CREATING A BLUEPRINT FOR THE FUTURE:

LESSONS LEARNED FROM THE COVID-19 PANDEMIC IN MICHIGAN

PREPARED BY:

PUBLIC HEALTH ADVISORY COUNCIL

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Summary

In January 2020, the World Health Organization announced an outbreak in China tied to respiratory illness caused by a novel coronavirus. Since that time, the COVID-19 pandemic has caused more than 1 million infections and 21,000 deaths in the state of Michigan. Governmental public health were the primary providers of information, testing, data collection, health care coordination, case investigation, contact tracing, case coordination, vaccine distribution and so much more. The early response to COVID-19 revealed major gaps in public health systems. While the state continues to fight this pandemic there are opportunities to strengthen its infrastructure.

The Public Health Advisory Council is responsible for providing advice about emerging issues in public health and providing recommendations to the Governor as to optimum practice, delivery, and response of governmental public health in Michigan. The council has come together to produce a brief that highlights lessons learned from the successes as well as the challenges from pandemic response, while offering guidance on future directions.

This document seeks to examine the public health experience during COVID-19 and identify recommendations for consideration to enable the state to be better prepared to meet population health needs for future pandemics.

Going forward, the council will continue to identify and recommend immediate and long-term solutions necessary to reverse many of the public health challenges caused by the pandemic.

The council has prioritized the following actions as reasonable next steps:

1. Adopt a Health in All Policies approach to policy making.
2. Assess the Public Health Emergency Preparedness Program.
3. Invest in public health infrastructure, leadership and workforce development.
4. Develop a legal framework for enforcement.
5. Modernize data and information technology capabilities.
6. Rebuild public confidence and trust.

COVID-19 has demonstrated how critical the role of public health is to well-functioning human societies and how dire the consequences of an unprepared health system can be. When individual health care resources are challenged such as in this pandemic, the response must include complex surveillance, reporting systems, community engagement and much more. This cannot be achieved with siloed interventions or selective responses. This pandemic offers early warnings, with lessons and opportunities for building public health resilience.

About the Public Health Council

The Public Health Advisory Council was created within the Michigan Department of Health and Human Services at the recommendation of the Public Health Advisory Commission. The council is responsible for developing an action plan for implementing the recommendations of the commission. It is also tasked with providing advice about emerging issues in public health, monitoring the effectiveness of Michigan's public health response system, and reviewing multi-agency efforts to support collaboration and a unified approach on public health responses.

The council is comprised of 20 voting members, including the chief medical executive as chair, and five non-voting ex-officio members representing the following departments:

1. The Michigan Department of Agriculture and Rural Development
2. The Michigan Department of Environment, Great Lakes and Energy
3. The Michigan Department of Health and Human Services
4. The Michigan Department of Licensing and Regulatory Affairs
5. The Michigan Department of State Police

