Potentially Preventable Emergency Department Use Among Ramsey County Residents, 2010-2014
Learning Objectives

• Identify the reasons why we study emergency department use.
• Identify the rate of potentially preventable emergency department visits made by Ramsey County residents.
• Identify characteristics of potentially preventable emergency department use among Ramsey County residents.
• Describe the public health implication of this study.
• Learn about the next steps in the study (Phase 2: understanding the “Why”).
Why We Care about Emergency Department Use

- Primary care/urgent care
- Patient safety & outcomes
- Cost
- Medical history
- Coordination of care
- Medical tests
Emergency Department (ED) Study Phase 1: the “What”

Study questions were generated by the Ramsey County Access to Health Services Action Team

Implementing Goal #3 of the Ramsey County Community Health Improvement Plan (CHIP)
Study Questions

• Do Ramsey County residents visit the ED for conditions that could have been treated/prevented by primary care?

If so:

• Which EDs do they visit?
• Where do they live?
• What time of day/day of week do most visits occur?
• What age groups visit most often?
• Do the visits differ by insurance status or payer?
• How have ED visits changed over time?
The Data

Minnesota Hospital Association

- VISITS, not individuals
- Hospital
- Payer
- Zip code
- Age
- Diagnosis
- Admission
- Billed charges
Categorizing the Visits

New York University algorithm (4 categories):

1. **Non-emergent**
   Immediate medical care was not required within 12 hours.

2. **Emergent/Primary Care Treatable**
   Treatment was required within 12 hours, but care could have been provided effectively and safely in a primary care setting.
Categorizing the Visits (continued)

3. **Emergent - ED Care Needed - Preventable/Avoidable**
   Emergency department care was required but the nature of the condition was potentially avoidable.

4. **Emergent - ED Care Needed - Not Preventable/Avoidable**
   Emergency department care was required and ambulatory care treatment could not have prevented the condition.
Categorizing the Visits

ED visit →

1. Nonemergent

2. Primary care treatable

3. Preventable/avoidable

4. Not preventable/avoidable

Emergent

ED care needed

Can care be safely provided in a non-ED setting?

Is the nature of the condition potentially preventable or avoidable with timely and effective outpatient care?
Potentially Preventable Definition

The nature of the condition was potentially preventable if timely and effective ambulatory care had been received during the episode of illness.
Categorizing the Visits - Our Study

ED visit

1. Nonemergent
   - NO

2. Primary care treatable
   - YES
   - Is the nature of the condition potentially preventable or avoidable with timely and effective outpatient care?
   - YES
   - Preventable/avoidable
   - NO
   - ED care needed
     - NO
     - Not preventable/avoidable
     - YES

3. Preventable/avoidable

4. Potentially Preventable

Alcohol
Drug
Mental Health
Injury
Unclassified

Does the patient require contact with the medical system within 12 hours?
Results

During 2010-2014, 77.2% of ED visits made by Ramsey County residents were potentially preventable.
Visits by Year

Number of Potentially Preventable ED visits by year, Ramsey County 2010-2014
## Visits by Gender

<table>
<thead>
<tr>
<th>POTENTIALLY PREVENTABLE</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>216,877</td>
<td>79.2%</td>
</tr>
<tr>
<td>Male</td>
<td>56,889</td>
<td>20.8%</td>
</tr>
<tr>
<td>Total</td>
<td>464,501</td>
<td>100.00</td>
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</tbody>
</table>
Visits by Expected Primary Payer

Number of Potentially Preventable ED visits by payer group and year, Ramsey County 2010-2014

- **Uninsured**
  - 2010: 8,026
  - 2011: 6,948
  - 2012: 16% decrease
  - 2013: 9,762
  - 2014: 5,806

- **Public In**
  - 2010: 20,604
  - 2011: 27,629
  - 2012: 40% increase
  - 2013: 38,715
  - 2014: 18,097

- **Group/Ind**
  - 2010: 20,604
  - 2011: 27,629
  - 2012: 16% decrease
  - 2013: 18,097
  - 2014: 18,097

- **Medicare**
  - 2010: 20,604
  - 2011: 27,629
  - 2012: 40% increase
  - 2013: 38,715
  - 2014: 38,715
Visits by Age Group

Number of Potentially Preventable ED visits by age group, Ramsey County 2010-2014
Age-adjusted Rate

Age-adjusted rate of Potentially Preventable ED visits by age group, Ramsey County 2010-2014
Visits by Diagnosis

80% of all Potentially Preventable ED visits by diagnostic group (AHQR-HCup), Ramsey County 2010-2014

- Inflammation; infection of eye
- Other gastrointestinal disorders
- Other skin disorders
- Allergic reactions
- Chronic obstructive pulmonary disease
- Conditions associated with dizziness
- Other complications of pregnancy
- Disorders of teeth and jaw
- Skin and subcutaneous tissue infections
- Other non-traumatic joint disorders
- Pneumonia
- Nonspecific chest pain
- Other connective tissue disease
- Otitis media and related conditions
- Asthma
- Other lower respiratory disease
- Nausea and vomiting
- Spondylosis; intervertebral disc disorder
- Headache; including migraine
- Other upper respiratory infections
- Abdominal pain

Number of visits

0 10,000 20,000 30,000 40,000 50,000
Visits by Day of Week

Percentage of Potentially Preventable ED visits by day of week, Ramsey County 2010-2014

<table>
<thead>
<tr>
<th>Day</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>15.2</td>
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<tr>
<td>Monday</td>
<td>15.3</td>
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<tr>
<td>Tuesday</td>
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<td>Wednesday</td>
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<tr>
<td>Thursday</td>
<td>13.5</td>
</tr>
<tr>
<td>Friday</td>
<td>13.3</td>
</tr>
<tr>
<td>Saturday</td>
<td>14.3</td>
</tr>
</tbody>
</table>
Visits by Time of Day

Potentially Preventable ED Visits by Time of Day, Ramsey County, 2010-2014

Number of Visits
Visits by ZIP Code
Visits by ZIP Code
With Clinic Locations
Next Steps

Phase 2 study - the “Why”
Questions

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The full ED study can be found at: www.ramseycounty.us/EDstudy