Performance on immunization quality measures using claims, medical record and immunization registry data

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Acknowledgements

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Set of measures designed to compare health plan performance on important dimensions of care

- 80+ measures over 5 domains
- 90% of all U.S. health plans report HEDIS
- In 2013, HEDIS covered over 171 million people from 814 HMOs and 353 PPOs
Adolescent Immunization Quality Measures

- Two HEDIS measures assess proportion of adolescents age 13 years who had documented:
  - Tetanus, diphtheria, acellular pertussis (Tdap/Td), Meningococcal vaccines
  - Human Papillomavirus (HPV) vaccine – females only
- Commercial and Medicaid plans
- Reporting options:
  - Administrative (claims)
  - Administrative with medical record review
Registry Data

- Adolescents now receive immunizations from many places
  - Primary care providers
  - Pharmacies
  - School-based clinics
- Registry data can help identify vaccines not documented in claims or medical records
How Registry Data Qualify in HEDIS

- Organizations may use other sources to collect data about their members and about delivery of health services to their members: *supplemental data*

- Standard supplemental data
  - Electronic files that come from providers who rendered the service
  - Production of these files follows clear policies and procedures
  - Standard file layouts remain stable from year to year

- Immunization data in state or county registries may vary from state to state but are consistent for all records in each state’s registry
Overall: Assess health plan performance on adolescent immunization quality measures with focus on HPV vaccine receipt in males

- Examine adolescent immunization rates at the state level using Immunization Information System (IIS) registry data
- Understand health plan barriers to using registry data and how to enhance use
State Registry Methods

- IIS registries from 7 states
- Denominator - compared three definitions
  1. *All Adolescents*: listed in registry and turned 13 years in 2013
  2. *Active Residents*: listed in registry, turned 13 years in 2013, and had record of any 2 vaccines in lifetime
  3. *Census*: estimation of number of 13 year-olds in state in 2013 based on U.S. Census results*
- Numerator - documentation of all recommended vaccines by the 13th birthday (Tdap/Td, Meningococcal and HPV)

*Source: Annual Estimates of the Resident Population by Single Year of Age and Sex for the U.S., States and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2014*
<table>
<thead>
<tr>
<th>State A</th>
<th>State B</th>
<th>State C</th>
<th>State D</th>
<th>State E</th>
<th>State F</th>
<th>State G</th>
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</thead>
<tbody>
<tr>
<td>Health &amp; Human Services Region</td>
<td>Atlanta Region</td>
<td>Denver Region</td>
<td>Seattle Region</td>
<td>San Fran. Region</td>
<td>Phila. Region</td>
<td>Seattle Region</td>
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</tbody>
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Health Plan Methods

- 4 plans* calculated rates from 3 data source combinations
  - Claims data for all adolescents in denominator
  - Claims and medical record data for a random systematic sample of 138 females and 138 males
  - Claims, medical record and registry data for the random sample of adolescents
- Interviewed plans about barriers and facilitators to improving vaccine rates

*3 Medicaid HMOs, 1 Commercial HMO
Health Plan Methods

• Denominator - adolescents enrolled in plan who turned 13 years in 2013

• Numerator - documentation of all recommended vaccines by the 13th birthday (Tdap/Td, Meningococcal and HPV)
# Health Plan Test Sites

<table>
<thead>
<tr>
<th>Type of Plan</th>
<th>Plan A</th>
<th>Plan B</th>
<th>Plan C</th>
<th>Plan D</th>
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</thead>
<tbody>
<tr>
<td>Medicaid HMO</td>
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<td>Commercial HMO</td>
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<td>Seattle Region</td>
<td>Seattle Region</td>
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<tr>
<td>Total Plan Membership Size</td>
<td>53,200</td>
<td>68,090</td>
<td>42,889</td>
<td>366,789</td>
</tr>
</tbody>
</table>
Proportion of Adolescents Who Had Documentation of Vaccines by 13th Birthday in 7 State Registries, by Denominator Definition (2013)

Denominator 1: All Adolescents N=530,305
Denominator 2: Active Residents N=470,947
Denominator 3: Census Data N=371,974

- All Recommended Vaccines (Tdap/Td, Meningococcal and HPV)
  - Denominator 1: 7%
  - Denominator 2: 8%
  - Denominator 3: 10%
Proportion of Adolescents Who Had Documentation of Vaccines by 13th Birthday, By State Registry (2013)

Rates based on “Active Resident” Denominator
Proportion of Adolescents Who Had Documentation of Vaccines by 13th Birthday in 4 Health Plans, by Data Source (2013)

- **Admin Only** (Denominator = 8,170 adolescents): 14%
- **Admin + Medical Record** (Sample of 1,104 patients): 13%
- **Admin + Medical Record + Registry** (Sample of 1,104 patients): 20%

All recommended vaccines (Tdap/Td, Meningococcal and HPV)
Health Plans Interview Findings

- **Accessibility.** 1 plan noted they are prohibited from using its state registry because data are only accessible at the provider level.

- **Cost.** 1 plan pulls state registry data only once per year due to fees.

- **Privacy concerns.** 1 plan noted its state registry has limited utility because many patients opt out of sharing registry data with other providers.
Conclusions

- Registry data can help to provide fuller picture on vaccine coverage rates.
- Combining data from claims, medical records and registries is important for reporting performance rates on vaccine-related quality measures.
- Efforts to incorporate electronic clinical data systems into quality measures can facilitate use of registries and other data beyond claims and medical records.
Electronic Clinical Data Systems for HEDIS

- Patient care captured in a structured, electronic format
- Maintained over time
- Includes some or all key clinical data relevant to care
- Bidirectional, automated sharing of information
- Accessible by the healthcare team at the point of care

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