Public Health Advisory Council Membership

Chair: Joneigh Khaldun, MD, Chief Medical Executive/Chief Deputy Director for Health, Michigan Department of Health and Human Services
Vice Chair: Annette Mercatante, MD, Medical Health officer, St. Clair County Health Department
Eric Adelman, Executive Director, Kadima
James Averill, PhD, Interim Director of the College of Veterinary Medicine, Michigan State University
Shenlin Chen, President, Association of Chinese Americans
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Cheryl Dickson, MD, Associate Dean for Health Equity and Community Affairs, Western Michigan University
Sean Dunleavy, Quality Assurance Unit Manager, Michigan Department of Agriculture and Rural Development
Denise Fair, Chief Public Health Officer, Detroit Health Department
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Brian Hartl, Epidemiology Supervisor, Kent County Health Department
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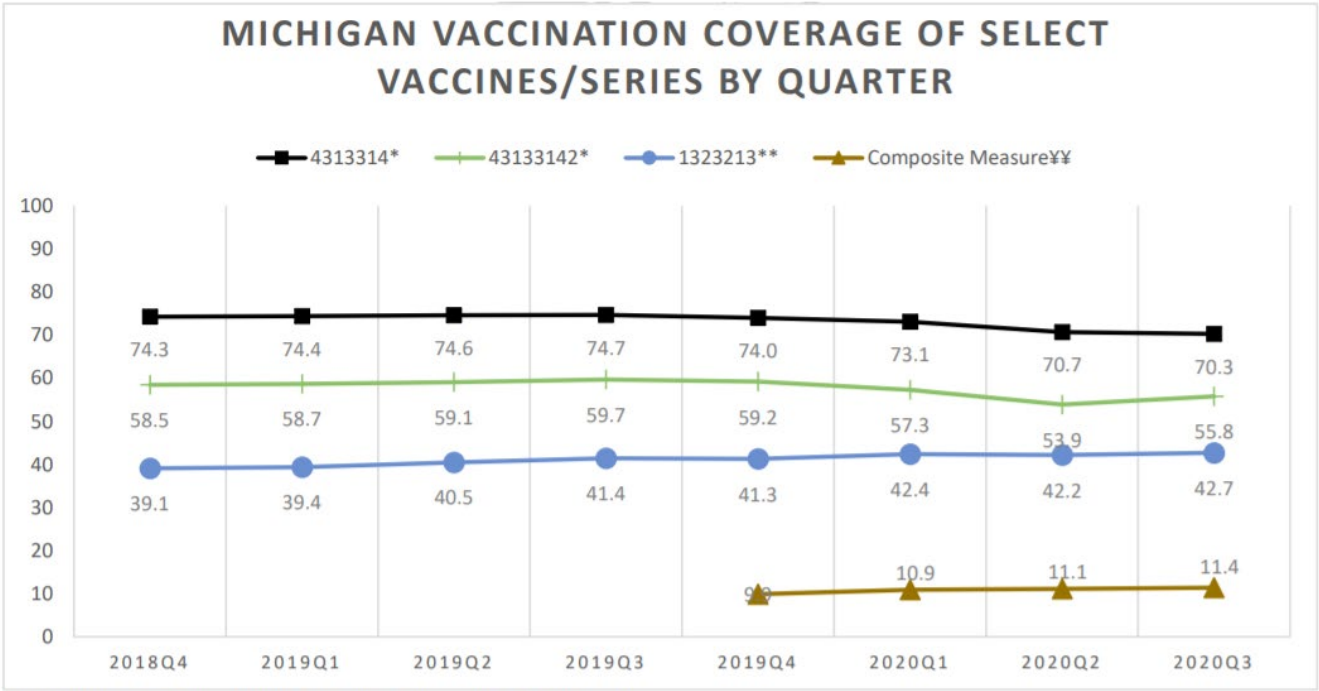
COVID-19 Impacts in Michigan

COVID-19 has profoundly disrupted the lives of individuals, families and communities across the country. In the spring of 2020, Michigan had one of the highest rates of COVID-19 nationally, ranking seventh in the country for the most positive cases and third for the most deaths (DesOrmeau, 2020). As of August 1, 2021, the COVID-19 pandemic has caused more than 1 million infections and 21,000 deaths in the state of Michigan. While vaccines and therapeutics have changed the trajectory of the pandemic, new more easily transmitted variants threaten that progress. Importantly, the COVID-19 pandemic has not occurred in an isolated environment, and other existing public health challenges have been exacerbated or impacted due to the virus. The following data reflect how important public health priorities have been impacted by the pandemic.

