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Spring 2023

Controlling High Blood Pressure

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Tatusko, Heather M., "Controlling High Blood Pressure" (2023). *Masters Theses/Capstone Projects*. 125.
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Controlling High Blood Pressure QI Project

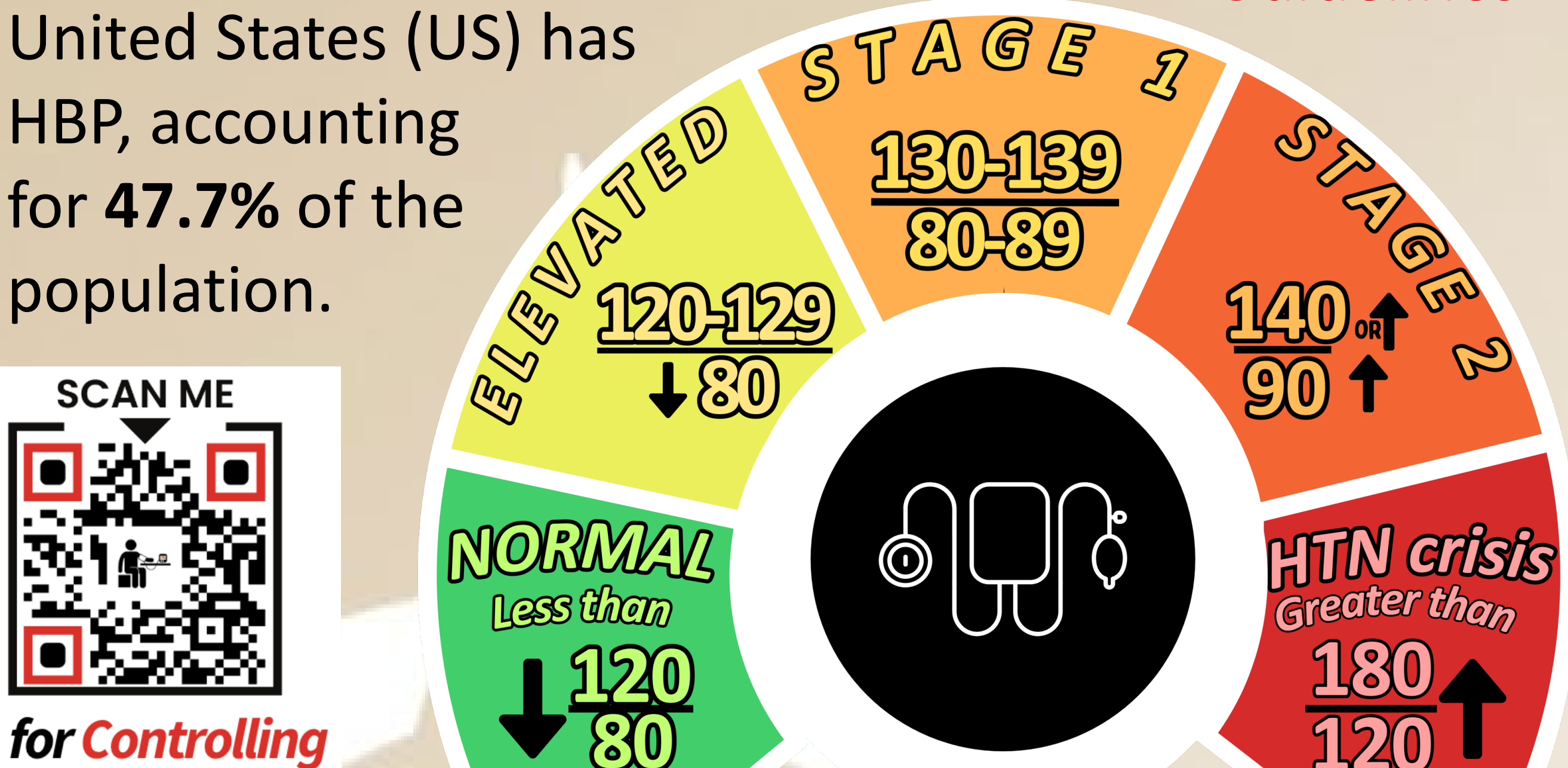
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The Problem: Controlling HBP

- High Blood Pressure (HBP) is also known as hypertension (HTN), and the terms will be used interchangeably to describe the problem.
- When the 2017 HTN guidelines are applied, one in two Adults (ages ≥ 20 years) living in the United States (US) has HBP, accounting for 47.7% of the population.
- HTN is the number one diagnosis for primary care office visits, but a persistent gap remains between the stated public health targets and achieved BP control rates (Choudhry et al., 2022).

