td>
<td>9.4</td>
<td>$812,946,246</td>
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New York State (NYS) Dept. of Health, Division of Quality and Evaluation, Office of Health Insurance Programs, Statistical Brief #3
• Index stays for BH were most likely to be followed by readmission.
  • More than 21% of patients admitted with a BH diagnosis were readmitted within 30 days.
  • Diagnosis of schizophrenia had a 23% readmission rate.
  • Diagnosis of Bipolar had a 20% readmission rate.
  • Diagnosis of MDD/other psychosis had a 18% readmission rate.
  • Diagnosis of Opioid dependence/abuse had a 26% readmission rate.
National/multi-state initiatives include:

- Partnership for Patients Community-Based Care Transitions Program: national initiative to reduce unnecessary hospital readmissions by 20%

- The Better Outcomes for Older adults through Safe Transitions initiative (Project BOOST), Society of Hospital Medicine: 60 sites in 26 states

- The Institute for Healthcare Improvement State Action on Avoidable Rehospitalizations Initiative (IHI STAAR): 4-state collaborative in 148 hospitals

So what interventions have been studied about unnecessary readmissions?
Review of the Literature

1. Enhanced care and support during transitions
2. Improved patient education and self management support
3. Multidisciplinary team management
1a. Improved Discharge Processes: Transitions

- Project RED
- Care Transitions Interventions
- Transitions Navigator
- Transitional Care Model
• Project RED (Re-Engineered Discharge)
  • Assignment of a nurse discharge advocate
  • Works during hospitalization to do patient education, arrange post-acute follow up, medication reconciliation, prepare individualized d/c instruction booklet
  • Call from pharmacist 2-4 days post d/c
  • Reduced subsequent hospitalizations (ED/admission) within 30d 30%
Project RED: Key Activities

- Educate patient about diagnosis throughout the stay
- Organize post-discharge services, make all appointments
- Confirm medication plan, reconcile with guidelines
Project RED: Key Activities

• Give patient written discharge plan
• Assess patient’s understanding of the plan
• Review what to do if a problem arises
• Expedite transmission of discharge summary to outpatient providers
• Call two to three days post discharge to reinforce plan, problem-solve
Care Transition Interventions
- Care Transition Coach teaches patients with complex conditions
  - how to manage their medications
  - how to set up and prepare for follow-up appointment
  - how to respond if their illness worsens
  - how to ask questions about their illness
- Reduced 30 day readmission by 30%
• Created Transitions Navigator
  • Coordinated any needed outpatient care
  • Followed up with patient’s outpatient provider
  • Assured that the patient and family understood the diagnosis, treatment, and discharge plan
• 30-day readmission rate was 23% less than the hospital’s overall readmission rate (11.5% vs. 15%)
• Transitional Care Nurses work as nurse, case manager and patient advocate
• Provides comprehensive in-hospital planning and home follow-up for high risk adults
Successful Transitions

- Characteristics
  - Communication tools
  - Patient activation
  - Nurse-led coaching
  - One-hour education sessions
  - Telephone outreach
  - Comprehensive d/c planning
  - Home follow-up visits

(Chiu, 2007)
• Enhanced Communication between inpatient and outpatient services
  • User-friendly discharge form shared with patient and sent electronically to outpatient office nurse who called to review plan
  • Outpatient physician modified the plan as needed
• Use of Peer Advocates
• Inpatient psychiatric staff continue to work with a patient until working relationship with an outpatient provider was established
• Reduced readmission within 5 mo by 50%
A high % of rehospitalizations occur in the days to weeks following D/C (Jencks, 2009)

- Crucial time period is first 2-3 weeks (Anderson, 1999)
- 35% of patients had at least one rehospitalization within 2-14 weeks (Li, 2004)
- National Medicare study found 50% of patients D/C who were readmitted within 30 days had no OP visit (Jencks, 2009)
• Reviewed 18 studies covering 3000 patients
  • All studies included “comprehensive D/C planning” (med review and anticipatory guidance on D/C)
  • Other elements included: single home visit, frequent phone f/u or both
• These interventions reduced rehospitalization by 25% overall
1c. Patients with medical conditions

• Benefit from
  • Front-loaded home care visits
  • Remote monitoring
  • Enhanced patient education
  • Home visit by pharmacist
2a. Patient Education & Self-Management Support

• Educational interventions included
  • A variety of modalities and services
  • Provided across a variety of settings, but generally inpatient
  • Ranged from encouraging active self-management to symptom education

