Health Disparities in Black, Latinx, and Native Populations Compared to Caucasians: A Retrospective Descriptive-Analysis of Care Focused on Hypertensive Emergency, Non-ST Segment Elevation Myocardial Infarction (NSTEMI), and Cerebrovascular Accident (CVA).

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Jonathan Aguilar Roa, PharmD; Evon Anukam, PharmD, MPH, MS, BCPS

Background
- Health disparity is a sum of differences in healthcare seen in underserved populations of the United States.¹
- Differences include incidence, prevalence, mortality, burden of disease, and other adverse health conditions.
- According to ASHP, health disparities continue to be a major public health problem confronting the U.S. health care systems.²
- Evidence suggests that health disparities can be in part due to differences in the quality of care for different racial and ethnic groups.³
- All the different disparity factors have been shown to lead to different health outcomes that do not favor Black, Latinx, and Native American populations.⁴
- ASHP believes health system pharmacists have both a professional and moral obligation to take part in initiatives that work towards erasing any racial and ethnic disparities in healthcare.⁵
- Examples of ways pharmacists can make an impact are:
  - Increase awareness among fellow caregivers
  - Ensure effective communication by volunteering for leadership roles
  - Enforce consistency of using evidence-based therapy for all patients
  - Analyze data for outcomes sorted by racial minorities
- Per ASHP there are three general principles that serve as guides for pharmacists to help erase healthcare disparities:
  1. All patients have the right to high-quality care, by taking leadership roles pharmacists can partake in initiatives to increase access to care.
  2. Medication-use practices should reflect knowledge of, sensitivity to, and respect for the race and culture of the patient.
  3. Health system pharmacists have a vital role to play in eliminating racial and ethnic disparities in health care.

Purpose
- Evaluate and compare how two large tertiary hospitals have provided prompt evidence-based medical therapy to Blacks, Latinx, and Natives, in comparison to Caucasians pertaining to hypertension emergency, non-ST segment elevation myocardial infarction (NSTEMI), and cerebrovascular accident (CVA).

Objective
- Determine what differences there may be in providing various non-medication/medication interventions and time-to-intervention order placement after arrival to the emergency department (ED).

Methodology
- Institutional Review Board (IRB) – approved
- Double center, observational, retrospective, retrospective, spanning 51 months (January 1, 2017, to March 31, 2021), of adults presenting to ED at either of the two large tertiary hospitals.
- Inclusion criteria:
  - Black, Latinx, Native American, and Canadian adults
  - Age 18 years old, presenting to the ED with primary diagnosis of NSTEMI, hypertensive emergency, or CVA
- Exclusion criteria:
  - < 18 years old, patients not meeting the pre-specified race/ethnicity criteria; primary diagnosis outside of hypertensive emergency, NSTEMI, or CVA

Results

<table>
<thead>
<tr>
<th>Table 1. Patient Demographics</th>
<th>Overall N=6568</th>
<th>Black or African American</th>
<th>American Indian or Alaska Native</th>
<th>White or Caucasian</th>
<th>Hispanic or Latino</th>
<th>Not Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male, No (%)</td>
<td>24,063 (36.4%)</td>
<td>8,401 (36.4%)</td>
<td>4,011 (36.4%)</td>
<td>4,146 (36.4%)</td>
<td>3,421 (36.4%)</td>
</tr>
<tr>
<td></td>
<td>Female, No (%)</td>
<td>41,625 (63.6%)</td>
<td>14,005 (63.6%)</td>
<td>6,168 (63.6%)</td>
<td>6,065 (63.6%)</td>
<td>6,057 (63.6%)</td>
</tr>
<tr>
<td>Age (yr)</td>
<td>Median</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

Discussion

Patient Population
- The total number of patients in the study was 6,398.
- Breakdown of primary clinical diagnosis categories by order of most prevalent: CVA (n=1,858), NSTEMI (1,693), hypertensive emergency (n=48).²
- Total population heavily consisted of White or Caucasian (n=3,393) which was 94% of the racial population.
- Total Hispanic or Latino population (n=207) was 4.8% of ethnicity groups.

Primary and Secondary Outcomes: NSTEMI:
- Similar ordering rates of ECG 12 lead and troponin, (98.100%). American Indian/Alaska Native group had longest time elapsed before ordering either.
- Aspirin ordering rates were 18% for American Indian/Alaska Native, 43% for Black/African American, 59.53% for the remaining three groups.

Hypertensive Emergency:
- No data for other African American/Indian American or American Indian/Alaska Native groups.
- Emergency anti-hypertensive agent ordering rates were 100% for all groups, with White/Caucasian and Not Hispanic/Latino groups having shortest time-to anti-hypertensive agent being ordered.
- Achieving average BP <160/110 mmHg in the first 24 hours favored the Not Hispanic/Latino group with the highest rate of 25%, followed by 13% for White/Caucasian and 0% for Hispanic/Latino.

CVA:
- Aspirin ordering rates were lowest in the American Indian/Alaska Native group (6%) followed by the Black/African American group (11%) which also had the longest time elapsed before ordering (76 minutes).
- American Indian/Alaska Native population had lowest ordering rates for brain non-contract CT or MRI at 43% and the lowest ordering rates of key labs/diagnostics outside of brain imaging at 6%.

Limitations:
- Descriptive study – no statistical analysis performed
- Racial and ethnic identification inaccuracy cannot be ruled out as data was pulled from Epic.
- Unidentified variables may have altered the choice of therapy from providers (e.g., formulary changes)

Conclusions
- Differences in care were present, with more unfavorable trends seen in the American Indian/Alaska Native group.
- Data collection on race and ethnicity needs to improve to make certain that data capturing is accurate and consistent.

Next Steps
- Establish statistical analysis to determine statistically significant differences among the variables.
- Data collection on race and ethnicity needs to improve to make certain that data capturing is accurate and consistent.

Acknowledgements
- Alyx Lesko, Program and Research Manager

References