REPORT 02 OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH (A-22)
Transformation of Rural Community Public Health Systems
(Reference Committee D)

EXECUTIVE SUMMARY

BACKGROUND. More than 65 million people living in the United States reside in rural jurisdictions. Rural populations tend to be older, poorer, have less access to health care, have riskier health behaviors, and worse health outcomes than their urban counterparts. Data from the Centers for Disease Control and Prevention (CDC) demonstrates that people living in rural areas are more likely to die from five leading causes of death (heart disease, cancer, unintentional injuries, chronic lower respiratory disease, and stroke) than their urban counterparts. However, the challenges faced by rural areas are not uniform as they have their own unique cultural and geographic differences that benefit from leadership at the local level.

METHODS. English language reports were selected from searches of the PubMed, Google Scholar, and Cochrane Library databases from January 2012 to January 2022 using the search terms: “rural public health,” “rural community health,” and “rural health. Additional articles were identified by manual review of the reference lists of pertinent publications. Web sites managed by federal agencies, applicable professional organizations, and foundations were also reviewed for relevant information.

DISCUSSION. There are more than 2400 local health departments (LHDs) in the United States. It is estimated that about half of LHDs are rural and they differ from their urban and suburban counterparts. Rural LHDs are often limited by budgets, staffing, and capacity constraints in providing public health services, thereby limiting their ability to respond to national public health and health care policy initiatives. With less funding and fewer staff, rural LHDs are often not able to meet the needs of a sicker population over a larger geographical area. It should be noted that some rural areas are not served by a LHD, but rather by a regional or state health department (e.g., Rhode Island). The lack of health care available in rural jurisdictions also contributes in part to the lack of essential and foundational public health services provided in rural communities with rural health departments often left to fill the gap in the absence of other sources of health care.

CONCLUSIONS. Ultimately, residents in rural communities should have equitable access to the essential and foundational public health services provided by the public health system in other jurisdictions. To achieve this, research is needed to determine the needs and models for delivering public health services in rural communities as well as best practices for addressing health behaviors and the social determinants of health in these communities. While examples of using telehealth during the COVID-19 pandemic and cross jurisdictional sharing are helpful, there is little in the published literature regarding successful models for increasing population level public health activities in rural communities. This is likely in part due to rural health departments having little capacity and funding to participate in research and publish results.

REPORT OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH

CSAPH Report 02-A-22

Subject: Transformation of Rural Community Public Health Systems

Presented by: Alexander Ding, MD, MS, MBA, Chair

Referred to: Reference Committee D

INTRODUCTION

Policy H-465.994, "Improving Rural Health," asks that our American Medical Association study efforts to optimize rural public health.

BACKGROUND

More than 65 million people living in the United States reside in rural jurisdictions.[1] Rural populations tend to be older, poorer, have less access to health care, have riskier health behaviors, and worse health outcomes than their urban counterparts.[2,3] Data from the Centers for Disease Control and Prevention (CDC) demonstrate that people living in rural areas are more likely to die from five leading causes of death (heart disease, cancer, unintentional injuries, chronic lower respiratory disease, and stroke) than their urban counterparts.[3] However, the challenges faced by rural areas are not uniform as they have their own unique cultural and geographic differences that benefit from leadership at the local level.

The Council's N-21 report, "Full Commitment by our AMA to the Betterment and Strengthening of Public Health Systems," is highly relevant to this report. That report identified eight major gaps or challenges in the U.S. public health infrastructure. While those challenges were not specific to rural public health, they are broadly applicable across the governmental public health enterprise. These include: (1) the lack of understanding and appreciation for public health; (2) the lack of consistent, sustainable public health funding; (3) legal authority and politicization of public health; (4) the governmental public health workforce; (5) the lack of data and surveillance and interoperability between health care and public health; (6) insufficient laboratory capacity; (7) the lack of collaboration between medicine and public health; and (8) the gaps in the public health infrastructure which contribute to the increasing inequities we see in health outcomes. This report recognizes that these challenges are applicable to rural public health, but this report seeks to build on those findings to examine the challenges and opportunities specific to rural public health.

