Predictors of Emergency Room Utilization and Hospitalization Among Adults with Intellectual and Developmental Disabilities (IDD): Key Findings

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Manhattan DD Council
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Background

• NYS utilized $54 billion Medicaid dollars in 2012 – more than any other state in the nation.

• NYS expenditures are twice the national average when examined on a per-enrollee basis.

• NYS Medicaid contribution more than doubled in ten years
  • 2001: $9.3 billion
  • 2011: $20.8 billion
ER and Hospital Utilization

- From 2010 to 2011, hospital expenditures increased by 4.3% to $850 billion of U.S. National Health Expenditures.

- NYS
  - Ranks 50th in avoidable hospital use
  - 60% of MCD ER visits and 16% of hospital admissions were potentially avoidable
  - Spent $1.2 billion in avoidable hospital use (in 2011)

- NYC
  - $830 million (NYC) in MCD cost due to avoidable acute care utilization versus $344 million (NYS)
Medicaid Enrollees and Expenditures, 2009

Enrollees
Total = 49.1 million

Expenditures
Total = $338.1 billion

- Children: 49% (20% of Expenditures)
- Adults: 23% (14% of Expenditures)
- Disabled: 18% (44% of Expenditures)
- Elderly: 10% (22% of Expenditures)
Contributors to Rising Cost

- Increasing lifespan
  - People with IDD over 60 will double between 2000 and 2030 (projected 1.2 million)
- Increasing prevalence of specific IDDs
  - 1 in 68 with Autism Spectrum Disorders (ASD)
- High number of chronic health issues associated with specific DDs
Contributors to Rising Cost

- Transition from institutional to community-based living
  - *Olmstead vs. L.C. Olmstead*
- Increased utilization of community-based long-term services and supports (LTSS)
  - 19.3% increase in LTSS and high waitlists
- Fee-for-service payment structure
  - Reimbursed for all services provided
Literature Review

- Higher ER utilization rates (30%) for adults with IDD in upstate NY compared to the general population (20%) (Janicki et al., 2002)

- Walsh et al. (1997) found hospital admissions rose for people with IDD by 56% and expenditures by 206%

- Birenbaum et al. (1990) found people with IDD had hospitalization rates twice the national average and an annual per person cost of $1000-$4000 for children with IDD versus $414 for children in the general population
Data Source

- **Residential Health Care Survey**
  - Conducted by a large non-profit provider in NYC
  - 22-item survey with multiple sub-questions
  - 38 Residential RNs reviewed medical charts of individuals with IDD (n=597)
  - Assessed the healthcare needs and utilization of people receiving residential supports

- **Inclusion criteria:**
  - Reside in a supported living arrangement for the entire 2011-2012 calendar year
  - 21 years and above
Identify predictors of emergency room (ER) and hospital utilization among adults with IDD

Knowledge of these predictors allows providers to:
1) Target intervention towards risk factors
2) Tailor managed care programs

Decrease utilization costs among people with IDD
Present Study

Population Characteristics

Predisposing Factors
- Age
- Sex
- Type of DD
- Level of ID
- Chronic Health Conditions
- Mental Health Dx
- Polypharmacy

Health Behavior
- Seek primary Care
- Utilize the ER/hospital

Environmental Characteristics
- Affordable Care Act
- Medicaid Redesign
- Managed Care Transition

Community Enabling Factors
- Geographic Region
- Type of Living Arrangement
### Predisposing Demographics

**Of 597 individuals:**

- Male (58%)
- Middle-aged to older adults (49%); mean = 49.0
- Mild to moderate intellectual disability (69%)
- Two or more developmental disabilities (30%)
  - Neurological disorder (e.g., epilepsy) (35%)
  - ASD (20%)
  - Cerebral palsy (10%)
  - Down syndrome (DS) (8%)
- Two or more health conditions (69%); mean = 2.6
- One or more mental health diagnoses (69%)
- Polypharmacy (5 or more meds) (80%)
Environmental Demographics

