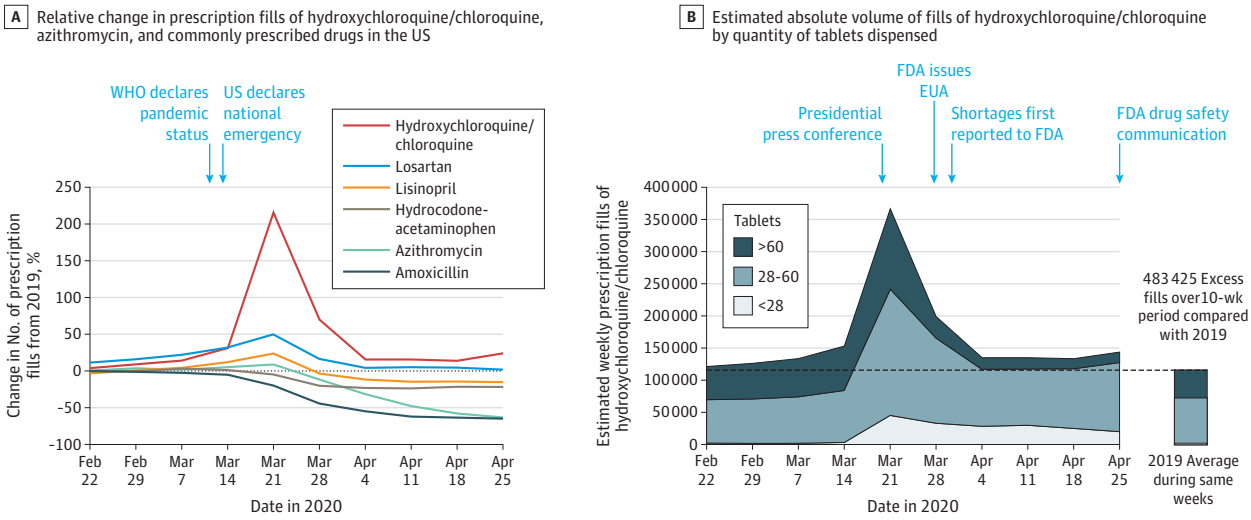
Figure. Prescription Fill Patterns for Commonly Used Drugs During the Coronavirus Disease 2019 Pandemic in the United States



Weekly prescriptions from February 16 to April 25, 2020, were compared with those from February 17 to April 27, 2019. Each date on the x-axis refers to the last day of the week. EUA indicates Emergency Use Authorization; FDA, Food and Drug Administration; and WHO, World Health Organization.

prescription status, or barriers to access could not be accounted for. Mechanisms to safeguard patients against both overprescription and drug shortages during public health crises should be explored.

Muthiah Vaduganathan, MD, MPH
Jeroen van Meijgaard, PhD
Mandeep R. Mehra, MD, MSc
Jacob Joseph, MD
Christopher J. O'Donnell, MD, MPH
Haider J. Warraich, MD

Author Affiliations: Division of Cardiovascular Medicine, Brigham and Women's Hospital, Boston, Massachusetts (Vaduganathan, Mehra); GoodRx, Santa Monica, California (van Meijgaard); Department of Medicine, VA Boston Healthcare System, Boston, Massachusetts (Joseph, O'Donnell, Warraich).

Corresponding Author: Haider J. Warraich, MD, VA Boston Healthcare System, 1400 VFW Pkwy, 4B-132, Boston, MA 02132 (hwarraich@partners.org).

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Concept and design: Vaduganathan, van Meijgaard, Warraich.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Vaduganathan, Mehra, Warraich.
Critical revision of the manuscript for important intellectual content: All authors.
Statistical analysis: Vaduganathan, van Meijgaard, Warraich.
Administrative, technical, or material support: van Meijgaard, Warraich.
Supervision: van Meijgaard, Warraich.

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Disclaimer: These analyses are based on a representative sample of US pharmacy claims and not based on GoodRx transactions.

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Trends in the Prevalence of Metabolic Syndrome in the United States, 2011-2016

Metabolic syndrome is associated with increased risk for cardiovascular disease and all-cause mortality.[1,2] A previous study reported a prevalence of 33% in adults, which remained stable from 2007 to 2012.[3] Understanding current trends in metabolic syndrome prevalence may help identify patients who would benefit from improved screening and optimization of cardiovascular risk profiles. We provide an