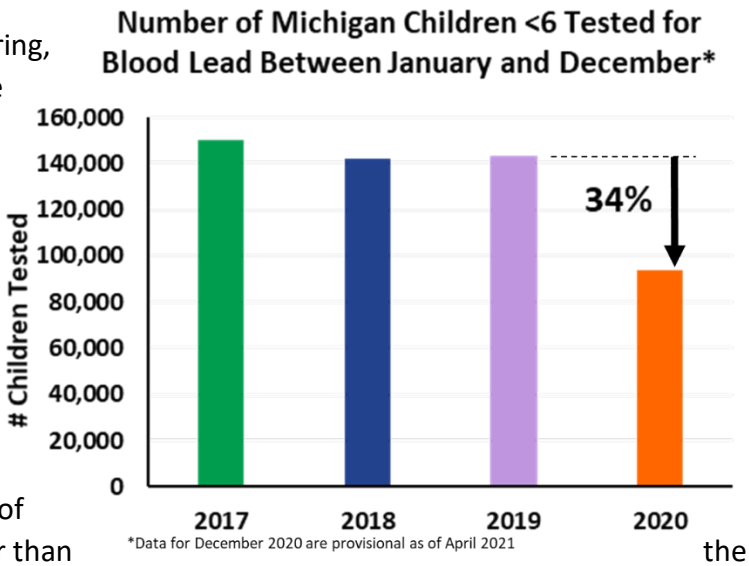
Childhood Immunizations

An unfortunate result of the pandemic is that many children missed checkups and recommended vaccinations. There have been dramatic decreases in childhood vaccination rates since COVID. The identified decline in routine pediatric vaccine ordering and doses administered may indicate that children and their communities face increased risks for outbreaks and vaccine preventable diseases. MDHHS has prioritized addressing these decreases through targeted outreach and education.



* 4313314(2): 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB, 1 Varicella, 4 PCV, (2 HepA)

Lead Poisoning Prevention



When COVID-19 cases spiked last spring, stay-at-home measures and day care closures resulted in children being limited to their homes, where lead exposure could potentially be high. The amount of child blood lead testing in January and February 2020 was consistent with numbers seen in those months in previous years. However, in March 2020 testing started to decrease. In April 2020, the number of children tested was 76 percent lower than the number tested in April 2019. While testing has increased from that low mark, the number of tests performed each month has remained substantially below 2019 figures. Causes for the testing decrease include a suspension in testing at Women, Infants & Children (WIC) clinics, suspension of testing at local health departments because of redirectors resources to pandemic response, televisits often replacing in-person visits, and patients feeling hesitant to seek medical care in general (Zeltner, 2020).

Opioid Response

Emergency Medical Services (EMS) and emergency departments (EDs) in Michigan both saw substantial increases in opioid overdoses throughout the COVID-19 epidemic. According to statistics gathered by MDHHS, EMS responses for opioid overdose increased by 33 percent from April 2020 to May 2020. Additionally, EMS responses for opioid overdoses from April 2020 through June 2020 were 26 percent higher than April 2019 through June 2019. After an initial drop in April, ED visits for opioid overdoses increased in May 2020 and June 2020 to pre-pandemic levels despite EDs seeing fewer visits overall in Michigan during the pandemic.

Mental Health Outcomes

As the pandemic sweeps across the state, it is inducing a considerable degree of fear, worry, and concern in the population at large and among older adults, care providers, and people with underlying conditions (World Health Organization , 2020). The main psychological impacts to date have been elevated rates of stress and anxiety. According to the University of Michigan's Michigan COVID-19 Recovery Surveillance Study (MI CReSS, University of Michigan School of Public Health, 2020) a high proportion of individuals who experienced COVID-19 report impacts to mental health.

Mental health outcomes in the Mi CReSS sample (N=865):

- 18.2% reported depressive symptoms.
- 18.6% reported anxiety symptoms.
- 52.7% reported that stress levels or mental health had "worsened" because of the pandemic.
- 20.5% reported 14+ days in the past 30 days where mental health was "not good."