- **Residential Setting**
  - 63% in IRAs
  - 32% in ICFs
  - 5% in supported apartments

- **Region**
  - 19% lived in Queens and Westchester
  - 18% in Brooklyn and Long Island
  - 15% in Manhattan
  - 10% in the Bronx
Predisposing factors across Setting/Region

- People in more restrictive settings (ICFs) had:
  - Higher rates of Neurological disorder, ASD and CP
  - Higher rates of severe and profound ID
  - Higher prevalence of mental illness
  - Increased rates of polypharmacy

- People in **Westchester** had higher rates of Neurological disorder, CP and DS, and a higher number of chronic health conditions.

- People in **Long Island** had higher rates of ASD and mental illness.
Outpatient Services Utilization

- 100% received primary care
- 99% dental services
- 99% specialty care
- 74% blood work
- 60% rehabilitation services
Acute Services Utilization

- High ER utilization rate (38%) among study sample when compared to similar sample in Upstate NY (30%) and the general population (20%)

- Hospitalization occurred less frequently (15%) than Upstate NY sample (16%) and the general population (27%)
## Age Group Differences

<table>
<thead>
<tr>
<th></th>
<th>Age 21-50 (n=322)</th>
<th>Age 51-83 (n=275)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnosed with...</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASD</td>
<td>94 (29%)</td>
<td>23 (8%)</td>
</tr>
<tr>
<td>Dementia</td>
<td>3 (1%)</td>
<td>20 (7%)</td>
</tr>
<tr>
<td>Alzheimer’s</td>
<td>1 (&lt;1%)</td>
<td>14 (5%)</td>
</tr>
<tr>
<td><strong>For medical/physical reasons...</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seen in an ER</td>
<td>102 (32%)</td>
<td>127 (46%)</td>
</tr>
<tr>
<td>4 or more ER visits</td>
<td>9 (3%)</td>
<td>28 (10%)</td>
</tr>
<tr>
<td>Hospitalized</td>
<td>29 (9%)</td>
<td>62 (23%)</td>
</tr>
<tr>
<td><strong>Ambulatory without assistance</strong></td>
<td>295 (92%)</td>
<td>206 (75%)</td>
</tr>
<tr>
<td>Experienced a fall</td>
<td>66 (20%)</td>
<td>107 (39%)</td>
</tr>
</tbody>
</table>
What factors independently predicted emergency room (ER) and hospital utilization for medical reasons?
# Medical ER visits (n=229)

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronx</td>
<td>1.20</td>
<td>1.90(^\wedge)</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>.51(^*)</td>
<td>.58(^\wedge)</td>
</tr>
<tr>
<td>Supported Living</td>
<td>2.59(^*)</td>
<td>2.85(^*)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>2.25(^*)</td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td></td>
<td>2.25(^*)</td>
</tr>
<tr>
<td>Neurological Disorder</td>
<td></td>
<td>1.55(^*)</td>
</tr>
<tr>
<td>Profound ID</td>
<td></td>
<td>2.01(^\wedge)</td>
</tr>
<tr>
<td># of chronic conditions</td>
<td></td>
<td>1.13(^*)</td>
</tr>
<tr>
<td>Mental health diagnosis</td>
<td></td>
<td>1.75(^**)</td>
</tr>
<tr>
<td>Polypharmacy</td>
<td></td>
<td>2.20(^**)</td>
</tr>
</tbody>
</table>

\(^\wedge p<.10; \^* p<.05; \^** p<.01; \^*** p<.001\)

(Model controlled for all other regions, institutional setting, ASD and DS)
Medical Hospitalization (n=91)

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Setting</td>
<td>1.64*</td>
<td>1.44</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>1.04***</td>
</tr>
<tr>
<td># of chronic conditions</td>
<td></td>
<td>1.19*</td>
</tr>
</tbody>
</table>

^p<.10; *p<.05; **p<.01; ***p<.001
(Model controlled for region, supported living, sex, type of DD, level of ID, mental health diagnosis and polypharmacy)
What factors independently predicted emergency room (ER) and hospital utilization for behavioral/psychiatric reasons?
Behavioral/Psychiatric ER Visits (n=44) and Hospital Admissions (n=18)