Furthermore, issues related to rural health care have recently been studied by other AMA councils and will not be the focus of this report. Report 3 of the Council on Medical Education, "Rural Health Physician Workforce Disparities" was adopted as amended by the House of Delegates in November of 2021. The report recognized the need for a multifaceted approach to address the gap of rural health services and noted that the AMA continues to work to help identify ways to encourage and incentivize qualified physicians to practice in our nation's underserved areas, including strategies to increase rural students' exposure to careers in medicine to help expand rural

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physician pathways. Report 9 of the Council on Medical Services, "Addressing Payment and Delivery in Rural Hospitals" was adopted as amended by the House of Delegates in June of 2021. The report notes that addressing payment issues for rural hospitals will help give those hospitals the flexibility to offer more complex services. In turn, those services will boost financial viability, allow small rural hospitals to hire and retain subspecialists, and ultimately increase patient access to care. Policies resulting from these reports are noted below in the section on existing AMA policy.

There are numerous definitions of "rural." The definition of rural public health practice varies by study. Given the limited research available on rural public health, the Council was broadly inclusive of various definitions of rural, including the Census Bureau and the Office of Management and Budget definitions, in reviewing the literature for this report.

METHODS

English language reports were selected from searches of the PubMed, Google Scholar, and Cochrane Library databases from January 2012 to January 2022 using the search terms: "rural public health," "rural community health," and "rural health." Additional articles were identified by manual review of the reference lists of pertinent publications. Websites managed by federal agencies, applicable professional organizations, and foundations were also reviewed for relevant information.

DISCUSSION

Rural-Urban Disparities

Residents of rural communities tend to be sicker, poorer, and have worse health behaviors (e.g., higher alcohol and tobacco use, physical inactivity) than their urban peers. According to the Center for Rural Health Research, "the greatest challenge facing rural America is the confluence of four social vectors: poverty, educational underachievement, poor health behaviors, and lack of access to health care."[4] These four factors have produced "an intergenerational cycle" resulting in widening gaps between rural America and the rest of the country.[4]

While urban public health systems have enhanced their scope of activities and organizational networks since 2014, rural systems have lost capacity, suggesting system improvement initiatives have had uneven success.[5] While urban areas have seen significant improvements in some health indicators, rural areas continue to lag, widening rural-urban health disparities. For example, from 2007 to 2017, rural-urban mortality disparities increased for 5 of 7 major causes of death tracked by Healthy People 2020: coronary heart disease, cancer, diabetes, chronic obstructive pulmonary disease, and suicide.[6]

These disparities have also been evident during the COVID-19 pandemic. In September 2020, COVID-19 incidence (cases per 100,000 population) in rural counties surpassed that in urban counties.[7] When the CDC analyzed county-level vaccine administration data among adults aged 18 and older who received their first dose of either the Pfizer-BioNTech or Moderna COVID-19 vaccine, or a single dose of the Janssen COVID-19 vaccine from December 14, 2020–April 10, 2021. They found that adult COVID-19 vaccination coverage was lower in rural counties (38.9 percent) than in urban counties (45.7 percent) overall.[7] Though it is suggested that implementing approaches tailored to local community needs, partnering with local community-based organizations and faith leaders, and engaging with underserved populations directly and through partners has helped increase vaccination rates in some rural communities.[7]

In describing disparities between rural and urban communities, there is a focus on the lack of resources and resulting impact on health of those living in rural communities, but it is important to highlight that the lack of resources has stimulated creativity and often brings people together across sectors in rural communities to solve the problems facing their population.[8] Researchers working in rural communities describe "cross-sector engagement facilitated by strong social cohesion and a willingness to roll up one's sleeves to address challenges head on."[8] This "strong connectivity across sectors and actors" in rural areas, has resulted in organizations forming partnerships to address issues related to the economy, nutrition, health care, business, and education.[9] Research also suggests that rural communities are resilient, defined as "the ability to prepare and plan for, absorb, recover from or more successfully adapt to actual or potential adverse events." This resilience enables rural communities to respond to economic and social changes.[9] Rural communities are also described as having "pride in place, a shared history, and a shared culture.[8]

