Evaluation of Michigan’s Managing Asthma Through Case Management in Homes (MATCH) Program

Doug Strane
Michigan Dept. of Community Health
MATCH Model

• Certified Asthma Educator
• Six or more home visits by AE-C
  – Physician care conference
  – Environmental assessment
  – School, daycare, work visit
  – Licensed medical social worker
MATCH Model

In 2000, Asthma Network of West Michigan pilot study showed reductions in ED visits, hospitalizations, missed days of school/work.
Outcomes from ANWM Pilot Study

- Pre-post study, Commercial and Medicaid patients (n=37; 2005):
  - 66% decrease in hospital admissions
  - 46% decrease in length of inpatient stay
  - 60% decrease in ED visits
- Reduced length of hospital stay resulted in savings of $2,663 per child per year
Is the success of Asthma Network of West Michigan replicable in other communities?
Evaluation Design

• Three established MATCH programs
  – Asthma Network of West Michigan
  – Hurley Medical Center
  – St. Joseph Mercy Health System

• Inclusion criteria

• MATCH model
  – ≥ 6 visits
  – ≥ 5 months between Intake and Discharge visits
Evaluation Design

All data collected by the Case Management Provider
Participant Retention

- 184: Unique Match IDs at Intake
- 173: ≥1 Follow-up Visits or Discharge Visit (Paired with Intake)
- 132: ≥5 months between Intake and Discharge/Final Follow-up and ≥6 visits
Percentage of Individuals with Asthma-Related Medical Usage in the Past Six Months

- ≥3 ED Visits: 28.36%
- ≥1 ED visit: 86.57%
- ≥1 Hospitalization: 45.45%

Intake
Discharge
### Days and Nights Affected by Asthma

<table>
<thead>
<tr>
<th></th>
<th>Missed Days of School (mean)</th>
<th>Missed Days of Work (mean)</th>
<th>Nights Awake (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake</td>
<td>6</td>
<td>3.75</td>
<td>7.49</td>
</tr>
<tr>
<td>Discharge</td>
<td>1.74</td>
<td>0.82</td>
<td>1.29</td>
</tr>
</tbody>
</table>

*Note: The chart shows the mean number of days and nights affected by asthma between intake and discharge.*
Asthma Action Plans

Intake: 35.87%
Discharge: 88.06%
Mean ACT Scores, Intake and Discharge

ACT (mean score) | Pediatric ACT (mean score)
--- | ---
14.42 | 16.54
18.78 | **19.58**
Asthma Control Test Scores <19 (Not Well-Controlled)

ACT
- Intake: 14
- Discharge: 7

Pediatric ACT
- Intake: 18
- Discharge: 10
Asthma Quality of Life Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Adult AQLQ (mean score)</th>
<th>Pediatric PAQLQ (mean score)</th>
<th>Caregiver CACQLQ (mean score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake</td>
<td>57.56</td>
<td>53.11</td>
<td>55.86</td>
</tr>
<tr>
<td>Discharge</td>
<td>81.22</td>
<td>75.89</td>
<td>76.43</td>
</tr>
</tbody>
</table>

Legend: Blue bar = Intake, Red bar = Discharge
Post-Discharge Analysis

• Phone interview administered six months after last visit with case manager
• How well is asthma controlled once case manager is no longer involved?
Evaluation Design

Baseline Interview → Discharge Interview → 6 Months Post Discharge Interview

Patient Tracking

All data collected by the Case Management Provider
Percentage of Participants who Reported ED Visits and Hospitalizations in the Past Six Months

- ED Visits (%): 85% (Intake), 39% (Post-Discharge)
- Inpatient Hospitalizations (%): 50% (Intake), 13% (Post-Discharge)
Number of Reported ED Visits and Hospitalizations per Participant in the Past Six Months

- ED Visits (mean): 2.24
- Inpatient Hospitalizations (mean): 0.82

- Intake: 0.85
- Post-Discharge: 0.26
Days and Nights Affected by Asthma in the Past Six Months

<table>
<thead>
<tr>
<th></th>
<th>Intake</th>
<th>Post-Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missed Days of School</td>
<td>6.12</td>
<td>1</td>
</tr>
<tr>
<td>Missed Work Days</td>
<td>6.45</td>
<td>1.55</td>
</tr>
<tr>
<td>Nights Awoken by Asthma</td>
<td>7.19</td>
<td>5.11</td>
</tr>
</tbody>
</table>
Next Steps

• Medicaid claims data from Michigan Medicaid Data Warehouse
  – One year pre- and post-MATCH
  – Pharmaceutical and health care utilization

• MATCH cohort vs. control group
  – Exposed to MATCH
  – Not exposed to MATCH

• Cost efficacy analysis
Thank you

Asthma Network of West Michigan
Hurley Medical Center
St. Joseph Mercy Health System
Maureen O’Brien
Questions?

Doug Strane
StraneD@michigan.gov
Michigan Dept. of Community Health