Figure. 2017 ACC/AHA Guidelines*



Methods

- The HBP QI project took place at a Federally Qualified Health Center in Franklin County, Ohio.
- The Controlling HBP QI project falls under the Donabedian Category of Health Outcome.
- A Chart Audit Tool was developed based on the Centers for Medicare and Medicaid Services (CMS) 165v10 (HTN Controlling HBP).
- Measure Definition: Patients ages 18-85 years with active HTN diagnosis (ICD10: I10) starting before and continuing into or starting during the first six months of the measurement period and whose most recent BP during the measurement period was adequately controlled.
 - See Table for inclusion/exclusion criteria.
 - SQUIRE 2.0 guidelines for reporting utilized.

Table. Controlling High Blood Pressure Chart Audit Tool

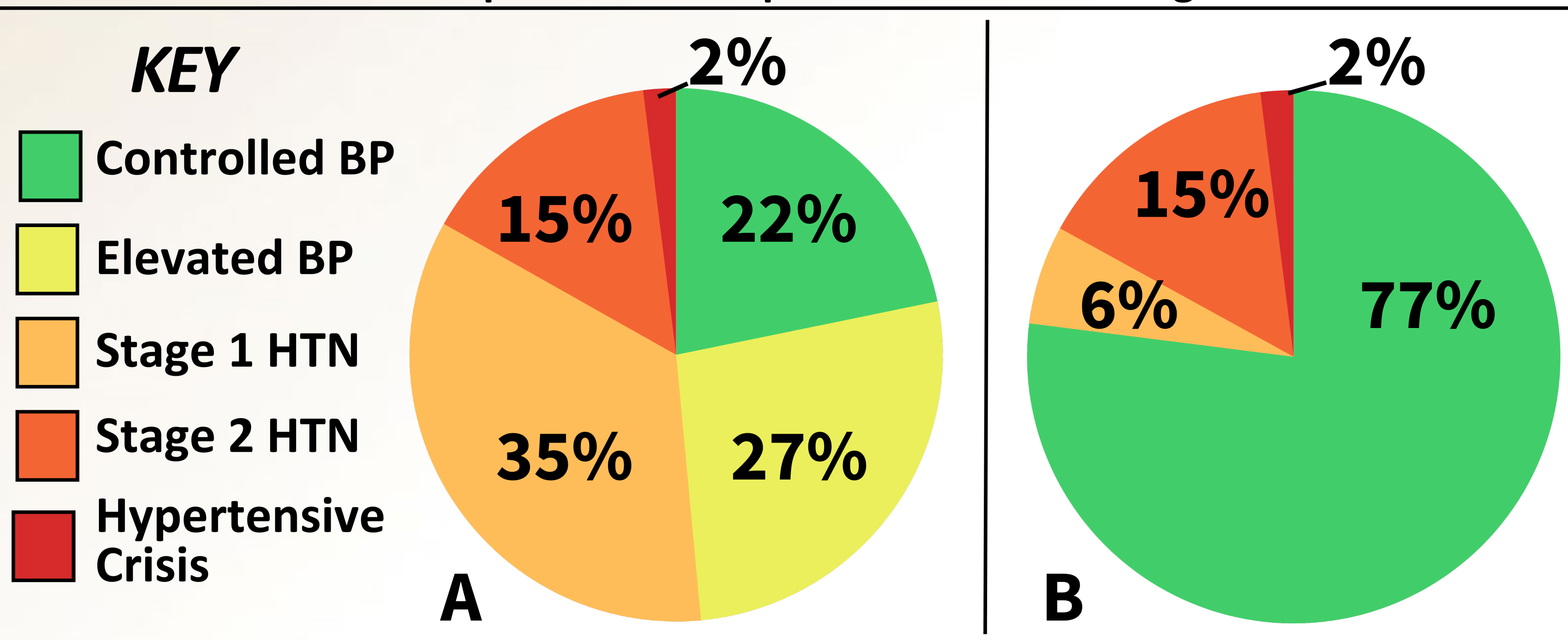
INCLUSION CRITERIA

- Patients 18-85 years of age
 - Most recent systolic blood pressure in measurement period < 140 mmHg
 - Most recent diastolic blood pressure in measurement period < 90 mmHg
 - Active diagnosis of essential HTN (ICD-10: I10)
- ### EXCLUSION CRITERIA
- Active Pregnancy during the measurement period
 - End Stage Renal Disease before or during the measurement period
 - Chronic Kidney Disease, Stage 5 before or during the measurement period
 - Dialysis, Kidney Transplant recipient before or during the measurement period
 - Hospice Care at any point in the measurement period
 - Age ≥ 65 and < 81 at start of period, AND the following Evidence of frailty overlapping the measurement period, AND the following in the two years before the end of the measurement period: > 1 outpatient visit with a diagnosis of Advanced Illness OR Active medication for dementia, Age > 80 at start of period, and evidence of frailty overlapping the measurement period.

Note. Measurement period: April 19 to September 19, 2022; Data collection method: Blood pressure measurement obtained in office or using approved electronic device with data transfer to provider office using lowest systolic bp (SBP) and lowest diastolic bp (DBP). Based on CMS 165v10 (Hypertension Controlling High Blood Pressure).

Results

Numerator $\rightarrow n=104$ Denominator $\rightarrow n=125$
83% of patients had bp controlled according to the measure