Suicide Prevention

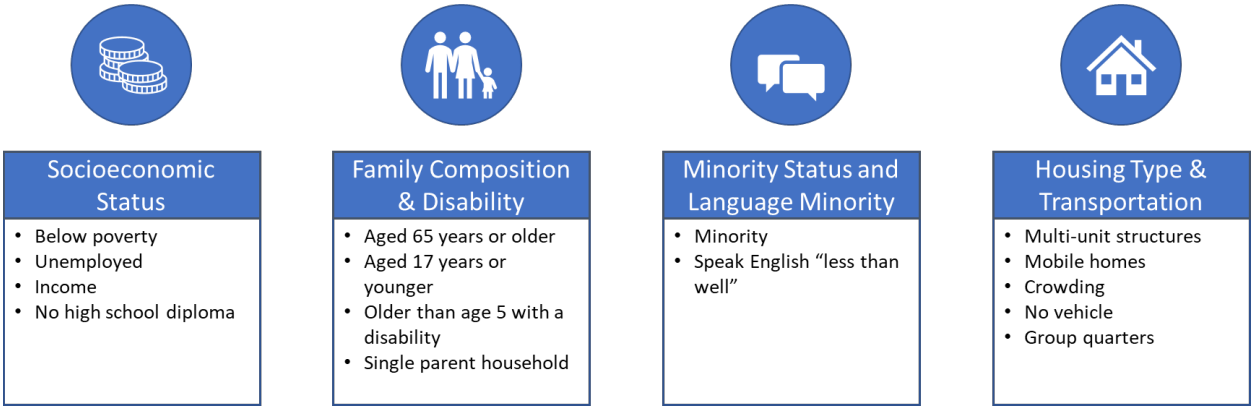
The COVID-19 pandemic may increase the risk of population suicide because of its effects on multiple suicide risk factors. Possible risk factors for suicide during pandemics include isolation, fear, marginalization, psychological disorders, economic fallout and domestic abuse (Banaerjee, Kosagisharaf, & Sathyanarayana Rao, 2021). As of the drafting of this report, there has not been an increase in suicide deaths within the state during the pandemic. Based on studies of previous epidemics, there may be a short-term decrease in suicide death initially with no expected increase later. The Michigan Suicide Prevention Commission has indicated more research is needed to understand the long-term effects of how this pandemic is affecting suicidality, who is at greater risk and how emerging risks can be counteracted.

Strengths of the current public health system

The COVID-19 pandemic has exerted significant pressure on the public health system within the state. While Michigan's public health infrastructure has been understaffed and underfunded for years, it has been an incredible asset to COVID-19 response. The Citizens Research Council of Michigan (2018) found Michigan ranked 37th in state public health funding per capita during FY 2012 ($17.41 per capita) and in each subsequent fiscal year, Michigan remained among the states investing the least amounts in public health.

Attention to the social determinants of health

The social determinants of health are the conditions in the environment where people are born, live, work, play, worship and age and affect a wide range of health, functioning, and



quality of life outcomes and risks. Many social determinants, including poverty, physical environment and access to transportation, can have a considerable effect on COVID-19 outcomes, including morbidity and mortality. Public health agencies were able to use social determinants of health assessments and link individuals to social services and medical care.

Michigan benefited from using the Social Vulnerability Index (SVI) to map and identify places where a community may have more difficulty preventing human suffering and financial loss in a disaster. The SVI is a tool that uses census data to identify and map places where a community may have more difficulty preventing human suffering and financial loss in a disaster. This is important in responding to incidents in an equitable way. The SVI explores the external stresses on human health that could have potential negative effects on communities. Domains commonly used in the social determinants of health are also indicators for where people may encounter barriers to accessing COVID-19 testing, treatment and vaccination. This tool has been helpful in assisting local officials identify communities that would need support before, during, and after disasters.

Expanded partnerships and community engagement

Many health departments went beyond their routine responsibilities to meet their community's health and social needs during the pandemic. This included collaborating across and beyond the public health system to coordinate services and resources. By having built relationships with community organizations and non-traditional partners, local health departments have keen insight into community needs, allowing for more strategic approaches to solving community problems. Some examples of these partnerships include pharmacists working with local public health to administer Federal Emergency Management Agency (FEMA) vaccines and the National Guard providing services to mass vaccination sites.