Access to Health Care

Access to health care in rural jurisdictions impacts the ability of the public health systems to focus on essential public health services and functions. Nearly 35 years ago, the Institute of Medicine's report on the "Future of Public Health" noted that the responsibility for providing medical care to individuals has drained vital resources and attention away from disease prevention and health promotion efforts that benefit the entire community.[10] While many health departments have moved away from providing clinical services, local health departments (LHDs) in rural areas are often left to fill the gaps in the absence of health care providers. If LHDs in these jurisdictions did stop providing clinical services, they would not be available for the general population. Rural LHDs play a critical role in meeting the needs of the residents by providing clinical preventive services, vaccinations, treatment, and maternal and child health services.[11] Rural LHDs also rely more on clinical services because they receive a higher proportion of revenue from clinical sources than their urban counterparts.[12]

HEALTH DEPARTMENT STRUCTURE AND FUNCTIONS

There are more than 2400 local health departments (LHDs) in the United States. It is estimated that about half of LHDs are rural and they differ from their urban and suburban counterparts.[1] Rural LHDs, similar to their urban counterparts, are often limited by budgets, staffing, and capacity constraints in providing public health services, thereby limiting their ability to respond to national public health and health care policy initiatives.[13] With less funding and fewer staff, rural LHDs are often not able to meet the needs of a sicker population over a larger geographical area.[14] It should be noted that some rural areas are not served by a LHD, but rather by a regional or state health department (e.g. Rhode Island).

Leadership and Workforce

Effective public health practice requires a well-prepared, multi-disciplinary workforce that is equipped to meet the needs of the community being served.[15] The Public Health Accreditation Board standards call for the development of a "sufficient number of qualified public health workers" and a competent workforce through assessment of staff competencies, individual training and professional development, and a supportive work environment. Building a strong public health workforce pipeline was also identified as a need in Public Health 3.0 with a focus on leadership and management skills in systems thinking and coalition building [16]

More than 80 percent of LHD full-time employees (FTEs) (112,000) are employed in departments serving urban areas. Only 18 percent of LHD FTEs (24,000) are employed by LHDs that serve rural populations.[17] Small, rural LHDs often have fewer staff than their urban counterparts.[1] Nurses are often the executive in jurisdictions with a population less than 50,000, while executives of jurisdictions with more than 250,000 are predominantly physicians.[18] Overall, small/rural health departments employ fewer FTEs than do large/urban departments, resulting in a narrower range of public health skills. Seventy-eight percent of LHD executives have no formal public health training, while executives of larger jurisdictions are more likely to have a public health degree.[18]

The other challenge facing the public health workforce more broadly is a significant number of governmental public health workers are planning to leave their position. Data form the Public Health Workforce Interests and Needs Survey found that more than one-fifth of LHD staff intended to leave their position in the next year for reasons other than retirement.[19] Salary, lack of opportunity for advancement, and workplace environment were the top three reasons for leaving.[19]

Funding Sources

The governmental public health system is inadequately funded. The CDC's core budget has been essentially flat, which directly impacts funding for state and local public health across the country.[20] Rural LHDs are more reliant on federal, state, and clinical revenues as compared to their urban counterparts.[1,17] The predictability and stability of public health financing poses a challenge for rural LHDs.[2] Operating on grant dollars can make it difficult to be responsive to community needs and to create new FTEs at the local level. Furthermore, transfers of governmental funding from federal and state levels to rural LHDs is less common as compared to urban LHDs.[1] Local funding for public health is also often based on the tax base, which is low and declining in many rural areas making local investments in public health difficult.[21] Without meaningful growth in the resources available, it is challenging for local governments to meaningfully invest in public programs.[1]

