Psychiatric Readmission in Youth: A Review of the Literature

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Methodology

- Literature search on child and adolescent psychiatric readmissions—388 papers
- Reviewed 76 for prospective and retrospective studies of factors associated with re-admission
- Found 13 studies appropriate for inclusion
  - 9 Retrospective studies, 4 Prospective
  - 1 study risk-adjusted
Retrospective—Fort Bragg Demo

- Foster; Do Aftercare Services Reduce Inpatient Psychiatric Readmissions
  - 204 patients, enrolled 1995, risk-adjusted
  - Fort Bragg Demo with intermediate and wraparound services versus comparison Outpatient Department services
  - Demo increased access to aftercare—91% vs. 38% within 60 days
  - Children who received aftercare are only slightly less likely to be readmitted
  - Parental burden increases readmission
Carlisle et al; Aftercare, Emergency Department Visits, and Readmission in Adolescents

- 4472 patients (first hospitalization), enrolled 2002-2004
- 13% readmitted or psych Emergency Department (ED) visit within the first 30 days
- Matched cases with and without aftercare
  - 29.7% adolescents with aftercare had psych ED visit or readmission within 1 year (versus 25.3% adolescents without aftercare)
  - Adolescents in aftercare had more readmissions within 1 year (18.8% vs. 14.8%) and had shorter mean time to first readmission
  - Aftercare increases risk of readmission by 38%
Fontanella; The Influence of Clinical, Treatment, and Healthcare System Characteristics on Psychiatric Readmission of Adolescents

- 522 patients, enrolled 1997-1998
- 37.9% readmission within one year, more than half by 90 days

Factors associated with readmission

- Younger age, symptom severity, intellectual disability, violent behavior, abuse, greater levels of family risk, prior hospitalization, medication non-compliance, provider variability, day treatment/therapeutic foster home
- Medium to high risk families—children 1.6 to 2.1 more likely to be readmitted
- Longer Length of Stay (LOS) associated with readmission
Bobier; Factors Associated with readmission to adolescent psychiatric care

- 71 patients, enrolled 2001-2003
- 47.9% readmission rate
- Compared readmits to non-readmits

Factors associated with readmission
- Medication non-adherence
- History of child sexual abuse
- Trend towards younger age
Gearing; Developing a Risk-Model of Time to First-Relapse for Children and Adolescents with a Psychotic Disorder

- 87 mood/psychotic patients under 18, enrolled 1999-2003
- 57% relapse requiring re-admission
- 77% med adherence
- Adherent children 1/3 risk of relapse with readmission
- 25% risk of relapse within 7 months, 33% risk of relapse within the first year, 44% risk by second year, and 60% overall

**Predictive factors**: medication non-adherence, female gender (2x), receiving clinical treatment, and decline in social support before first hospitalization (associated with 40% greater risk)
Pottick; Factors Associated with Inpatient and Outpatient Treatment for Children and Adolescents with Serious Mental Illness

- 2,160 patients, enrolled 1986
- Diagnosis associated with inpatient admission—Internalizing disorders more likely to receive inpatient treatment (44% vs 16%)
- Hospitalized youth received more treatment (34% prior hospitalization, 4.65 times odds ratio(OR); 48% prior mental health services, 2.5 odds ratio)
- Odds ratio of hospitalization with private insurance 11 times and public insurance 4 times compared to no resources.
Pavkov; State Hospital Reentry Among Youth with Serious Emotional Disturbance: A Longitudinal Study

- 3,969 patients, enrolled 1987-1992
- Youths with access to local support services less likely to be readmitted
- Factors associated with readmission
  - Younger (every year increase of age decreased likelihood of readmission by over 4%)
  - Longer prior hospitalizations
  - Psychosis
  - Lower median income
Yampolskaya; Predictors for Readmission into Children’s Inpatient Mental Health Treatment

1,432 patients, enrolled 2004-2008
19% readmitted during 4 years, 10% readmitted within 1 year, 5% multiple readmissions

Factors associated with readmission

- Maltreatment history, greater severity (Odds Ratio (OR)=1.07)
- Shorter length of inpatient stay (OR=0.99)
- Aftercare mental health services—type of services and time to initiation; longer delay=greater likelihood of readmission
- Diagnostic comorbidity
Fontanella; Psychotropic Medication Changes, Polypharmacy, and the Risk of Early Readmission in Suicidal Adolescent Inpatients

- 318 patients, Medicaid-enrolled, 1998
- At least one medication change in 78% of patients
  - Addition of antidepressant, mood stabilizer, anti-psychotic
- Addition of antidepressant associated with 85% lower risk
- Polypharmacy (23%)—3 or more medications from different drug classes associated with 2.6x higher risk
Arnold et al; Rates and Predictors of Rehospitalization Among Formerly Hospitalized Adolescents

- 180 patients, enrolled 1991-1995

Factors associated with readmission

- Younger, affective disorders
- Suicidality not predictive of readmission
- Readmission rates—6 months: 19%; 24 months: 32.7%, 10 years: 48.5%.
Prospective Studies

- Blader; Symptom, Family, and Service Predictors of Children's Psychiatric Rehospitalization Within One Year of Discharge
  - 109 patients, enrolled 14 month period before 2004
  - Readmission rate: 33.9%
  - 81% readmitted within first 90 days
  - **Independent contribution to increased risk**
    - Severity of conduct problems
    - Low parental involvement
    - Corporeal punishment
Prospective Studies

- Brinkmeyer; Family Engagement, Consumer Satisfaction and Treatment Outcome in the New Era of Child and Adolescent In-Patient Psychiatric Care
  - 45 patients, enrolled before 2004
  - 32% readmission rate, 9 month follow-up
  - Inpatient evaluation only
  - **Readmission associated with**
    - Poorer engagement in inpatient treatment
    - Lower ratings of parent satisfaction
James; Post-discharge services and psychiatric rehospitalization among children and youth

- 200 patients, enrolled 2002-2005
- 43% readmitted, 28% received no post-discharge care
- 3/4 rehospitalized within first year
- Highest risk within first 30 days, 30-day readmission rate 9%
- Over 2.5 years, a 76% lower readmission rate was associated with longer course of post-discharge services including non-intensive Mental Health services and/or non-Mental Health services
- No supportive services or intensive-only increased risk
- **Factors associated with increased readmission rate**: younger age at first admission, longer first hospitalization, psychosocial risk factors, no services post-discharge or high-intensity services only
- **Factors unrelated to readmission**: discharge diagnosis, Global Assessment of Functioning score, current alcohol use, family involvement
Limitations

- Complexity of factors affecting re-admission and referral to and engagement in aftercare services
  - Individual patient characteristics
  - Family characteristics
  - Service system characteristics
- No prospective risk adjusted studies
- Most studies conducted in the 90’s
Factors Associated with Re-Admission

- Severity of Illness
  - Affective Illness
  - Oppositional Defiant Disorder
  - Psychosis
- Non-adherence to medication
- Family risk
- Prior Hospitalization
- Younger age at first hospitalization
Inconsistent Factors

- Suicidality/Self-injurious behavior
- Abuse/Neglect
- Length of Stay
- Aftercare services