BEHAVIORAL HEALTH CONDITIONS IN AVOIDABLE HOSPITAL USE AND COST

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Presentation by
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Acknowledgements

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Motivating issues

- Our previous research identified substantial cost saving opportunities from reducing high hospital use and preventable hospitalizations.
- Such avoidable hospitalizations may arise from barriers to ambulatory care, inadequate care coordination and presence of behavioral health conditions.
  - Interaction between mental and physical health needs (IOM 2006).
- Effective management of behavioral health conditions and integration of behavioral and physical healthcare may be critical to reducing avoidable hospitalizations and costs.
- Several existing care models are based on such integration e.g., SBIRT, SAMHSA, VA Services, CDC’s NCCDPHP.
  - Behavioral health screening by primary care provider.
  - Co-location of services and referral.
Study questions & data

• To what extent are behavioral health (BH) conditions associated with:
  – Preventable hospitalizations and costs?
  – Inpatient and ED high use and costs?
Data and measures

- Data from NJ Discharge Data Collection System and Charity Care Claims, 2008-2011
- Diagnostic information drawn from billing records only
- Measures
  - Preventable hospitalizations (AHRQ: Prevention Quality Indicators)
  - Highest 5 percent of hospital users characterized as ‘high users’
  - Mental Health (MH) and Substance Abuse (SA) (AHRQ: Clinical Classification Software)
  - Severely Mentally Ill (SMI) - Extreme Functional Impairment (Coffey et al. 2011; Kessler et al. 2005)
- Costs calculated by applying cost-to-charge ratios on charge amounts
- Focus on 13 low income regions in NJ
## 13 Low-Income NJ Areas

<table>
<thead>
<tr>
<th>Area</th>
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<tbody>
<tr>
<td>Camden</td>
</tr>
<tr>
<td>Greater Newark*</td>
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<tr>
<td>Trenton**</td>
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<tr>
<td>Asbury Park-Neptune</td>
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<tr>
<td>Atlantic City-Pleasantville</td>
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<td>Elizabeth-Linden</td>
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<td>Jersey City-Bayonne</td>
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<td>New Brunswick-Franklin</td>
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<td>Paterson-Passaic-Clifton</td>
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<tr>
<td>Perth Amboy-Hopelawn</td>
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<td>Plainfield, North Plainfield</td>
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<tr>
<td>Union City-W. NY- Guttenberg-N. Bergen</td>
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<tr>
<td>Vineland-Millville</td>
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</tbody>
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*Newark zip codes (07102, 07103, 07104, 07105, 07106, 07107, 07108, 07112, & 07114)
*East Orange zip codes (07017, 07018)
*Irvington zip code (07111)
*Orange zip code (07050)

* *Trenton zip codes (08608, 08609, 08611, 08618, 08629, & 08638)

Source: Kathe Newman, Rutgers University
Behavioral Health Problems by Preventable Inpatient (IP) Hospitalizations
13 Low-Income NJ Areas, 2008-2011

Preventable IP Stays
- Mental Health: 21.9%
- Substance Use: 13.8%
- Both: 7%
- Severe Mental Illness: 4.4%

Non-preventable IP Stays
- Mental Health: 16.7%
- Substance Use: 12.4%
- Both: 5.9%
- Severe Mental Illness: 10%
Medicaid Beneficiary Behavioral Health Problems by Preventable IP Hospitalization Status
13 Low-Income NJ Areas, 2008-2011

Preventable IP stays
- Mental Health: 16.7%
- Substance Use: 22.3%
- Both: 8.9%
- Severe Mental Illness: 48%

Non-Preventable IP stays
- Mental Health: 14%
- Substance Use: 11.6%
- Both: 12.9%
- Severe Mental Illness: 17%
Behavioral Health Problems by Inpatient High User Status
13 Low-Income NJ Areas, 2008-2011
**Medicaid Beneficiary Behavioral Health Problems by Inpatient High User Status**
13 Low-Income NJ Areas, 2008-2011

**High Users**
- Mental Health: 81%
- Substance Use: 44%
- Both: 14.6%
- Severe Mental Illness: 22.6%

**Non-High Users**
- Mental Health: 6.8%
- Substance Use: 8.4%
- Both: 10.0%
- Severe Mental Illness: 10%
Behavioral Health Problems by ED High User Status
13 Low-Income NJ Areas, 2008-2011

High Users
- Mental Health: 15.3%
- Substance Use: 22.3%
- Both: 18.4%
- Severe Mental Illness: 56%

