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Interruptions in Routine Blood Pressure Screening Services among Local Health Departments during the COVID-19 Pandemic

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Introduction

Hypertension is a leading risk factor for cardiovascular disease and a significant contributor to preventable morbidity, mortality, and healthcare delivery system costs in the United States (US). According to the National Center for Health Statistics (NCHS), hypertension was a primary or contributing cause to over 670,000 deaths nationwide in 2020¹. While the overall prevalence of hypertension among U.S. adults is estimated at 45.4%, significant disparities exist among geographic regions, racial and ethnic groups, and socioeconomic status levels.^{2,3} Serious sequelae of uncontrolled hypertension, including heart disease and stroke, are also inequitably distributed nationwide.⁴

Like many other chronic conditions, hypertension-associated morbidity and mortality can be mitigated at multiple levels of prevention. Chronic disease prevention is widely recognized as a foundational public health service informing the activities of local health departments (LHDs)⁵. The role of LHDs in chronic disease prevention frequently includes access to secondary prevention via screenings. According to nationally representative survey data collected by the National Association of County and City Health Officials (NACCHO), blood pressure (BP) screening is a common LHD function, endorsed by 54% of LHDs nationwide in 2016 and 59% in 2019⁶.

For most LHDs, routine services – including BP screening and other chronic disease prevention work – were interrupted during the initial public health emergency response to the COVID-19 pandemic. Reasons for routine service interruptions included facility closures, local stay-at-home orders, and the reassignment of LHD staff from their usual duties to support the pandemic response workflow.

These changes to LHD service provision and staffing have occurred against the backdrop of an evolving and increasingly inequitable chronic disease risk environment. Since the spring of 2020, lifestyle disruptions have contributed to changes in health behaviors for

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many U.S. individuals and communities. Individual-level risk factors associated with altered physical activity, diet, and substance use patterns are well documented⁷, and have often been compounded by economic hardships, caregiving duties, grief, and other stressors. Healthcare system access and utilization patterns have changed as well including delayed preventive care, interrupted medication access, loss of insurance coverage, and other barriers to clinical care have been widespread⁸. Recognizing that the burden of these and other risk factors will affect certain populations more severely than others, some LHDs launched or prioritized initiatives targeted to people with chronic conditions during service disruptions.

Methods

NACCHO's Forces of Change (FoC) survey is a periodic survey fielded to a sample of LHDs across the US to assess changes in LHD capacity driven by trends in public health. The 2020 FoC survey focused on impacts to LHD infrastructure in the context of the COVID-19 pandemic. The survey was administered electronically through Qualtrics⁹ and was distributed to a population of 2392 LHDs. All LHDs in the study population received a common core set of questions from November 2020 to March 2021 (n = 583; response rate = 24%). In addition to the core questionnaire sent to the population of LHDs, a stratified random sample of 905 LHDs was invited to complete a module questionnaire on topics such as pandemic preparedness, recovery, and equity, with strata defined by the size of the population served by the LHD (n = 237; 26% response rate).

Statistics were computed using post-stratification weights to adjust for oversampling and nonresponses. This analysis provides national estimates for all LHDs in the United States by using weighted survey results based on the size of population served.

Results

A majority of LHDs responding to the 2020 FoC survey reported a reduction in one or more routine public health services during the COVID-19 emergency response¹⁰. Of the LHDs that reported having provided BP screening services at any time during calendar year 2019, over two-thirds (67.2%) indicated that these services were reduced during the pandemic response, and only 1.4% reported that they had expanded screening services. By contrast, in NACCHO's 2019 National Profile of Local Health Departments survey, only 7.3% LHDs had reported reductions in BP screening between calendar years 2017 and 2018, while 13.8% had expanded these services.⁶

Reductions in BP screening services were reported more frequently by populations serving large populations (Populations over 500,000, 85.9%) than by those serving small (less than 50,000) and medium (50,000–500,000) populations (67.2% and 63.9% respectively). State-governed LHDs (36.2%) were less likely to report BP screening service reductions than LHDs with shared or local governance structure (89.6% and 75.4% respectively) (Table).

A significant factor in the reduction in services may have been the reassignment of staff. In 2020, four in five (80%) LHDs reassigned staff from normal duties to support COVID-19 response activities. Over two in five LHDs (43%) reported reassigning staff from chronic disease to perform duties in support to the COVID-19 response. This differed by population

size served (Table): 81.9% of LHDs serving large populations reassigned chronic disease staff, compared to 32.7% of LHDs serving small populations

In response to a question about targeted initiatives to address population health issues exacerbated by the pandemic, only one in five LHDs (20%) endorsed “clinical care for people with chronic conditions during service disruptions” as a priority. Commitment to targeted clinical care initiatives did not vary greatly by LHD’s population size, type of governance, or Census region (Table).