• Among individuals with schizophrenia, symptom education was associated with a reduction in 90-d readmission from 36% to 22% (Prince, 2006)
• **Evercare Intervention (Kane 2004)**
  - Medicare patients were segmented into 4 risk strata with different levels of intensity of NP F/U
  - Each NP had a case load of 100 within a geographic area
  - 2004 analysis found a significantly lower avg number of hospital admissions/100 enrollees
• Showed ICM was associated with statistically sig reductions in hospitalizations for patients with serious mental illness over a 1-year F/U
3. Multidisciplinary Team Management (MDT)

- Core elements
  - Wide range of clinical expertise in a variety of settings across the continuum of care

- Interventions include
  - Nurse-led programs
  - Specialty-based f/u
  - Medication review/ Medication adherence interventions
  - Patient education
  - Disease specific interventions
Evidence is mixed

• Problem: MDT management is a broad category
• When effective, interventions reduced hospitalization rates 20%-25%
• However, a number of studies showed no change in hospitalization rates
Most Effective Interventions

• Focus on transitions
• Enhance patient self-care
• Telephone contact
• Patient education
• Proactive review of care needs
GNYHA/ HANYS/ OMH Quality Collaborative: Reducing Behavioral Health Hospital Readmissions

Molly Finnerty, MD
Edith Kealey, MSW
Kate M. Sherman, LCSW
• Greater New York Hospital Association (GNYHA)

• Healthcare Association of New York State (HANYS)

• New York State Office of Mental Health (OMH)
The Learning Collaborative Model

- Hospitals work together toward a common goal
  - Conduct continuous quality improvement project
  - Identify and share successful strategies
  - Promotes rapid adoption of best practices

- Background
  - Institute for Healthcare Improvement (IHI) model
  - HANYS/ GNYHA have used in medical/surgical areas
  - First behavioral health collaborative last year
Hospital Activities: Form Quality Improvement Team

• Leadership / medical “champion” is key

• Project leads from relevant programs

• Interdisciplinary

• Data manager – crucial for monitoring / reporting
Hospital Activities: Continuous Quality Improvement (CQI)

- Select program(s) to participate
  - Flexible, but inpatient participation recommended
  - Inpatient, outpatient, emergency
  - Psychiatry, detoxification, substance abuse rehabilitation

- Select one or more strategies
  - Maximum flexibility
  - May be different for different programs, but coordinated effort is more manageable
  - Should support key indicator: inpatient readmissions
Hospitals Report
Monthly

• All hospitals report on inpatient admissions:
  • Number of inpatient admissions
  • Number of these known to be a readmission (based on their own data)

• Number of clients screened for high risk
  • Number of clients on census at high risk of readmission
  • Interventions delivered

• All Hospitals report on implementation milestones:
  • CQI team established
  • PSYCKES access for staff
  • Settings selected (e.g. inpatient units, ER, outpatient)
  • Strategies selected
  • Core activities implemented (screening, etc.)
CQI Project: Implement Core Activities

• Identifying clients' individual risk factors for readmission
  • Screening tool
  • PSYCKES
  • BHO data

• Addressing readmission risk factors

• Improving transitions in care
  • Inpatient/Emergency Department (ED): optimizing discharge planning process
    • Checklist in development
  • For outpatient: referrals, coordination of care
## Select Capacity Building Goals/Strategies

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<th>Goal 2: Improve engagement in outpatient care.</th>
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<td>Case Management, Assertive Community Treatment, Assisted Outpatient Treatment, Health Home</td>
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<td>Peer services</td>
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Factors Predicting Readmission
A Conceptual Model for Examining Readmissions

(Vest et al., 2010)
Research on BH Readmissions: Challenges

- No standard definition of time period: as long as two years
- Varying populations and treatment settings: few studies done for youth, comorbid mental health and substance use
- Varying methods: matched control, prospective cohort, retrospective review of administrative data
- Unclear how previous research applies in evolving healthcare environment
Key Factors: Previous Hospitalizations

- Multiple studies have found an association between previous inpatient admission and readmission
  - Prospective cohort study of 262 adult inpatients with schizophrenia found those readmitted within three months more likely to have had four or more previous hospitalizations (Olfson et al., 1999).
  - Retrospective study of 1,481 patients found number of previous admissions predicted readmission within six months (Thompson et al., 2003)
  - Prospective cohort study of 319 adult inpatients found number of previous psychiatric hospitalizations predicted readmission during eighteen-month follow-up (Klinkenberg & Calsyn, 1998).
Key Factors: Previous Hospitalizations

- Prospective cohort study of 233 high utilizing psychiatric inpatients found number of inpatient days in previous year predicted readmission within two years (Bowersox et al., 2012).
Key Factors: Medication Nonadherence