Non-High Users
- Mental Health: 6.1%
- Substance Use: 10.1%
- Both: 1.9%
- Severe Mental Illness: 2%
Behavioral Health Problems among Inpatient High Users by Payer
13 New Jersey ACO Regions

- Dual Eligible: Users 79.9%, Cost 38.0%
- Other Medicare: Users 72.0%, Cost 32.2%
- Medicaid: Users 80.8%, Cost 46.5%
- Private: Users 67.9%, Cost 32.8%
- Charity Care: Users 82.2%, Cost 51.9%
- Self Pay: Users 81.9%, Cost 51.8%
- All Payer: Users 74.9%, Cost 37.7%
Inpatient Hospitalization Costs
Annualized Estimates
Hospitalization Costs Associated with Behavioral Health Conditions
13 Low-Income NJ Areas, 2008-2011
Hospitalization Costs Associated with Behavioral Health Conditions
13 Low-Income NJ Areas, 2008-2011

Avoidable Hospitalizations
- 47% of High Use (331)]
- 13% of All Hospitalizations (123)
- 37.0% of All Hospitalizations (331)

Millions of dollars

- 2,527 Total Hospitalizations
- 880 Hospitalizations with 1 or more BH diagnoses
- 1,647 Hospitalizations with No BH diagnoses

34.8% of All Hospitalizations have 1 or more BH diagnoses
37.7% of High Use Hospitalizations have 1 or more BH diagnoses
37.0% of Preventable Hospitalizations have 1 or more BH diagnoses

1 or more BH diagnoses
No BH diagnoses
Inpatient, Behavioral Health Costs by Payer

- Dual Eligible: $127
- Other Medicare: $261
- Medicaid: $103
- Private: $191
- Charity Care: $131
- Self Pay: $65

Total cost for 13 low-income areas: $880 million (34.8% of total cost)

13 low-income areas
Inpatient, Behavioral Health Costs by Payer

13 Low-Income NJ Areas and All NJ

**Percentages reflect BH-related costs as a percent of total IP costs**

- **All NJ**
  - Dual Eligible: $307 m
  - Other Medicare: $1,492 m
  - Medicaid: $200 m
  - Private: $969 m
  - Charity Care: $275 m
  - Self Pay: $165 m
  - Total: $3,458 m (36.4% of total cost)

- **13 Low-Income Areas**
  - Dual Eligible: $127 m
  - Other Medicare: $261 m
  - Medicaid: $191 m
  - Private: $131 m
  - Charity Care: $65 m
  - Total: $880 m (34.8% of total cost)
Conclusions: Behavioral Health and Avoidable Use and Cost

- Higher prevalence of BH conditions among avoidable hospitalizations
  - Differences are higher for Medicaid beneficiaries for both preventable hospitalizations, and also hospitalizations by high users

- Substantially higher prevalence of BH conditions among high users
  - Overall three out of four inpatient high users are diagnosed with BH conditions
  - 44% of Medicaid inpatient high users have a serious mental illness

- BH-related costs comprise a substantial proportion of total IP costs across regions and payers
  - In the 13 low-income regions, annual BH-related costs amount to $880 m, 34.8% of overall IP costs
  - Statewide, BH-related costs amount to $3.5 b, 36.4% of overall IP costs

- Findings underscore the importance of current NJ policy initiatives including the Medicaid ACOs, Medicaid Managed Behavioral Health Organization, Behavioral Health Homes.

- Special focus may be needed for the Medicaid expansion population which is also likely to have significant behavioral health involvement along with housing and other social challenges.
DISCUSSION
Methods Appendix

- **New Jersey All-Payer Uniform Billing Hospital Discharge data**
  - Public use discharge-level data and patient-level linked data prepared by the NJ Dept. of Health
  - Patient demographics, clinical information, patient residence, hospital charge amounts and hospital information

- **Avoidable Hospitalizations and Emergency Department (ED) Visits**
  - Population-based rates of ambulatory-care sensitive/preventable inpatient and ED visits

- **High Users of Hospital Resources**
  - ‘High user’ of inpatient care equal to 4 or more inpatient stays (96th percentile of statewide distribution) 2008-2011
  - ‘High user’ of ED care equal to 6 or more visits over 2008-2010 (94th percentile of statewide distribution) 2008-2011

- **Cost estimates based on discharge-based charges**
  - Charge data deflated by cost-to-charge ratios, annualized for 2008-11, and adjusted to 2011 dollars using the Consumer Price Index for medical care