Using the Minnesota All Payer Claims Database (MN APCD) to Achieve Public Health Goals for Hypertension

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NAHDO 35th Annual Conference
August 17, 2020
Acknowledgments

▪ Cardiovascular Disease Unit, MDH
  ▪ Project Lead/Analyst
    ▪ James Peacock
    ▪ Emily Styles

▪ Health Economics Program, MDH
  ▪ Technical Assistance and Support
    ▪ Elizabeth Egan
    ▪ Mike Burian
3 hypertension projects using the MN APCD

- **Project 1:** State and local overview of the hypertension prevalence in Minnesota (report)
- **Project 2:** Blood pressure medication adherence (dashboard, report)
- **Project 3:** Pharmacist-provided Medication Therapy Management (MTM) for patients with hypertension (tailored summary of benefits and revenue)

Key takeaways and outreach
Project 1: Geographic Variation in Hypertension in Minnesota, 2014
State and local overview of hypertension prevalence in Minnesota

First MN report to show hypertension estimates by local communities

State and local public health and health system partners can use to address geographic disparities with tailored interventions

Served as a frame for Project 2 (medication adherence)

https://www.health.state.mn.us/data/apcd/publications.html
## County and ZIP Code Level Data

**Data:**
- Number with HTN
- Age-adjusted HTN prevalence
- HTN prevalence by:
  - Age group
  - Payer

**MDH analysis of MN APCD data**
The lowest levels of hypertension are in counties along the Twin Cities-Rochester-St. Cloud corridor.

Hypertension prevalence is highest in northwest Minnesota across all age and insurance groups.

In the 7-county Twin Cities metro area, HTN prevalence varies widely across short distances.

MDH analysis of MN APCD data
18 MN counties had 10,000 adults with hypertension

11 of these are in Greater MN (outside 7-county Mpls-St. Paul metro area)
### MN APCD and Comparison with BRFSS

<table>
<thead>
<tr>
<th>Source of HTN Information</th>
<th>Behavioral Risk Factor Surveillance System (BRFSS)</th>
<th>Minnesota All Payer Claims Database (MN APCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-report (awareness)</td>
<td>Dx and Rx codes (treated prevalence)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source of Study Sample (Population)</th>
<th>Behavioral Risk Factor Surveillance System (BRFSS)</th>
<th>Minnesota All Payer Claims Database (MN APCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample of a small proportion of Minnesotans</td>
<td>Before 2016, over 90% of insured Minnesotans</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic Granularity</th>
<th>Behavioral Risk Factor Surveillance System (BRFSS)</th>
<th>Minnesota All Payer Claims Database (MN APCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-level estimates</td>
<td>Can show data at county level and for most ZIP codes</td>
<td></td>
</tr>
</tbody>
</table>
Project 2: Blood Pressure Medication Adherence
Use pharmacy claims data from MN APCD to calculate **Proportion of Days Covered (PDC)** as a measure of blood pressure medication adherence

- Adherence based on 80% threshold

**MDH Cardiovascular Health Indicator Dashboard**

- Adherence

**Forthcoming state report**

- Non-adherence by age, sex, payer, geography

### Age Group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number Taking BP Meds</th>
<th>Percent Non-Adherent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>849,258</td>
<td>29.2%</td>
</tr>
<tr>
<td>18-44 years</td>
<td>91,421</td>
<td>49.4%</td>
</tr>
<tr>
<td>45-64 years</td>
<td>356,381</td>
<td>27.6%</td>
</tr>
<tr>
<td>65-85 years</td>
<td>401,456</td>
<td>26.0%</td>
</tr>
</tbody>
</table>

MDH analysis of MN APCD data
### Non-Adherence by Type of Insurance
#### Adults aged 18 to 85, 2015

<table>
<thead>
<tr>
<th>Insurance Type</th>
<th>Percent Non-Adherent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare</td>
<td>26%</td>
</tr>
<tr>
<td>Dual Eligible</td>
<td>37%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>51%</td>
</tr>
<tr>
<td>Commercial</td>
<td>25%</td>
</tr>
</tbody>
</table>

MDH analysis of MN APCD data
Included Minnesotans with any months enrollment and 2 or more claims for blood pressure medication
Some Caveats

- Proper adherence to blood pressure medication has positive impact on patient health
- Medication adherence can be measured from claims data
  - BUT...
    - It is only one measure
      - There are other important medication issues
    - Reasons for non-adherence include side effects
      - May indicate safety issues for patient
The reports for Projects 1 and 2 include recommendations for:

- Individuals
- Health care providers
- Pharmacists
  - Provide Medication Therapy Management services to patients experiencing adherence challenges, side effects, or those struggling to reach their blood pressure goal
- Payers
- Communities
Project 3: Pharmacist-Provided Medication Therapy Management
MTM visits with a pharmacist may improve hypertension medication adherence and reduce the number of emergency department visits, inpatient stays, and length of hospital stay.