Discussion

A majority of LHDs reduced BP screening services during the COVID-19 pandemic response. Higher rates of pandemic-associated service reductions were observed among LHDs serving large populations and LHDs with state or shared governance structure.

Most LHDs did not name people with chronic conditions as a priority issue to address via targeted initiatives during the 2020–21 pandemic response. This may have been due to competing public health priorities, limited funding, lack of staff capacity, or because other stakeholders in the community were perceived as filling this gap.

BP screening is only one component of LHD chronic disease prevention programming, which may also include primary prevention activities (e.g., health promotion and community education activities, advocacy for healthier built environments) and facilitating access to medical care for community members living with chronic conditions.

Given the inequitable impact that the COVID-19 pandemic has made on cardiovascular health risks and outcomes in the US, an equity-focused approach is recommended for LHDs looking to continue, relaunch, or start new BP screening programs as part of their chronic disease prevention strategies. LHDs should utilize existing community-level data to assess the distribution of risk factors, protective factors, and pertinent outcomes. Geospatial data analysis tools like the Centers for Disease Control and Prevention’s PLACES project¹¹ and the Interactive Atlas of Heart Disease and Stroke¹² can help LHDs as they plan where, when, and how to deliver screening services. This data should be supplemented with both quantitative and qualitative data from key stakeholders, including community members, medical providers, local government, and community-based organizations. LHDs should also recognize the syndemic nature of behavioral health issues and chronic disease, forming interdisciplinary partnerships, and working as an integrated health promotion and care delivery system.

LHDs are uniquely positioned to address the chronic disease health debt introduced by the COVID-19 pandemic due to their knowledge of local contexts, relationships with key stakeholders, and capacity to provide or facilitate access to low-barrier preventive care to the community.

Limitations

The present analysis is not without limitations. Survey data were self-reported and were not verified independently by NACCHO. In addition, NACCHO’s FoC is a cross-sectional

survey reflecting a point in time; LHDs may have revised their priorities and established programming since completing this survey. Finally, non-response bias may impact the results presented here, due to a low response rate during the COVID-19 public health emergency response.

Directions for Future Work

As LHDs enact pandemic recovery plans, many will resume or initiate BP screening and other chronic disease screening programs. Whether service provision will return to pre-2020 frequencies will depend on local priorities, as well as LHD funding levels and workforce capacity. Analysts of future LHD surveys should examine the associations of service provision with workforce and budget indicators, with community-level indicators of the social determinants, and with indicators of relevant population health outcomes.

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Table.

BP Screening Service Changes, Reassignment of Chronic Disease Prevention Staff and LHDs that Prioritized Chronic Care Initiatives as reported in Forces of Change 2020

	LHDs that provided BP screening services at any time in calendar year 2019 (n=202)	LHDs that reduced BP screening services during the COVID-19 pandemic response ^a (n=116)	LHDs that reassigned chronic disease prevention during pandemic response ^b (n=513)	LHDs prioritizing initiatives for people with chronic conditions during COVID-19 service disruptions ^c (n=225)
All LHDs	57.6%	67.2%	43.1%	19.9%
Population Size				
<50,000	67.4%	67.2%	32.7%	20.1%
50,000–499,999	41.1%	63.9%	55.5%	19.3%
500,000+	47.2%	85.9%	81.9%	22.1%
Type of Governance				
State	49.1%	36.2%	37.6%	23.2%
Local	59.8%	75.4%	43.8%	18.0%
Shared	72.6%	89.6%	55.9%	36.4%
Census Region				
Northeast	46.9%	71.4%	25.8%	4.2%
Midwest	67.7%	76.1%	49.1%	20.9%
South	55.2%	54.6%	40.6%	23.3%
West	43.3%	71.8%	65.1%	33.9%

^aLHDs selecting response option “Reduced services” to question: “Between the start of our COVID-19 response and today, my LHD....” This response option was available only to LHDs reporting that they had provided blood pressure screening at any time in calendar year 2019.

^bLHDs selecting response option “Chronic Disease” to question: “From which of the following program areas have staff been reassigned from their regular duties to perform duties in support of your LHD’s COVID-19 response?”

^cLHDs selecting response option “Clinical care for people with chronic conditions during service disruptions” to question: “Please indicate if your LHD has prioritized or developed targeted initiatives to address these issues at any time between the start of your COVID-19 response and today.”