CHANGES IN HEALTH CARE SPEND UTILIZATION WITH INCREASING MEDICAL COMPLEXITY

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Disclosures

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Children with medical complexity

• Multiple chronic conditions, technology need and high level of family needs
• Highest resource utilizers
  • ~1-5% of the pediatric population
  • 1/3-1/2 of health care costs
Health care systems and policymakers

- CMC are increasingly a population of interest
  - Triple Aim: better health, better health care, lower cost
  - Potential savings with improved care
- The approach
  - Predict group of high resource utilizers
  - Implement care model, including care coordination, that manages health and impacts costs
Health care service use of CMC

- Average spend of top 1% in Medicaid population-based data set was ~$80,856/yr
  - 92% due to hospital, mental health, specialty care, pharmacy
- Less is known about how patterns of health care utilization vary within clinically identified CMC who are high resource utilizers

Kuo et al, Pediatrics 2015
Objectives

- Describe pattern of health care use for CMC
- Understand how health care service utilization may vary among CMC
Methods

• Descriptive review
  • Population cohort of CMC 0-18 years enrolled in a national learning collaborative improving care for CMC
  • Ten children’s hospitals (nine with a complex care clinic) and network of primary care practices
• Children identified by Clinical Risk Groups methodology
  • State Medicaid data
  • Recruited for enrollment based on multiple chronic conditions
Clinical Risk Groups

• Study subjects qualified for enrollment based on Clinical Risk Groups

• Categories include:
  • 5b (significant lifelong chronic disease), e.g. epilepsy, diabetes
  • 6 (significant chronic disease in multiple organ systems), e.g. sickle cell anemia + depression
  • 7 (dominant chronic disease in ≥3 organ systems), e.g. diabetes + asthma + heart disease
  • 8 (malignancy), e.g. brain tumors, leukemia
  • 9 (catastrophic), e.g. spina bifida, cystic fibrosis
Analyses

• Descriptive review by CRG group
• Outcomes include
  • Annual spend
  • Health care service use
Results

- 8,111 children currently enrolled
- 5,618 person-years in the cohort
- 26%, 50%, 4%, 1% and 19% in CRG groups 5b, 6, 7, 8, and 9, respectively
Total Year Spend

- **CRG 5b**: 6%
- **CRG 6**: 41%
- **CRG 7**: 41%
- **CRG 8**: 11%
- **CRG 9**: 1%

5b significant lifelong chronic illness
6 Significant chronic illness in multiple organ systems
7 Dominant Chronic diseases in 3 or more organ systems
8 Dominant/metastatic malignancy
9 Catastrophic

*Truven Health Analytics™ provided data and analytics support to the CARE Award
*Includes CHA CARE Enrollees identifiable in state Medicaid and managed Medicaid claims (n=1,703 unique CARE enrollees as of February 2016)
*Includes age 0-21 based on age on July 1, 2014
# Spending Outcomes by CRG Group

<table>
<thead>
<tr>
<th>Outcome per beneficiary</th>
<th>Clinical Risk Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 5b</td>
</tr>
<tr>
<td>Person-years</td>
<td>1,447</td>
</tr>
<tr>
<td>Spend, $</td>
<td>$7,813</td>
</tr>
<tr>
<td>Inpatient spend, $</td>
<td>$2,574</td>
</tr>
<tr>
<td>ER spend, $</td>
<td>$334</td>
</tr>
<tr>
<td>Outpatient visits, $</td>
<td>$334</td>
</tr>
<tr>
<td>Prescriptions, $</td>
<td>$1,819</td>
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<tr>
<td>DME services, $</td>
<td>$102</td>
</tr>
<tr>
<td>Home health days, $</td>
<td>$112</td>
</tr>
<tr>
<td>Therapy visits, $</td>
<td>$318</td>
</tr>
<tr>
<td>Mental health visits, $</td>
<td>$738</td>
</tr>
</tbody>
</table>
## Utilization Outcomes by CRG Group

<table>
<thead>
<tr>
<th>Outcome per beneficiary</th>
<th>Clinical Risk Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 5b</td>
</tr>
<tr>
<td>Inpatient admissions, #</td>
<td>0.3</td>
</tr>
<tr>
<td>Inpatient days, #</td>
<td>2.1</td>
</tr>
<tr>
<td>ED visits, #</td>
<td>1.8</td>
</tr>
<tr>
<td>Outpatient visits, #</td>
<td>4.9</td>
</tr>
<tr>
<td>Prescriptions, #</td>
<td>18.5</td>
</tr>
<tr>
<td>DME services,</td>
<td>0.4</td>
</tr>
<tr>
<td>Home health days, #</td>
<td>1.8</td>
</tr>
<tr>
<td>Therapy visits, #</td>
<td>4.5</td>
</tr>
<tr>
<td>Mental health visits, #</td>
<td>8.7</td>
</tr>
</tbody>
</table>
Limitations

- Limited to data set
- May have higher complexity than overall administrative data
- Dependent on quality of Medicaid data
- Different classification may result in different grouping
Conclusions

- 82% of cost subsumed by CRG 6 and 9
- Increasing complexity was associated with more inpatient admissions and days, but no change in proportion of inpatient spend
- Prescriptions, DME, and home health were substantial drivers of costs
Implications

• No one size fits all approach
• Looking solely at ED/inpatient spend may result in limited understanding of impact of care management
• Cost reduction strategy should manage and measure multiple drivers of health, including prescription use, mental/community health and care integration between primary and specialty care
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