As noted above, the difference in clinical revenues among rural and urban LHDs is notable, with a mean of $21 per capita for rural jurisdictions versus $6 per capita for urban jurisdictions.[17] LHDs experienced decreases in clinical revenue between 2010 and 2016.[2] Urban LHDs provided fewer primary care services in 2016; rural LHDs provided more mental health and substance use disorder services.[2] Overall, rural LHDs generate more revenue from the Centers for Medicare and Medicaid Services and clinical services than their urban counterparts.[2]

Access to Data

Limited availability or access to data, data quality issues, and limited staff with expertise in informatics and data analysis can also contribute to disparities between rural and urban LHDs. One of the biggest data challenges facing rural areas relates to privacy and confidentiality. While some data sets are publicly available for a large urban area, they may not be publicly available for rural areas due to the small size of the population and the possibility that an individual would be identifiable based on their condition or other demographic data. Outdated data sets or the lack of real-time data also makes it challenging to understand important local issues and made timely decisions.

Public Health Programs and Services

The 10 Essential Public Health Services (EPHS) provide a framework for public health to protect and promote the health of all people in all communities.[22] The Foundational Public Health Services

(FPHS) framework is thought of as the minimum level of programs and services that governmental public health should be delivering in every jurisdiction. The FPHS framework allows for the identification of capacity and resource gaps; determination of the cost for assuring foundational activities; and justification of funding needs.[23] However, it is also recognized that to best serve their communities, LHDs may provide additional services and require capacity in different areas.[23]

Maintaining the capacity to provide the nationally recommended public health services in rural areas can be challenging. Public health accreditation, which incorporates the EPHS and FPHS frameworks within its standards, is seen as an important step to improve the quality and effectiveness of public health services, but a shortage of funds, lack of staff, and insufficient staff knowledge are major barriers for rural LHDs to achieve accreditation. The programs and services provided by rural health departments differ from their urban peers. According to the National Association of City and County Health Officials (NACCHO) Profile Survey, LHDs serving rural jurisdictions are more likely to provide certain clinical services, including childhood and adult immunizations, maternal and child health services, and screening/treatment for various conditions.[17] The result is inequities in public health services across jurisdictions.

Rural Public Health Networks

Unlike urban health departments, which are represented through the Big Cities Health Coalition, there is no national group to which rural public health agencies belong and work collaboratively to advocate on behalf of rural public health and build relationships among staff.[1] The lack of rural public health-focused advocacy has resulted in a lack of focus on rural population health. National public health advocacy organizations typically do not focus on population health needs among rural populations, and national rural advocacy organizations have largely focused narrowly on health care access. While there has been some focus on rural public health challenges, it tends to be issue-specific, such as with the opioid epidemc.[1]

Similarly, while there are federal agencies focused on rural health care, the focus on rural public health is minimal. For example, the CDC does not have a centralized rural office. Rather, the Office of the Associate Director for Policy and Strategy coordinates policy and programmatic efforts across the agency on issues relevant to rural health.[24] In March of 2022, Congress approved a revised version of the Consolidated Appropriations Act (H.R. 2417), which provides funding for the remainder of FY22 and averted a government shutdown. The bill requests the CDC to assess and submit a report within 180 days of enactment of the bill on the agency's rural-focused efforts and strengthening such efforts.

RURAL PUBLIC HEALTH OPPORTUNITIES

Cross Jurisdictional Sharing

Cross-jurisdictional sharing (CJS) is a growing strategy used by health departments to address opportunities and challenges such as tight budgets, increased burden of disease, and regional planning needs.[25] By pooling resources, sharing staff, expertise, funds and programs across jurisdictions, health departments can accomplish more than they could alone.[26] CJS can range from as needed assistance such as sharing information or equipment to regionalization/consolidation, such as merging existing LHDs.[26] The Center for Sharing Public Health Services has outlined success factors, facilitating factors, and project characteristics (i.e. senior level support, effective communication) that can increase the likelihood of successful CJS.[27]