Table. Prevalence of the Metabolic Syndrome by Sex and Race/Ethnicity

Characteristics	Unweighted No. (weighted %) [95% CI] 2011-2012	2013-2014	2015-2016	*P* value for trend	Total unweighted No. (weighted %) [95% CI]
Crude metabolic syndrome	1749 (32.5) [29.0-36.2]	2004 (34.6) [32.8-36.5]	2132 (36.9) [33.9-39.9]	.07	5885 (34.7) [33.1-36.3]
Age category, y					
20-39	316 (16.2) [13.6-19.2]	398 (21.0) [18.0-24.3]	411 (21.3) [18.3-24.7]	.02	1125 (19.5) [17.8-[21.4]
40-59	655 (38.3) [34.7-42.1]	737 (38.0) [35.0-41.0]	766 (42.0) [37.2-47.0]	.23	2158 (39.4) [37.2-41.7]
≥60	778 (46.6) [41.4-52.0]	869 (48.5) [45.0-51.9]	955 (50.4) [45.8-54.9]	.29	2602 (48.6) [46.0-51.2]
Sex					
Men	848 (33.3) [29.3-37.6]	910 (34.6) [31.5-37.8]	992 (37.2) [33.2-41.4]	.19	2750 (35.1) [32.9-37.3]
Women	901 (31.7) [28.2-35.4]	1094 (34.6) [32.9-36.4]	1140 (36.6) [33.6-39.7]	.04	3135 (34.3) [32.7-36.0]
Race/ethnicity					
Non-Hispanic white	709 (33.8) [29.4-38.5]	922 (36.4) [33.8-39.0]	712 (37.6) [34.5-40.9]	.18	2343 (36.0) [34.0-38.0]
Non-Hispanic black	451 (29.5) [26.2-33.1]	371 (29.6) [27.3-32.1]	377 (30.0) [26.8-33.5]	.85	1199 (29.7) [28.0-31.5]
Non-Hispanic Asian	152 (19.9) [16.7-23.5]	157 (22.9) [19.5-26.6]	168 (26.2) [23.4-29.2]	.007	477 (23.2) [21.3-25.1]
Hispanic[a]	396 (32.9) [29.6-36.4]	500 (35.1) [31.6-38.7]	787 (40.4) [36.0-44.9]	.01	1683 (36.3) [34.0-38.6]
Other[b]	41 (33.0) [19.5-50.0]	54 (33.3) [26.2-41.2]	88 (47.0) [38.6-55.6]	.11	183 (39.0) [33.0-45.3]

[a] Mexican American or other Hispanic race.

[b] Other non-Hispanic races, including non-Hispanic multiracial.

updated analysis of metabolic syndrome prevalence through 2016.

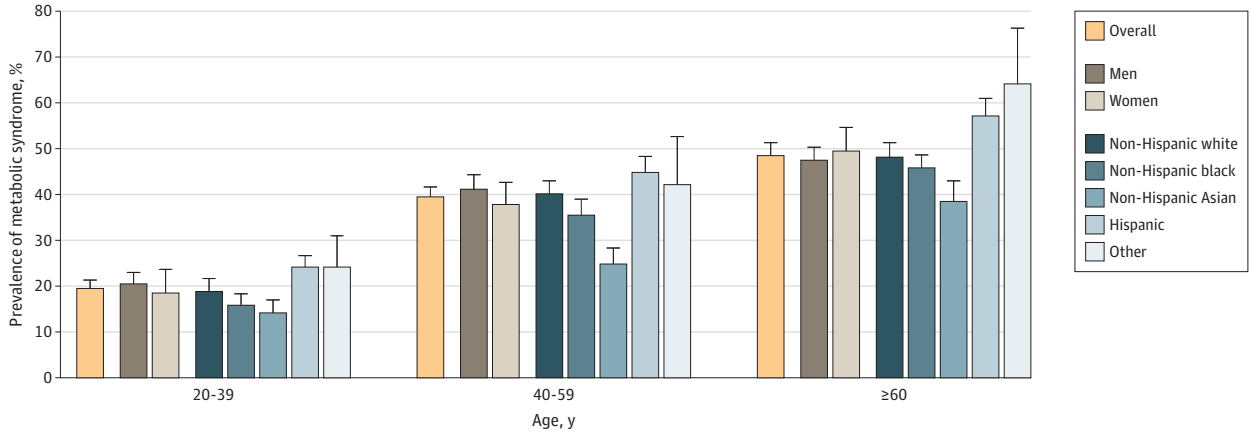
Methods | Using National Health and Nutrition Examination Survey (NHANES) data from 2011 to 2016, a cross-sectional, stratified, multistage probability sample of the US population, we evaluated trends in metabolic syndrome prevalence among adults (aged ≥20 years). NHANES was approved by the institutional review board at the National Center for Health Statistics and written consent was obtained from participants. From 2011 to 2016, unweighted response rates ranged from 58.7% to 69.5%. Self-reported race/ethnicity was evaluated to determine race-specific differences. Metabolic syndrome was defined based on the National Cholesterol Education Program's Adult Treatment Panel III as having at least 3 of the following: waist circumference greater than 102 cm in men or 88 cm in women, triglyceride level greater than 150 mg/dL, high-density lipoprotein cholesterol less than 40 mg/dL in men or less than 50 mg/dL in women, systolic blood pressure at least 130 mm Hg or diastolic blood pressure at least 85 mm Hg or taking hypertension medications, or fasting plasma glucose level at least 100 mg/dL or taking diabetes medications. Weighted data were used to estimate the unadjusted prevalence of metabolic syndrome, stratified by age group (20-39, 40-59, and ≥60 years), sex, and race/ethnicity. Tests for trends were assessed, overall and among subgroups, using logistic regression after regressing metabolic syndrome on year (modeled as a continuous predictor). Between-group comparisons used χ^2 tests. Statistical significance was met with 2-tailed P <.05. Statistical analyses were performed with Stata, version 15 (StataCorp).