A. Patient outcomes with 2017 ACC/AHA BP guidelines applied (follow-up BP goal < 130 and elevated bp category); B. Patient outcomes with JNC 7 (NHLBI, 2004) BP guidelines applied (follow-up BP goal < 140 , the current standard used for measure)

Conclusion

- According to the measure, 83% of patients met the follow-up BP goal (16.8% did not meet goal).
- In a random sample of patients, audit tool revealed 10 out of 10 patients achieved BP control (defined as $\leq 140/90$) at follow-up during the measurement period.
- The bigger picture revealed that the 2017 ACC/AHA BP guidelines are not being used, so patients with elevated BP may be overlooked when implementing interventions.

Results Continued...

125 patients (n=125) fit the measure after exclusions. 21 patients (n=21) did not meet follow-up BP goal (defined as $\leq 140/90$).

Results per 2017 guidelines:

- Normal: 17.6% (n=22)
- Elevated: 26.4% (n=33)
- Stage 1: 42.4% (n=53)
- Stage 2: 15.2% (n=19)
- HTN Crisis: 1.6% (n=2)
- Exclusions: Active pregnancy (n=1); prior kidney transplant (n=1); frailty criteria met (n=2).
- 171/101 and 181/123
- DBP readings stayed below 99 mmHg excluding the two above readings.
- DBP 91-99 mmHg (n=5).

Limitations

- Small sample size (n=10) of chart audit.
- Time-limited nature of clinical experience restricted data collection to one QI cycle.
- BP control (defined as $\leq 140/90$) does not capture patients with elevated BP (SBP 120-129) or stage 1 HTN (according to 2017 ACA/AHA HBP guidelines).
- Lastly, there are multiple confounding variables with BP measurement.

HBP Management

- The relationship between the measure (control of HTN) and long-term clinical outcomes is well established (National Committee on Quality Assurance).
- Key drivers include standardized treatment protocol and treatment intensification (Bretter et al., 2022; Choudhry et al. 2022).



Recommendations

- Calculate cardiovascular disease (CVD) risk on all patients with elevated and HBP.
- Looking at CVD risk and BP level to guide treatment is more efficient and cost effective at reducing CVD risk compared to use of BP level alone (Brettler et al. 2022).
- Future HBP QI projects should look at proportion of patients being treated for HBP with high CVD risk, Diabetes (DM), and/or Chronic Kidney Disease and BP control.

Professional Handout & References