- Cohort study of 477 patients with schizophrenia found those readmitted to inpatient within six months had an average of 2.7 medication refills compared to 6.8 refills in those not rehospitalized. (Laan, 2010)

- Retrospective analysis of Medicaid claims for 4,325 outpatients with schizophrenia found any gap in antipsychotic medication was associated with increased risk of hospitalization, with gaps as small as one to ten days associated with an Odds Ratio of 1.98 and gaps greater than 30 days with an Odds Ratio of 3.96. (Weiden, 2004)
Key Factors: Engagement in OP Services

• Retrospective review of 3,113 inpatients found that those without an outpatient appointment after discharge were twice as likely to be re-hospitalized in the same year compared to those with at least one outpatient appointment (Nelson, 2000)

• Retrospective analysis of 22,054 people in three states found those who attended two or more appointments after inpatient detoxification were less likely to be readmitted within twelve months and had longer time until second inpatient detoxification (Mark, 2008)
Key Factors: Substance Use

- Prospective cohort study of 262 adult inpatients with schizophrenia found those readmitted within three months were significantly more likely to have comorbid substance use disorder. (Olfson et al., 1999)

- A study of 50 Medicaid inpatients at high risk for readmission identified substance use or related conditions as the most common reason for admission. (Raven et al., 2008)
Strategies to Reduce Behavioral Health Readmissions
Priority Goals for Readmissions Quality Collaborative

- Improve medication practices
- Improve engagement in outpatient care
- Improve delivery of integrated treatment for co-occurring psychiatric and substance use disorders
Goal: Improving Medication Practices
Strategies to Improve Medication Practices

• Increase use of depot medications
• Increase use of clozapine
• Increase medication-assisted alcohol treatment
• Facilitate medication fill upon discharge
• Implement clinical interventions to increase treatment adherence
• Systematic review of ten studies with 1,700 participants found that significantly fewer on depot antipsychotics relapsed relative to oral medication (Risk Ratio=0.70, 95% Confidence Interval (CI) = 0.57-0.87). (Leucht et al., 2011)

• Retrospective analysis of 2,588 patients with schizophrenia in Finland found the risk of rehospitalization among those receiving depot antipsychotics was one-third (Adjusted Hazard Ratio=0.36, 95%, CI=0.17-0.75) compared to patients on oral medication. (Tiihonen, 2012)
• Naturalistic observation study of 160 individuals discharged from United Kingdom (UK) inpatient service found time to subsequent admission within two years significantly longer for those discharged on clozapine compared to those registered to start on clozapine but discharged on another antipsychotic. (Nyakyoma & Morriss, 2010)

• Randomized open-label study of 227 patients discharged from state hospitals found those on clozapine less likely to be readmitted. (Essock, 1996)
Medication-Assisted Alcohol Treatment

• Secondary data analysis of claims for 20,752 patients found use of a Food and Drug Administration (FDA) approved medication for alcohol dependence is associated with reduced readmissions and cost. (Baser, 2011)

• Secondary analysis of claims data for 11,515 individuals with Alcohol Use Disorder (AUD) found those on Naltrexone XL (n=211) had lower nonpharmacy costs and utilization of acute services compared to acamprosate, disulfiram, oral natrexone and psychosocial treatment. (Bryson, 2011)
Retrospective analysis of secondary data for 861 individuals with first hospitalization for schizophrenia or schizoaffective disorder (DO) found that individuals without a fill of antipsychotics within one week post-discharge were 75% more likely to have a readmission within 28 days (Boden et al., 2011), suggesting opportunity for improvement by providing medications on discharge.
Goal: Improve Engagement in Outpatient Care
Strategies to Improve Engagement in OP Care

• Determine whether clients at risk are assigned to care management or other intensive services, connect those with existing services, and refer those who are not

• Implement peer services that contribute to reducing readmissions

• Implement clinical interventions to increase treatment adherence
Cochrane Review (1998) found that ACT clients were less likely to be admitted to the hospital than those receiving standard community care (Odds Ratio=0.59, 99%CI 0.41-0.85).

In a prospective trial with 144 people, clients receiving ACT team care had a significantly reduced rate of rehospitalizations (Salkever, 1999)
• Cochrane Review (2010) concludes intensive case management reduces hospitalizations and increases engagement in outpatient care compared to standard care and non-intensive case management, particularly for individuals with high levels of hospitalization.