Access to free, quick and reliable testing was a priority early in the pandemic, and community pop-up testing was a great way to expand access. Many of the community pop-up sites were run, staffed, and executed by local health departments. These events also could not have been fully realized without partnerships from groups like the Michigan Intermediate School Districts (ISDs), school districts, churches and other trusted community organizations. Even as the state continues vaccination efforts, local health departments can leverage existing nontraditional health spaces such as churches, nail salons and barbershops to ensure all Michiganders have equitable access. Coordinating efforts across sectors has been found to be valuable in planning emergency response, identifying areas of greatest needs, developing culturally appropriate messaging, and disseminating information throughout the community.

Telehealth to expand access to services

Health care delivery has changed considerably throughout the pandemic. Michigan has adapted its technology and policies to accommodate health care delivery at a distance. Telehealth use rapidly expanded during the first COVID-19 wave in Michigan, making up 59% of primary care visits at its peak in April 2020 (Li, et al., 2021). Most primary care practices used some degree of

telehealth during the pandemic, but this varied by practice size and urbanicity. Smaller and rural practices continue to face barriers to adoption and are at risk for potentially worsening disparities. The COVID-19 pandemic continues to demonstrate the importance and effectiveness of telemedicine as a means of providing patients with access to safe and quality medical care, while also bringing up the importance of broadband expansion for access.

Challenges faced by local health departments in the COVID-19 pandemic

Addressing systemic health inequities

Racial disparities in access to health care, educational opportunities and economic security predate this public health crisis. Communities of color have faced disproportionate harm both nationally and in Michigan. These disparities are significantly stark from Black, Latinx, American Indian/Alaska Natives, and Asian American Pacific Islanders who have experienced substantially higher rates of COVID-19 infection, hospitalization and mortality compared to white Americans (DeSalvo, et al., 2021). Amid the continued racial tensions in this country, it is not surprising the pandemic has resulted in poor health outcomes and unnecessary loss of life in many vulnerable populations. The Michigan Coronavirus Racial Disparities Task Force has outlined many of the solutions necessary to address and eliminate the disparities exacerbated by the COVID-19 pandemic.

According to the Centers for Disease Control and Prevention (CDC) (2021) some of the factors affecting health equity include:

Discrimination

- Discrimination can lead to chronic and toxic stress, and shapes social and economic factors that put some people from racial and ethnic minority groups at increased risk for COVID-19.

Health Care Access and Use

- People from some racial and ethnic minority groups face multiple barriers to accessing health care including lack of insurance, transportation, child care, or ability to take time off of work to go to the doctor.

Occupation

- People in racial and ethnic minority groups often work in essential settings, such as health care facilities, farms, factories, grocery stores, and public transportation.

Educational, Income, and Wealth Gaps

- People from some racial and ethnic minority groups have less access to high-quality education and as a result face greater challenges in getting jobs that offer options for minimizing exposure to COVID-19.

Housing

- Living in crowded conditions can make it very difficult to separate when you are or may be sick. A higher percentage of people from racial and ethnic minority groups live in crowded housing as compared to non-Hispanic white people and therefore may be more likely to be exposed to COVID-19.

Inconsistent messaging and communications

Since the inception of the pandemic, local health departments have worked nonstop to inform communities of the risk of the virus, as well as to keep themselves, their families and their staff safe. In effort to coordinate state-provided messaging concerning the COVID-19 pandemic, the State Emergency Operations Center (SEOC) activated the Joint Information Center (JIC). The JIC was activated at a virtual level to allow responding public information officers (PIOs) in many locations to access, share and disseminate the latest verified information utilizing online and telecommunication tools. The still-evolving nature of COVID-19 information created difficulties for public health leaders to offer clear – but sometimes changing advice and warnings to the public.