Pharmacist-provided MTM is a covered benefit for Minnesotans with Medicare, Medicaid, and certain commercial health plans.

- Not all community pharmacies have been providing this service.

Outreach to pharmacy managers in Minnesota.

- Eligibility criteria for Minnesota Medicaid recipients have relaxed some and pharmacists may not know how large this group is.
MTM and Public Health Goals for Minnesota

- Create information and revenue tool
- Outreach to share information and tool with pharmacy managers
- Increase provision of MTM
- Improve patient medication adherence
- Improve the health of Minnesotans with hypertension
Approach

- Aggregate counts of eligible patients at ZIP code level and assign to PCSA and counties
  - Patient population (informed by Projects 1 and 2)
    - Minnesota Health Care Programs
    - Johns Hopkins ACG® System to identify hypertension cases in MN APCD
      - Minnesota Medicaid eligibility requires at least one other chronic condition
      - Non-adherent to blood pressure medication(s)
      - No previous MTM
  - Estimate revenues per MTM visit from claims for MHCP
    - Conservative estimate of patients who could benefit from MTM
### MDH analysis of MN APCD data

<table>
<thead>
<tr>
<th>PCSA Code</th>
<th>PCSA City</th>
<th>Store Locations</th>
<th>MN Health Care Program Patients w/ HTN and no MTM</th>
<th>Percent of Patients targeted</th>
<th>Initial Visit Revenue</th>
<th>Average Added Time (9960)</th>
<th>Total 1 Visit Revenue</th>
<th>More than 1 visit</th>
<th>Initial Visit Revenue</th>
<th>Average Added Time (9960)</th>
<th>Total Revenue</th>
<th>Follow-up Visit Revenue</th>
<th>Average Added Time (9960)</th>
<th>Total Revenue</th>
<th>% Annual Total of Durable Service</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN00_ADA</td>
<td>Ade</td>
<td>Ade</td>
<td>&lt;30</td>
<td>100</td>
<td>269</td>
<td>$13,988</td>
<td>$5,901</td>
<td>$19,889</td>
<td>316</td>
<td>$19,452</td>
<td>$28,762</td>
<td>$19,388</td>
<td>$104,159</td>
<td>619</td>
<td>30%</td>
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<tr>
<td>MN00_AITKIN</td>
<td>Aitkin</td>
<td>McGregor</td>
<td>585</td>
<td>100</td>
<td>588</td>
<td>$20,696</td>
<td>$8,751</td>
<td>$29,427</td>
<td>468</td>
<td>$24,536</td>
<td>$32,968</td>
<td>$28,417</td>
<td>$154,202</td>
<td>917</td>
<td>44%</td>
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<tr>
<td>MN00_ALEXANDRIA</td>
<td>Alexandria</td>
<td>Osakis</td>
<td>866</td>
<td>100</td>
<td>104</td>
<td>$5,772</td>
<td>$1,358</td>
<td>$7,130</td>
<td>123</td>
<td>$6,986</td>
<td>$11,195</td>
<td>$7,469</td>
<td>$40,458</td>
<td>261</td>
<td>12%</td>
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<tr>
<td>MN00_AMANDALE</td>
<td>Amnandale</td>
<td>Amnandale</td>
<td>227</td>
<td>100</td>
<td>31</td>
<td>$3,172</td>
<td>$4,510</td>
<td>$7,682</td>
<td>72</td>
<td>$3,742</td>
<td>$6,533</td>
<td>$4,572</td>
<td>$15,689</td>
<td>141</td>
<td>7%</td>
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<tr>
<td>MN00_AURORA</td>
<td>Aurora</td>
<td>Hoyt Lakes</td>
<td>133</td>
<td>100</td>
<td>76</td>
<td>$3,932</td>
<td>$1,667</td>
<td>$5,619</td>
<td>90</td>
<td>$4,680</td>
<td>$8,192</td>
<td>$5,465</td>
<td>$19,575</td>
<td>176</td>
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<tr>
<td>MN00_BAGLEY</td>
<td>Bagley</td>
<td>Clearbrook</td>
<td>166</td>
<td>100</td>
<td>351</td>
<td>$17,212</td>
<td>$7,761</td>
<td>$24,973</td>
<td>388</td>
<td>$20,176</td>
<td>$33,315</td>
<td>$23,559</td>
<td>$117,966</td>
<td>760</td>
<td>3%</td>
