Closing the Gap on Health Disparity and Outcomes in Hypertension: Utilizing a Quality Improvement Method for Hypertension Management Among Black Patients

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**BACKGROUND**

**Introduction**

Hypertension affects over 116 million adults in the US, with direct costs projected to exceed $220 billion by 2035. Over one-third of Americans with hypertension are not aware they have it. Despite proven interventions outlined in practice guidelines, only 48% of patients who are diagnosed with hypertension have their condition controlled.

Disparities are well documented in hypertension treatment, control and outcomes. Prevalence among Black individuals is much higher than non-Hispanic whites, and deaths attributable to hypertension are twice as frequent.

In Durham County, the prevalence of hypertension is 42%, with a strong association with residential racial isolation, suggesting opportunities to intervene at a neighborhood level to reduce hypertension disparities and improve overall population health.

**Study Objectives**

1. Reduce barriers to effective care in the Durham community through targeted opportunities to improve access to care regarding blood pressure monitoring, diet, exercise and medical management.
2. Adapt proven strategies for blood pressure measurement, monitoring and reporting, and improve delivery of evidence-based interventions to the Durham community, including the use of community-based resources.
3. Design an evaluation and implementation plan tailored to Durham County with patient and community stakeholders, with a focus on using the patient portal for SMBP and continuous quality improvement.
4. Develop a plan with community and external stakeholders using common practices that are generalizable to other communities and regions.

**METHODS**

**Study Planning:**

The patient cohort was identified as 345 Black/African American patients (18+) with severe hypertension (SBP >160 mmHg and/or DBP >100 mmHg) from Lincoln Community Health Center.

**Study Implementation:**

Calls were made to patients following a script in which patients were asked of their interest to enroll in the program and if they would like a free BP cuff to monitor their BP at home. Follow-up calls included SMART goals, measuring BP values, and creating personalized goals to reduce hypertension.

**Follow-Ups and Analysis**

After working with patients from September 2022 to December 2022, BP values were collected until March 31, 2023. Our team then worked in three streams:

**Health:** RE-AIM framework application to hypertension

**Hope:** Quantitative Results: SDOH/Health Equity and referrals made

**Heart:** Qualitative Results: "Reasons why" patients can’t, don’t engage

**RESULTS**

**Demographics of the Cohort**

- 345 Black patients; Average age 52.5; 173 males, 172 females
- Insurance status:
  - Uninsured (n=116); Medicaid (n=20); Medicare (n=18); Private insurance (n=190)

**Process Measures and Outcomes**

<table>
<thead>
<tr>
<th>Process Measure</th>
<th>Number of patients</th>
<th>Operational Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients identified</td>
<td>345</td>
<td>All English speaking, identifying if AA/Black patients identified from EHR with most recent SBP 160+ or DBP 100+ and a phone</td>
</tr>
<tr>
<td>Attempts to reach</td>
<td>899*</td>
<td>Number of attempts to contact patients by telephone</td>
</tr>
<tr>
<td>Process Measure 1: Patients reached over phone</td>
<td>234</td>
<td>Study team was able to reach and confirm correct number</td>
</tr>
<tr>
<td>Patients enrolled</td>
<td>201</td>
<td>Patient agreed to be called again and participate in hypertension telehealth</td>
</tr>
<tr>
<td>Patients participated</td>
<td>70</td>
<td>Patient completed 2 or more telephone calls</td>
</tr>
<tr>
<td>Patients completed</td>
<td>20</td>
<td>Patient engaged 3 or more times in telehealth calls</td>
</tr>
<tr>
<td>Process Measure 2: BP cuffs given</td>
<td>56</td>
<td>BP cuff was received by the patient</td>
</tr>
<tr>
<td>Lost to follow up</td>
<td>53</td>
<td>Not able to contact the patient AND patient did not return for a follow-up clinic appointment by end-date</td>
</tr>
<tr>
<td>Process Measure 3: Home BP value obtained</td>
<td>37</td>
<td>Patient was able to demonstrate self-monitoring BP skills and give the study team a BP value over the phone</td>
</tr>
<tr>
<td>SDOH referral made</td>
<td>54</td>
<td>During an intervention call a Social Need was identified, reported to NP, MD, or social worker, and a referral was made</td>
</tr>
</tbody>
</table>

*Cumulative, multiple patients counted more than once

**DISCUSSION**

- As compared to previous cohorts of Closing the Gap initiative, beginning in 2017:
  - More patients showed improved BP at 6 months and no longer demonstrated severe hypertension.
  - More patients were able to be reached using the adapted process for conducting outreach calls.
  - More SDOH were identified and referred for follow-up resources.
- Approx. 40% of patients did not complete a script or pick up calls, suggesting the need for other outreach interventions to reach these patients.

**FUTURE DIRECTIONS**

- Working with LCHC to develop robust programming alongside the Hypertension Heroes course to reach more patients
- Expand our Closing the Gap program to other FQHC and universities/colleges to recruit more student ambassadors.
- Continuing to collect student ambassador feedback to develop a more directed caller script to enhance patient engagement

**Frameworks and Perspectives**

**RE-AIM:** A quality improvement framework that focuses on planning and evaluation through five areas

**Social Determinants of Health**

**Acknowledgements:**

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**References:**


**Abbreviations:**

- SBP= Systolic blood pressure
- DBP= Diastolic blood pressure
- EHR= Electronic health record
- SDOH= Social Determinants of Health
- RE-AIM= A quality improvement framework that focuses on planning and evaluation through five areas