There is no “one size fits all” communications strategy to deliver information during prolonged situations such as a pandemic. Effective communication is central to the management of a rapidly changing societal landscape. Public health messaging should be carefully crafted and guided by local public health experts prior to message delivery. Not sharing enough communication or sharing misinformation can result in distrust from the public, questionable reputation and credibility, and even loss of life (Lopez, 2020). Like with all new diseases, public health is constantly learning more and frequently refining messaging to reflect new

information. Mixed messaging and shifting public health guidance – including mechanisms for transmission, mitigation strategies, and protocols for reopening often served as a barrier to effective local decision making.

Data collection, sharing and technology platforms

Sociodemographic information should be routinely collected in most health care settings. But patients may forget to fill out questionnaires or not answer questions related to race and ethnicity if they feel they cannot trust the health care provider. Some patients may not share their complete health histories and the use of outdated terms about race or gender identity can offend patients, leading to misidentification and difficulty tracking population subgroups. Staff who are responsible to collect information can skip sections, incorrectly record answers or make assumptions about patients. All these examples demonstrate the challenge of accurately capturing data. Despite all of this, Michigan was one of the first states to release COVID-19 case and death data by race and ethnicity (Burns, 2020).

Public health is dependent on data to identify trends and target resources where they will have the greatest impact. The COVID-19 experience illustrates the overdue need to invest in local health department's data and information technology capabilities. The Michigan Care Improvement Registry (MCIR) and Michigan Disease Surveillance System (MDSS) are two technological infrastructures that slowed the public health response on many occasions. Due to the fragility of these technology tools, these systems were ill-prepared for the volume of entries, users, and ongoing connectivity. Additionally, platforms such as MCIR do not collect race data. While some of the hospitals and local health departments do, there was no uniform system for sharing that information with the state. Data technology systems between medical providers, hospitals and public health are often not interoperable, leading to incomplete or missing data to inform the pandemic response.

Funding gaps

It has been consistently documented that though the scope of public health has increased, it has not included an increase in resources. Local health departments have been consistently underfunded (Citizens Research Council of Michigan, 2018). A variety of COVID-19 one-time funding opportunities have been made available, including the allocation of supplemental funding. These funds are time-limited, restricted to COVID-19 response, and do not consistently include long-term commitments to strengthen the public health department's infrastructure.

Order enforcement

The Michigan Legislature enacted the Michigan Public health Code in 1978 and granted broad and flexible authority to public health departments to protect the public from health threats. During the COVID response, there was a network of federal, state and local mandates, orders, requirements and recommendations that impacted individuals, businesses, and communities. Tens of thousands of complaints and concerns came into state agencies and local public health agencies for investigation and enforcement. The level and extent of investigation and

enforcement were impacted by staffing and resources at each agency, partnerships with law enforcement agencies, direction by elected officials, coordination between multiple agencies, ongoing revisions of orders, support by the community and legal review and interpretation of orders.

Public health leadership and workforce

While the health impacts of the COVID-19 pandemic on frontline health care workers have been well described, the effects of the COVID-19 on the public health workforce have not been adequately characterized. Public health staff have worked extensive hours and multiple shifts per day, often seven days a week, to accommodate pandemic response. The potential impact of burnout among public health workers is alarming, given the decline in U.S. governmental public health workforce, which lost 20% of its workforce (34,000) jobs since 2008 while 62% of local health departments had flat or reduced funding (Stone, Kintziger, Jagger, & Horney, 2021) .

The detrimental mental and physical health effects on public health workers will potentially diminish the size of the workforce due to burnout. Among a sample of 26,174 state, tribal, local and territorial public health workers (including Michigan) approximately one half experienced symptoms of a mental health condition (Bryant-Genevier, et al., 2021). Public health workers reported working long hours and an inability to take time off as significant contributors to their poor mental health.