One example of successful CJS arrangements include is two rural upstate New York counties that were struggling to provide public health leadership and services forming a relationship that integrated select functions and services, including the sharing of a director and deputy director, while maintaining two distinct LHDs.[28] The counties also contract together for medical and environmental engineering consulting, share an early childhood transportation provider, and share additional purchasing in some programs.[28] By sharing personnel and functions, management personnel costs have been cut in half and both counties have saved over $1 million for the counties combined.[28] Challenges have included anxiety among existing staffers who were concerned that their positions may be cut if tasks become shared or integrated. In New York, state legislation also limits how far integration can go, which has limited some efficiencies.[28]

Telehealth

Small, rural health departments have limited access to technology and to information that is available primarily electronically. The inability to provide in-person services because of the COVID-19 pandemic has forced rural LHDs to evaluate different modalities for providing public health services.[14] During the pandemic, rural LHDs used online meeting platforms to provide smoking cessation, diabetes self-management, and other health education classes to multiple counties. This provided a broader population with access to public health services. Telehealth can also help mitigate the lack of transportation, which is a known barrier to care.[14] Anecdotal evidence suggests that technology has allowed LHDs to maintain and expand the reach and scope of the services they provide.[14] While the use of telehealth to improve access to public health services is promising, and could improve health equity, many rural areas still lack high-speed broadband.[29]

Partnerships

Models that stress collaboration among rural LHDs and community partners hold promise for meeting the challenges of rural public health. Building partnerships among LHDs, community health centers, healthcare organizations, academic medical centers, offices of rural health, hospitals, non-profit organizations, and the private sector is essential to meet the needs of these communities.[30] NACCHO has created a guide to share recommendations and stories from the field about developing and maintaining partnerships in rural communities.[30]

EXISTING AMA POLICY

The AMA has extensive policy addressing rural health and access to health care. Policies addressing rural public health are limited to Policy H-465.994, "Improving Rural Health," which states that the AMA will "work with other organizations interested in public health to identify and disseminate concrete examples of administrative leadership and funding structures that support and optimize local, community-based rural public health; develop an advocacy plan to positively impact local, community-based rural public health including but not limited to the development of rural public health networks, training of current and future rural physicians in core public health techniques and novel funding mechanisms to support public health initiatives that are led and managed by local public health authorities."

AMA Policy H-465.994, "Improving Rural Health," also urges physicians practicing in rural areas to be actively involved in efforts to develop and implement proposals for improving rural health care. Policy H-465.997, "Access to and Quality of Rural Health Care," states that the AMA believes that solutions to access problems in rural areas should be developed through the efforts of voluntary local health planning groups, coordinated at the regional or state level by a similar

voluntary health planning entity. The AMA also supports efforts to place National Health Service Corps physicians in underserved areas of the country.

AMA Policy H-465.988, "Educational Strategies for Meeting Rural Health Physician Shortage" calls on the AMA to encourage medical schools and residency programs to develop educationally sound rural clinical preceptorships and rotations and develop educational strategies for alleviating rural physician shortages. Policy D-465.997, "Rural Health Physician Workforce Disparities," calls on the AMA to monitor the status and outcomes of the 2020 Census to assess the impact of physician supply and patient demand in rural communities."

AMA Policy, D-465.998. "Addressing Payment and Delivery in Rural Hospitals" calls on the AMA to advocate that public and private payers take the following actions to ensure payment to rural hospitals is adequate and appropriate: create a capacity payment to support the minimum fixed costs of essential services, including surge capacity, regardless of volume; provide adequate service-based payments to cover the costs of services delivered in small communities; adequately compensate physicians for standby and on-call time to enable very small rural hospitals to deliver quality services in a timely manner; use only relevant quality measures for rural hospitals and set minimum volume thresholds for measures to ensure statistical reliability; hold rural hospitals harmless from financial penalties for quality metrics that cannot be assessed due to low statistical reliability; and create voluntary monthly payments for primary care that would give physicians the flexibility to deliver services in the most effective manner with an expectation that some services will be provided via telehealth or telephone. The AMA also encourages transparency among rural hospitals regarding their costs and quality outcomes, supports better coordination of care between rural hospitals and networks of providers where services are not able to be appropriately provided at a particular rural hospital, and encourages employers and rural residents to choose health plans that adequately and appropriately reimburse rural hospitals and physicians.

