Factors associated with psychiatric hospital length of stay among children and adolescents: A systemic perspective

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A mismanaged healthcare care system led to the following by the mid-90s in Illinois:

- 5-10% of high-end emotionally disturbed youth were served out of state
- Lengths of stay in the hospital lasting several months to a year were common
- Children sent across the state to receive care with no family or case manager contact

Indicators of a Healthy System of Care

- Level of care “appropriate” and “rational”
- Amount (dose) of care “appropriate” and “rational”
  - Length of Stay (LOS)
- Appropriate type of care (quality)
- Effective (outcomes)

Monitoring inpatient services

- Screening, Assessment, Supportive Services (SASS)
  - Wards referred when thought to be a risk to themselves or others
  - SASS interviews tied to hospital reimbursement
  - Referrals made by caregiver or caseworker

Range of SASS Services

- Initial screening
- Crisis management: Must make contact within 4 hours of call
- Post-crisis services:
  - Short-term family therapy
  - Short-term individual therapy
- Hospital monitoring
- Discharge planning

Screening, Assessment, Supportive Services

- 30 independently operated agencies covering the state.
- Mobile: SASS workers drive to site of psychiatric crisis
- 85% of workers have Master’s degrees in Social Work, Counseling, or Clinical Psychology
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**Research Question**
- Is use of length of stay "rational"?
  - Primarily influenced by clinical variables
  - Less influenced by non-clinical variables

**Prior research on LOS**
- Clinical*
  - Suicide
  - Danger to Others
  - Depression
  - Behavioral Problems
  - Substance Abuse
  - Chronicity (prior hospitalizations)

- Non-clinical*
  - Caregiver burden
  - Lack of other treatment options (e.g., community)
  - Race/Ethnicity
  - Poorer quality of services by other providers (e.g., residential)
  - The hospital serving the youth

There is a need for more research on the role of the community and the hospital in LOS research.

Lyons, Uziel Miller; Lyons et al., 1999; Lyons, Shreedhar, Bryant et al. 2006

**Sample**
- n = 473 Medicaid-insured youth (2005-2006)
  - Department of Children and Family Services (DCFS)
  - Department of Human Services (DHS)

- Demographics:
  - 50% Female
  - 55% African-American
  - 31% Caucasian
  - 10% Hispanic/Latino(a)
  - Mean Age: 14.3 years (SD = 3.2)

**Predictors of Length of Stay**
- Children’s Assessment of Needs and Strengths (CANS)
- DSM-IV Diagnoses:
  - 30% Mood Disorder
  - 20% Impulse Control Disorder
  - 17% PTSD
  - 17% Anxiety Disorders
  - 8% Psychotic Disorders

**Measure of Psychiatric Severity:** Children’s Assessment of Needs and Strengths (CANS)

- Clinical and environmental factors developed from focus groups and indications from the literature (Lyons, 1995)
- Sevety ratings made on 0-3 scale

- 25 dimensions across five factors:
  - Presenting Problems
  - Risk factors
  - Functioning
  - Comorbid factors
  - Placement/system factors

**Outcome Measurement**
- The Child and Adolescent Needs and Strengths (CANS; Lyons, 1997)
- 0 to 3 scale

- [Image of Outcome Measurement]
  - Danger to Self
  - Clinical and environmental factors related to adolescent development
Reliability: CSPI Intraclass Coefficients
- Northwestern Research Team: .89
- SASS workers directly after training: .78
- SASS workers in the field: 1997: .70
- SASS workers in the field: 1998: .72
- SASS workers in the field: 1999: .70
- SASS workers in the field: 2000: .73

Statistical Strategy
- Hierarchical Linear Modeling (HLM)
  - Accounts for dependencies in the data (youth nested within hospital)
  - Estimates how much variability in dependent variable (LOS) is attributed to the various levels (2).
  - Allows researcher to study predictors at both levels
    - Child (e.g., CANS, Census)
    - Hospital (e.g., organizational variables)

Results
- Percent variance attributable to child: 85%
- Percent variance attributable to hospital: 15%

Results: Variation in LOS across Hospitals

Summary and Future Directions
- Youth account for majority of variability in LOS, but hospital still accounts for 15%
- Census tract data do not predict LOS
- DCFS status predicts at level 1 and level 2
- Caregiver health and supervision problems predict shorter LOS
References