Impact of New Guidelines for High Blood Pressure: Findings from the OM1 Intelligent Data Cloud

Allison Bryant, Tom Brecht, Zhaohui Su, Richard Gliklich, Vandana Menon
OM1 Inc., Boston, MA, USA

Background

In November 2017, the American College of Cardiology (ACC) and American Heart Association (AHA) released new guidelines for the detection, prevention, management, and treatment of high blood pressure.[1] These guidelines represent the first comprehensive update since 2003 and lower the definition of high blood pressure to promote early intervention and prevention of hypertension related complications.

Objectives

To evaluate the impact of the new ACC/AHA guidelines in a large healthcare-seeking population derived from the OM1 Intelligent Data Cloud

Methods

- The OM1 Intelligent Data Cloud houses extensively linked and nationally representative clinical and administrative data on tens of millions of patients in the United States.
- We performed analyses to evaluate the impact of the new ACC/AHA Hypertension Guidelines on adults aged 20 years and older, with blood pressure measurements performed in an outpatient (primary care and specialty) setting, between January 2013 and January 2018.
- We identified patients with at least two systolic BP readings ≥130 mm Hg or two diastolic BP readings ≥80 mm Hg per the new guidelines, as well as those who met previous JNC guideline[2] definitions of systolic BP ≥140 mm Hg or diastolic BP ≥90 mm Hg.

Results

- The 19 million adults included in our analysis had over 162 million blood pressure measurements over the course of the study period.
- Under the old guidelines, 37% of the adults in our study cohort met criteria for high blood pressure compared to 69% under the new guidelines (**Figure 1**).
- The increase was largest among females (**Figure 2**) and Caucasian adults (**Figure 4**).
- The biggest impact was seen in adults aged 45 years and younger, where the number of adults with hypertension more than doubled from 1.2 million to 3.3 million (**Figure 3**).
- Among the adults meeting criteria for high blood pressure under the new guidelines, 58% already had a diagnosis of hypertension (**Figure 5**). Among those recommended for antihypertensive medication, 64% received at least one prescription for an antihypertensive (**Figure 6**).

Conclusions

- The OM1 Intelligent Data Cloud is a big data platform that enables rapid analysis of large scale populations of interest.
- The new guidelines have a significant impact on the health care system with substantial increases in the number of adults, particularly young adults, now newly eligible for a diagnosis of hypertension with accompanying lifestyle modifications and/or anti-hypertensive medication.
- The new guidelines also result in a larger proportion of diagnosed and treated patients being classified as having inadequate control of their blood pressure.

Figure 1 Adults in the OM1 Intelligent Data Cloud Meeting Criteria for Hypertension

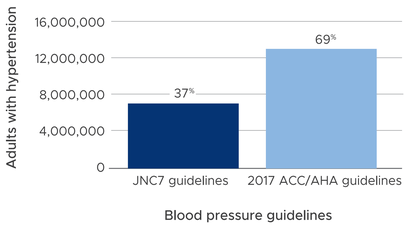


Figure 2 Gender Distribution of Adults with Hypertension According to Blood Pressure Guidelines

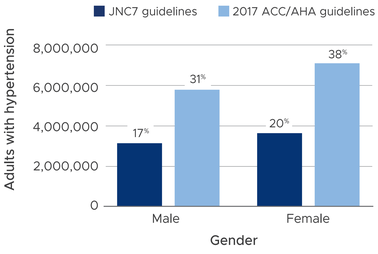


Figure 3 Age Distribution of Adults with Hypertension according to Blood Pressure Guidelines

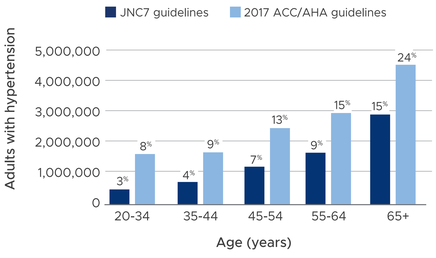


Figure 4 Race Distribution of Adults with Hypertension According to Blood Pressure Guidelines

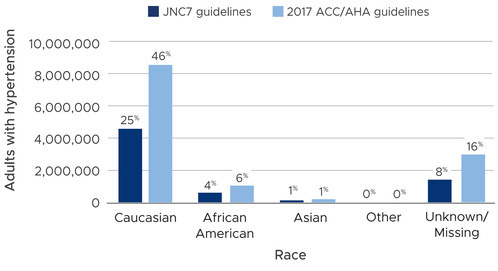


Figure 5 Proportion of patients with a recorded diagnosis of hypertension among those meeting ACC/AHA criteria for hypertension

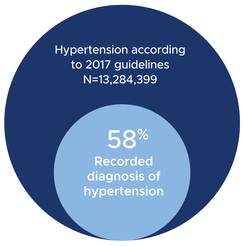
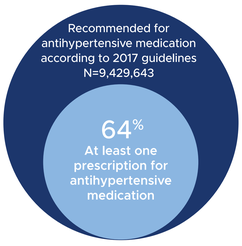


Figure 6 Proportion of patients with at least 1 prescription for antihypertensive medication among patients recommended for treatment



REFERENCES

[1]Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension. 2017

[2]Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. JAMA 2003; 289:2560-1572.

Presented at ISPOR 23rd Annual International Meeting • May 19-23, 2018 • Baltimore, MD