Results | Among 17 048 participants, the weighted metabolic syndrome prevalence was 34.7% (95% CI, 33.1%-36.3% [n = 5885]). Metabolic syndrome prevalence was not significantly different among men and women (35.1% vs 34.3%; P = .47) and was highest among "other" race/ethnicity (39.0%), followed by Hispanic (36.3%) and non-Hispanic white (36.0%) participants (**Table**). The increase in the overall crude metabolic syndrome prevalence from 2011-2012 to 2015-2016 did not meet statistical significance (from 32.5% [95% CI, 29.0%-36.2%] in 2011-2012 to 36.9% [95% CI, 33.9%-39.9%] in 2015-2016; P = .07 for trend). Over the study period, metabolic syndrome prevalence increased significantly among those aged 20 to 39 years (from 16.2% to 21.3%; P = .02 for trend), women (from 31.7% to 36.6%; P = .04 for trend), Asian participants (from 19.9% to 26.2%; P = .008 for trend), and Hispanic participants (from 32.9% to 40.4%; P = .01 for trend) (Table).

The prevalence of metabolic syndrome significantly increased with increasing age among all subgroups (**Figure**). Prevalence was 19.5% among those aged 20 to 39 years and increased to 48.6% among those aged at least 60 years. Among each age group, there were no significant differences in metabolic syndrome prevalence between men and women. There were significant differences in prevalence between races/ethnicities among each age group, with the highest prevalence among participants who indicated "other" race/ethnicity who were aged at least 60 years (64.0%), followed by Hispanic participants aged at least 60 years (57.3%).

Discussion | Although the overall increase in metabolic syndrome prevalence among US adults from 2011-2012 to 2015-2016 did not meet statistical significance, there was

Figure. Age-Specific Prevalence of Metabolic Syndrome by Sex and Race/Ethnicity, 2011-2016



Error bars indicate 95% CIs. Hispanic race/ethnicity includes Mexican American or other Hispanic race. Other race/ethnicity includes other non-Hispanic races, including non-Hispanic multiracial. Comparisons of prevalence estimates between age groups among the specified demographic subgroups were performed using χ^2 tests. All comparisons yielded P <.001.

a significant increase observed among young adults. Prevalence among those aged 60 years or older remained high.[3] The fast-growing prevalence in young adults and Hispanic and Asian individuals is important to note given their increasing population in the US.

With an aging US population and concurrent increases in other chronic conditions and comorbidities,[4] increases in the prevalence of metabolic syndrome are concerning. Efforts to implement prevention strategies, including lifestyle modification and use of medications targeted at subgroups at highest risk, may assist in lowering the risk of developing cardiovascular disease.[5,6]

Limitations inherent in the use of NHANES data, such as nonresponse bias and potential misclassification based on medication use, should be acknowledged. Causal inference could not be drawn due to the cross-sectional nature of the study. No information was available on severity or control of each metabolic syndrome component. Lack of the use of race-specific abdominal obesity cut points may have affected the accuracy of the estimates, particularly for Asian participants. There exists the possibility of insufficient power to detect significant differences between groups or over the study period.

Grishma Hirode, MAS
Robert J. Wong, MD, MS

Author Affiliations: Division of Gastroenterology and Hepatology, Alameda Health System–Highland Hospital, Oakland, California (Hirode, Wong); now with the Toronto Centre for Liver Disease, University of Toronto, Toronto, Ontario, Canada (Hirode); now with the Division of Gastroenterology and Hepatology, Veterans Affairs Palo Alto Healthcare System, Palo Alto, California (Wong).

Corresponding Author: Robert J. Wong, MD, MS, Division of Gastroenterology and Hepatology, Veterans Affairs Palo Alto Health Care System, 3801 Miranda Ave, GI Endoscopy Unit, Palo Alto, CA 94304 (rwong123@stanford.edu).

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Concept and design: All authors.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Hirode.
Critical revision of the manuscript for important intellectual content: Wong.
Statistical analysis: Hirode.
Administrative, technical, or material support: Wong.
Supervision: Wong.

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COMMENT & RESPONSE

Vegetable Consumption and Progression of Prostate Cancer

To the Editor Dr Parsons and colleagues conducted a phase 3 nutrition intervention trial among 443 men with prostate cancer.[1] The intervention group was encouraged to consume at least 7 servings of vegetables and fruits daily, including at least 2 servings each of tomatoes and cruciferous vegetables.