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<tr>
<td>MN00_BEMIDJI</td>
<td>Bemidji</td>
<td>Bemidji</td>
<td>719</td>
<td>100</td>
<td>112</td>
<td>$5,824</td>
<td>$2,457</td>
<td>$8,281</td>
<td>131</td>
<td>$6,813</td>
<td>$11,923</td>
<td>$7,954</td>
<td>$45,251</td>
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<tr>
<td>MN00_BENSON</td>
<td>Benson</td>
<td>Morris</td>
<td>243</td>
<td>100</td>
<td>103</td>
<td>$5,558</td>
<td>$2,159</td>
<td>$7,713</td>
<td>120</td>
<td>$6,240</td>
<td>$10,922</td>
<td>$7,288</td>
<td>$39,679</td>
<td>235</td>
<td>11%</td>
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<tr>
<td>MN00_CROOKSTON</td>
<td>Crookston</td>
<td>Crookston, Fertile, Red Lake Falls</td>
<td>223</td>
<td>100</td>
<td>290</td>
<td>$15,090</td>
<td>$6,351</td>
<td>$21,441</td>
<td>340</td>
<td>$17,680</td>
<td>$30,948</td>
<td>$20,645</td>
<td>$112,154</td>
<td>666</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>MN00DETROIT LAKES</td>
<td>Detroit Lakes</td>
<td>Detroit Lakes</td>
<td>650</td>
<td>100</td>
<td>141</td>
<td>$7,532</td>
<td>$3,393</td>
<td>$10,925</td>
<td>166</td>
<td>$8,392</td>
<td>$15,109</td>
<td>$10,080</td>
<td>$54,670</td>
<td>525</td>
<td>16%</td>
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<tr>
<td>ND02_FARGO</td>
<td>Fargo ND</td>
<td>Mahnomen</td>
<td>307</td>
<td>100</td>
<td>222</td>
<td>$11,454</td>
<td>$4,870</td>
<td>$16,324</td>
<td>260</td>
<td>$13,520</td>
<td>$21,045</td>
<td>$15,787</td>
<td>$85,799</td>
<td>510</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>MN00_FERGS FALIS</td>
<td>Fergus Falls</td>
<td>Fergus Falls, Fergus Falls</td>
<td>482</td>
<td>100</td>
<td>253</td>
<td>$15,256</td>
<td>$6,427</td>
<td>$21,683</td>
<td>345</td>
<td>$17,940</td>
<td>$31,401</td>
<td>$20,942</td>
<td>$115,615</td>
<td>678</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>MN00_FOREST LAKE</td>
<td>Forest Lake</td>
<td>Forest Lake</td>
<td>858</td>
<td>100</td>
<td>508</td>
<td>$15,912</td>
<td>$6,712</td>
<td>$22,624</td>
<td>380</td>
<td>$18,720</td>
<td>$32,768</td>
<td>$21,659</td>
<td>$118,595</td>
<td>765</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>MN00 GRAND Rapids</td>
<td>Grand Rapids</td>
<td>Grand Rapids</td>
<td>668</td>
<td>100</td>
<td>45</td>
<td>$2,540</td>
<td>$987</td>
<td>$3,527</td>
<td>52</td>
<td>$2,704</td>
<td>$5,235</td>
<td>$3,157</td>
<td>$17,294</td>
<td>102</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>MN00 GRANITE FALLS</td>
<td>Granite Falls</td>
<td>Granite Falls</td>
<td>97</td>
<td>100</td>
<td>360</td>
<td>$18,720</td>
<td>$7,897</td>
<td>$26,617</td>
<td>422</td>
<td>$20,944</td>
<td>$39,810</td>
<td>$25,624</td>
<td>$139,211</td>
<td>827</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>MN00 HIBBING</td>
<td>Hibbing</td>
<td>Hibbing</td>
<td>782</td>
<td>100</td>
<td>360</td>
<td>$18,720</td>
<td>$7,897</td>
<td>$26,617</td>
<td>422</td>
<td>$20,944</td>
<td>$39,810</td>
<td>$25,624</td>
<td>$139,211</td>
<td>827</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>
Projects 1 and 2 describe hypertension prevalence and medication adherence in Minnesota

- Report that summarizes findings and action items
- Supplement provides data at county and ZIP code levels

Project 3 applies and translates the data to share with pharmacists and promote MTM
Thank You

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Health Economics Program: www.health.state.mn.us/healtheconomics
MN All Payer Claims Data: https://www.health.state.mn.us/data/apcd/index.html