• Retrospective secondary data analysis of 164 clients found that clients assigned to Intensive Case Management (ICM) had fewer periods of hospitalization (longer community tenure) than those assigned to Case Management (CM). (Kuno et al., 1999)
Consumers who received court orders for AOT appeared to experience a number of improved outcomes: reduced hospitalization and length of stay, increased receipt of psychotropic medication and intensive case management services, and greater engagement in outpatient services. (Swartz, 2010)

Increased medication adherence and reduced readmissions continued after the end of the AOT order if it was for at least seven months. (Van Dorn, 2010)
• In a randomized trial of peer mentor versus usual care for individuals currently hospitalized with major mental illness and three or more hospitalizations in previous eighteen months, those randomized to peer mentorship (n=38) had fewer rehospitalizations and fewer hospital days than those in usual care (n=36) at 9-month follow-up post-discharge. (Sledge, 2011)

• Longitudinal comparison group study of people with co-occurring Substance Use Disorder (SUD) and Mental Illness (MI) found those who participated in a peer support program (n=106) had lower dropout rates and readmissions than the treatment as usual group (n=378) (Min, 2007)
Other Clinical Interventions

• Randomized trial of 121 psychiatric inpatients showed that adding a one hour motivational interview prior to discharge was significantly associated with attendance at first outpatient appointment compared to Treatment as Usual (Swanson, 1999)

• Cognitive behavioral group therapy was introduced on an inpatient unit, with subsequent significant reductions in readmissions from 38% to 24% for patients with schizophrenia and bipolar disorder (Veltro, 2008)
Goal: Improve Delivery of Integrated Treatment for Psychiatric and Substance Use Disorders
Why Integrated DD Treatment (IDDT)?

- Twenty-six studies show integrated treatment is more effective than traditional separate treatment
  
  Drake et al (2004), Psychiatric Rehabilitation Journal

- Conclusions from these 26 controlled studies:
  
  - Despite enormous variance in designs, interventions, and outcome measures, several consistent themes appear across the studies
  
  - These themes emerge as core critical components
Core Principles of IDDT

1. Integration of treatment
2. Assertive engagement
3. Comprehensiveness of services
4. Motivation-based treatment
5. Reduction of negative consequences
6. Time unlimited services
7. Multiple psychotherapeutic modalities

*On-line training available via Office of Mental Health Focus on Integrated Treatment (FIT) Modules.*
IDDT Associated with Improved Outcomes in Several Areas

- Reduced institutionalization
- Reduced symptoms, suicide
- Reduced violence, victimization, legal problems
- Better physical health
- Improved function, work
- Improved relationships and family

(Drake et al, 1998)
• Randomized control trial of 129 clients with severe psychotic or affective disorders and drug dependence found those enrolled in a six month intervention including motivational interviewing and social skills training had lower rates of rehospitalization vs. manualized control. (Bellack, 2006)

• Retrospective pilot study of 44 clients receiving 24 weeks of integrated dual-diagnosis treatment found a 60% reduction in inpatient days in the year after treatment compared to the previous year. People with schizophrenia had a 74% reduction in hospital days. (Granholm, 2003)
# Strategies by Settings

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| Goal 2: Improve engagement in outpatient care. | | | |
|-----------------------------------------------| | | |
| CM, ACT, AOT and/or Health Home               | √ | √ | √ |
| Peer services                                 | | √ | √ |
| Clinical interventions to improve adherence   | √ | √ | √ |

| Goal 3: Improve delivery of integrated treatment for psychiatric and substance use disorders. | | | |
|------------------------------------------------------------------------------------------| | | |
| “Focus on Integrated Treatment”                                                          | √ | √ | √ |
• **Case finding**: Implement admission protocol to identify clients at risk of readmission, using Screening Tool and/or PSYCKES data.

• **Identify and address risk factors**: Assess for risk factors and implement policy that identified risks for readmission are addressed explicitly on treatment plan and discharge plan.

• **Optimize discharge process**: Implement a protocol or checklist to ensure best practices in discharge planning, including procedures for bridging time between discharge and first outpatient session. Coordinate discharge planning efforts with the Behavioral Health Organizations (BHOs).
Summary of 6 Interventions found at 4 Hospitals

• Invest in quality first: care for patients correctly and readmission rates fall
• Use HIT to improve quality and integrate care across settings
• Begin care management and D/C planning early, target high-risk patients and ensure frequent communication across the care team
• Educate patients and their families in managing conditions. Teach at a level appropriate to patients and ensure they understand and can teach back key instructions

• Maintain a “lifeline” with high-risk patients after D/C through telephone calls, other practices
• Align hospitals’ efforts with those of community providers to provide a continuum of care. While this may be best achieved in integrated systems, such cooperation can be facilitated through collaborative relationships among hospital and community providers.

(The Commonwealth Fund, 2011)
Summary From Learning Collaborative

• Improve medication practices

• Improve engagement in outpatient care

• Improve delivery of integrated treatment for co-occurring psychiatric and substance use disorders