CONCLUSIONS

With an overall sicker population and larger geographical area to cover, rural LHDs are challenged to meet the needs of their population with less funding and fewer, well-trained staff. Ultimately, residents in rural communities should have equitable access to the essential and foundational public health services provided by the public health system in other jurisdictions.[12] To achieve this, research is needed to determine the needs and models for delivering public health services in rural communities as well as best practices for addressing health behaviors and the social determinants of health in these communities.[12]

While examples of using telehealth during the COVID-19 pandemic and CSJ are helpful, there's little in the published literature regarding successful models for increasing population level public health activities in rural communities. This is likely in part due to rural LHDs having little capacity and funding to participate in research and publish results. Unlike their urban counterparts, rural LHDs also lack a specific advocacy organization.

The lack of health care available in rural jurisdictions also contributes in part to the lack of essential and foundational public health services provided in rural communities, with rural LHDs often left to fill the gap in the absence of other sources of health care. While not directly the focus of this report, the AMA has extensive policy addressing access to rural health care.

RECOMMENDATIONS

The Council on Science and Public Health recommends that the following be adopted, and the remainder of the report be filed.

1. That our AMA amend Policy H-465.994, "Improving Rural Health," by addition and deletion to read as follows:

   1. Our AMA (a) supports continued and intensified efforts to develop and implement proposals for improving rural health care and public health, (b) urges physicians practicing in rural areas to be actively involved in these efforts, and (c) advocates widely publicizing AMA's policies and proposals for improving rural health care and public health to the profession, other concerned groups, and the public.

   2. Our AMA will work with other entities and organizations interested in public health to:
   - Encourage more research to identify the unique needs and models for delivering public health and health care services in rural communities.
   - Identify and disseminate concrete examples of administrative leadership and funding structures that support and optimize local, community-based rural public health.
   - Develop an actionable advocacy plan to positively impact local, community-based rural public health including but not limited to the development of rural public health networks, training of current and future rural physicians and public health professionals in core public health techniques and novel funding mechanisms to support public health initiatives that are led and managed by local public health authorities.
   - Advocate for adequate and sustained funding for public health staffing and programs.
   - ~~Study efforts to optimize rural public health.~~

2. That our AMA amend Policy D-440.924, "Universal Access for Essential Public Health Services" by addition and deletion to read as follows:

   Our AMA: (1) supports equitable access to the 10 Essential Public Health Services and the Foundational Public Health Services to protect and promote the health of all people in all communities ~~updating The Core Public Health Functions Steering Committee's "The 10 Essential Public Health Services" to bring them in line with current and future public health practice~~; (2) encourages state, local, tribal, and territorial public health departments to pursue accreditation through the Public Health Accreditation Board (PHAB); (3) will work with appropriate stakeholders to develop a comprehensive list of minimum necessary programs and services to protect the public health of citizens in all state and local jurisdictions and ensure adequate provisions of public health, including, but not limited to clean water, functional sewage systems, access to vaccines, and other public health standards; and (4) will work with the National Association of City and County Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), the Big Cities Health Coalition, the Centers for Disease Control and Prevention (CDC), and other related entities that are working to assess and assure appropriate funding levels, service capacity, and adequate infrastructure of the nation's public health system, including for rural jurisdictions. (Amend HOD Policy)

3. That our AMA reaffirm Policy H-478.980, "Increasing Access to Broadband Internet to Reduce Health Disparities." (Reaffirm HOD Policy)

Fiscal Note: Modest - $1,000 - $5,000

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