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westchester</td>
<td>.26*</td>
<td>.33^</td>
</tr>
<tr>
<td>Age</td>
<td>.97^</td>
<td></td>
</tr>
<tr>
<td>Mental health diagnosis</td>
<td>18.75**</td>
<td></td>
</tr>
</tbody>
</table>

^p<.10; *p<.05; **p<.01; ***p<.001
(Model controlled for other regions, living arrangement, sex, type of DD, level of ID, number of chronic health conditions and polypharmacy)

- **Behavioral/psychiatric hospitalization**
  - Unable to determine predictors due to small cell sizes
## Combined Regressions

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ER visits combined</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronx</td>
<td>1.26</td>
<td>1.86(^\wedge)</td>
</tr>
<tr>
<td>Supported Living</td>
<td>2.40(^*)</td>
<td>2.62(^*)</td>
</tr>
<tr>
<td>Age</td>
<td>1.01(^\wedge)</td>
<td></td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td>1.98(^*)</td>
<td></td>
</tr>
<tr>
<td>Chronic conditions</td>
<td>1.12(^\wedge)</td>
<td></td>
</tr>
<tr>
<td>Mental health diagnosis</td>
<td></td>
<td>2.06(^***)</td>
</tr>
<tr>
<td>Polypharmacy</td>
<td></td>
<td>1.93(^*)</td>
</tr>
<tr>
<td><strong>Hospitalizations combined</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>1.03(^**)</td>
</tr>
<tr>
<td>Chronic Conditions</td>
<td></td>
<td>1.17(^*)</td>
</tr>
<tr>
<td>Mental health diagnosis</td>
<td></td>
<td>1.59(^\wedge)</td>
</tr>
</tbody>
</table>

\(^\wedge p<.10; ^* p<.05; ^** p<.01; ^*** p<.001\)
## Results Snapshot

<table>
<thead>
<tr>
<th><strong>ER utilization predictors:</strong></th>
<th><strong>Hospitalization predictors:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supported Living</td>
<td>• Mental health diagnosis</td>
</tr>
<tr>
<td>• Age</td>
<td>• Polypharmacy</td>
</tr>
<tr>
<td>• Cerebral Palsy</td>
<td>• (Bronx and chronic health issues)</td>
</tr>
</tbody>
</table>

- **Hospitalization predictors:**
  - Age
  - Chronic conditions
  - (Mental health diagnosis)
Remaining Questions

- Do people living with family or independently have even higher utilization rates?
- What factors truly led to ER/hospital utilization? Were utilization reasons recorded accurately?
- Despite regular PCP contact, there were high rates of ER utilization
  - How effective are primary care/specialty care services for this population?
Policy-level Interventions

- NYS Global Spending Cap
- Medicaid Managed Care
- Patient-centered Medical Home (PCMH)
- Care coordination
- Accountable Care Organizations (ACOs)
- Delivery System Reform Incentive Payment (DSRIP) Program
### Programmatic/Training Interventions

- Screening/early detection at an earlier age (than general pop.)
- Tailored chronic disease management programs
- Peer support models
- Improved access to mental health (MH) services
- Specialized training for MH professionals
- Respite services (START model)
- Crisis prevention, round-the-clock “on-call” MH support systems
- Regular medication reviews
- Prescription Monitoring Programs

- Teach individuals medication self-management
- Electronic Health Records (EHRs) and Regional Health Information Exchanges (RHIOs)
- Extended clinic hours, increase use of urgent care
- Telehealth and telepsychiatry
- Specialized training for hospital staff (WIHD - LEND program)
- Coordinated transition planning
- Regional assessment of healthcare access for people with IDD
QUESTIONS?
References


References


References


References

New York State DOH. (2011b). Cost, access and quality: How can we transform care delivery and create affordable, quality healthcare? [PowerPoint Slides].


