INVESTIGATING GENDER DISPARITIES IN EMERGENCY DEPARTMENT TO HOSPITAL ADMISSION WAIT TIMES

Stephanie Torres BSN,M4; Gregory Stadter MPH; Siddhartha Singh MD
Medical College Physicians, Medical College of Wisconsin, Milwaukee, WI
Background

- Froedtert was identified as a low performer on the Equity metric related to a longer ED length of stay for females on the 2015 University HealthSystem Consortium Quality and Accountability Performance scorecard (UHC scorecard).

- Gender disparities have been described in the Emergency Department (ED) treatment of abdominal pain and sepsis, stroke care, and cardiac catheterization recommendations.

- Hypothesis: Systematic processes or unique characteristics lead to the disparity.

- The aim of this project was to investigate the gender disparity in ED to hospital admission wait times among patients who contributed to the UHC scorecard.
Methods

- Retrospective chart review completed on 399 patients randomly sampled from those that contributed to the UHC scorecard for Froedtert and the Medical College of Wisconsin (MCW).

- Primary and secondary drivers assessed.

- Drivers incorporated into a data entry form for completion of the chart review using EPIC electronic medical record.

- Comparisons made between females and males.

- Wilcoxon two-sample test utilized to evaluate statistical significance.
FIGURE 1: Driver diagram illustrating primary and secondary drivers that influence ED to hospital admission wait times.
## Emergency Severity Index (ESI)

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Requires life-saving interventions or Apneic, pulseless, intubated, unresponsive or acute respiratory distress</td>
</tr>
<tr>
<td>Level 2</td>
<td>High risk situation Or confused/lethargic/disoriented or severe pain or distress</td>
</tr>
<tr>
<td>Level 3</td>
<td>Requires 2 or more resources</td>
</tr>
<tr>
<td>Level 4</td>
<td>Requires 1 resource</td>
</tr>
<tr>
<td>Level 5</td>
<td>No resources required</td>
</tr>
<tr>
<td>Danger Zone Vitals</td>
<td>Consider up-triage from ESI level 3 to ESI level 2 HR &gt;100/RR &gt;20/SaO2 &lt; 92%</td>
</tr>
</tbody>
</table>
### LIFE-SAVING INTERVENTIONS

- Bag valve mask ventilation or intubation
- Surgical airway
- Emergent CPAP/BIPAP
- Defibrillation
- Emergent Cardioversion
- Chest needle decompression
- Pericardiocentesis
- Open thoracotomy
- Intraosseous access
- Significant fluid or blood administration
- Control of hemorrhage
- Naloxone
- D50
- Dopamine
- Atropine
- Adenosine

### RESOURCES

- Labs (blood, urine, cultures)
- EKG
- X ray
- CT
- MRI
- Ultrasound
- Angiography
- Intravenous fluids
- Intravenous, Intramuscular or nebulized meds
- Specialty consults
- Eye irrigation
- Splinting or casting
- Simple procedures: laceration repair, foley, Incision & Drainage

---

**FIGURE 3:**
Description of life-saving interventions and resources used to determine ESI level
Adapted from the AHRQ Implementation Handbook
54.8% of patients were females (n=219)

Average ED length of stay (LOS) was 38.2 minutes longer in females (283.8 vs 245.6)

Larger number of females triaged as being less acutely ill and given ESI level 3 scores (n=71 vs n=50, p=0.038)

Females categorized at ESI level 3 waited an average of 37 minutes longer (330 vs 293.1, p=0.038)
Results Continued

- There was a longer ED LOS in females in the presence and absence of radiological imaging.

- Females with <5 lab tests had a 56.5 minute longer wait time (294.6 vs 238, p=0.0396).

- Unique exams: 3 documented pelvic exams, 30 urine and serum human chorionic gonadotropin pregnancy tests, and 1 point of care ED pregnancy ultrasound performed. These factors displayed no statistical significance.

- Females experienced a longer ED LOS across all drivers.
FACTORS IMPACTING ED TO HOSPITAL ADMISSION WAIT TIMES

SECONDARY DRIVERS

AVERAGE TIME [MINUTES]

RESULTS CONTINUED

MCW
LEARN. LIVE. CARE. CURE
Discussion

- No obvious explanation for the prolonged disposition

- Hypotheses surrounding trauma, atypical presentation of symptoms, special testing unique to females, and necessity of chaperones for pelvic exams or trans-vaginal ultrasounds did not account for the difference

- Implicit bias should be considered
Implicit bias is defined as the “bias in judgement and/or behavior that results from subtle cognitive processes (e.g., implicit attitudes and implicit stereotypes) that often operate at a level below conscious awareness and without intentional control”

Not much literature available on how implicit bias impacts female patients being admitted to the hospital from the ED

Recommend creating a tool-kit with strategies to reduce implicit bias as part of competency training for staff

### Strategies to Combat Implicit Bias

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Stereotype replacement: Recognizing stereotypical responses and intentionally altering the response so that it is replaced with an unbiased, non-stereotypical response</td>
</tr>
<tr>
<td>2.</td>
<td>Counter-stereotypic imaging: Envisioning the person in a way that is counter to or opposite of the stereotype</td>
</tr>
<tr>
<td>3.</td>
<td>Individuation: Appreciating each person as an individual and discovering unique personal attributes</td>
</tr>
<tr>
<td>4.</td>
<td>Perspective taking: Empathizing with the person and viewing things from their perspective</td>
</tr>
<tr>
<td>5.</td>
<td>Increasing opportunities for contact: Broadening one’s interactions with people of diverse backgrounds</td>
</tr>
</tbody>
</table>

*FIGURE 5*
Strategies to Combat Implicit Bias
Adapted from study published by Devine et al.
Limitations

- Data analysis did not examine specific diagnoses although this information was obtained during the chart review.

- Most factors assessed during this study were physician oriented.

- Data regarding transitions of care such as ED arrival to ED rooming, rooming to disposition, and disposition to admission were not assessed.
Conclusion

- Overall delay in hospital admission times for females across all drivers

- Findings suggest that females are being triaged as less acutely ill leading to downstream delays in care and implicit bias may be contributing

- Consider implementing integrated training on techniques to reduce implicit bias

- Future studies are needed to analyze how specific diagnoses, triage nurse gender and pattern of ESI scoring, and ED time flow stamps impact hospital admission time