There has also been a tremendous amount of burnout due to leadership turnover. Public health administrators experienced consistent political blowback and pandemic pressure while advocating for science and good public health practice. In 2020, a growing number of state and local health officials resigned or were removed from their positions (Halverson, Yeager, Menachemi, Fraser, & Freeman, 2021). Pandemic-related burnout threatens Michigan's public health workforce's future when many challenges related to the ongoing COVID-19 response remain unaddressed.

Recommendations for the "New Normal"

As Michigan prepares for the post-pandemic era, it will be imperative for policymakers and other relevant stakeholders to develop policies and mechanisms to improve preparedness for the future public health emergencies. This section outlines the immediate priority actions to strengthen the current public health infrastructure and to take advantage of new healthcare modifications brought about in the pandemic.

Adopt a "Health in All Policies" approach to policy making

The people most affected by COVID-19 are communities of color, people with low income, immigrants and other underserved groups. To help communities and local governments strengthen their response to COVID-19 and advance health equity, the Health in All Policies (HiAP) approach can be used to support the investment in the social determinants of health. HiAP introduces a whole government approach to solving large challenges – problems so big and complicated that no one government agency, department or office can fix them on its own. COVID-19 has confirmed the need for every part of government to work together in a coordinated way toward shared response and recovery goals.

State and territorial health agencies have an opportunity to improve health and strengthen prevention efforts by integrating health into the work of other sectors. Decision makers should work collectively to identify issues of shared interest and opportunities for partnership.

Strategies to adopt a "Health in All Policies" approach to policy making

1. Identify complementary goals and activities across state government agencies by creating multi-agency workgroups, councils and task forces.
2. Develop metrics of success to use in negotiating cross-agency collaborative processes.
3. Educate local, state and federal policymakers about the value of HiAP.

Invest in public health infrastructure, leadership and workforce development

Decades of underinvestment in public health have resulted in a decayed public health infrastructure. Moving forward, an intentional focus needs to be made to ensure the public health funding supports the full scope of population health needs. This includes targeted resources to address health inequities and address the social determinants of health. Additionally, current public health funding is too restrictive to rapidly reallocate funds to address crisis situations (DeSalvo, et al., 2021). Policymakers need to consider funding needs for all public health foundational capabilities.

Local health departments were engaged in ongoing pandemic response without sufficient structure or staffing. Simply adding new staff to pandemic response is not a realistic option as it requires time and effort to hire and train qualified personnel. Michigan local health departments lessened the burden by temporarily reallocating staff from various departments with smaller or less essential workloads. This included pulling staff from mandated and essential local public health services to address this crisis. Unfortunately, this strategy is unsustainable as borrowed personnel will eventually need to resume their core responsibilities. A truly comprehensive approach to public health workforce development should include new training and educational programs, maintaining competitive salaries, continuing to develop surge capacity, increasing recruitment and funding fellowship programs.

Strategies to invest in public health infrastructure, leadership and workforce development

1. Leverage funding models that blend and braid funds from multiple sources to support the foundational capabilities of public health.
2. Develop resources to support the professional development of the public health workforce to meet population health needs.
3. Support the retention and recruitment of public health leaders and professionals who are representative of the communities they serve.

Assess the Public Health Emergency Preparedness Program

State and local health departments must be ready to handle a variety of different types of emergencies that threaten the health and safety of families, communities and the nation. The Public Health Emergency Preparedness (PHEP) Program helps health departments build and strengthen their abilities to effectively respond to these threats. Local health departments spend extensive amounts of time and resources planning for emergencies, developing plans and procedures, and conducting practice exercises. As public health continues to respond to the COVID-19 pandemic, the public health emergency preparedness program will need to be shaped by the COVID experience.

Strategies to assess Public Health Emergency Preparedness Program:

1. Examine and address gaps in equity in response capabilities including inequities in allocation of scarce resources, health care capacity and planning for communities at higher risk.
2. Provide culturally and linguistically appropriate resources and technical assistance to communities through all stages of an event.

Develop a legal framework for enforcement

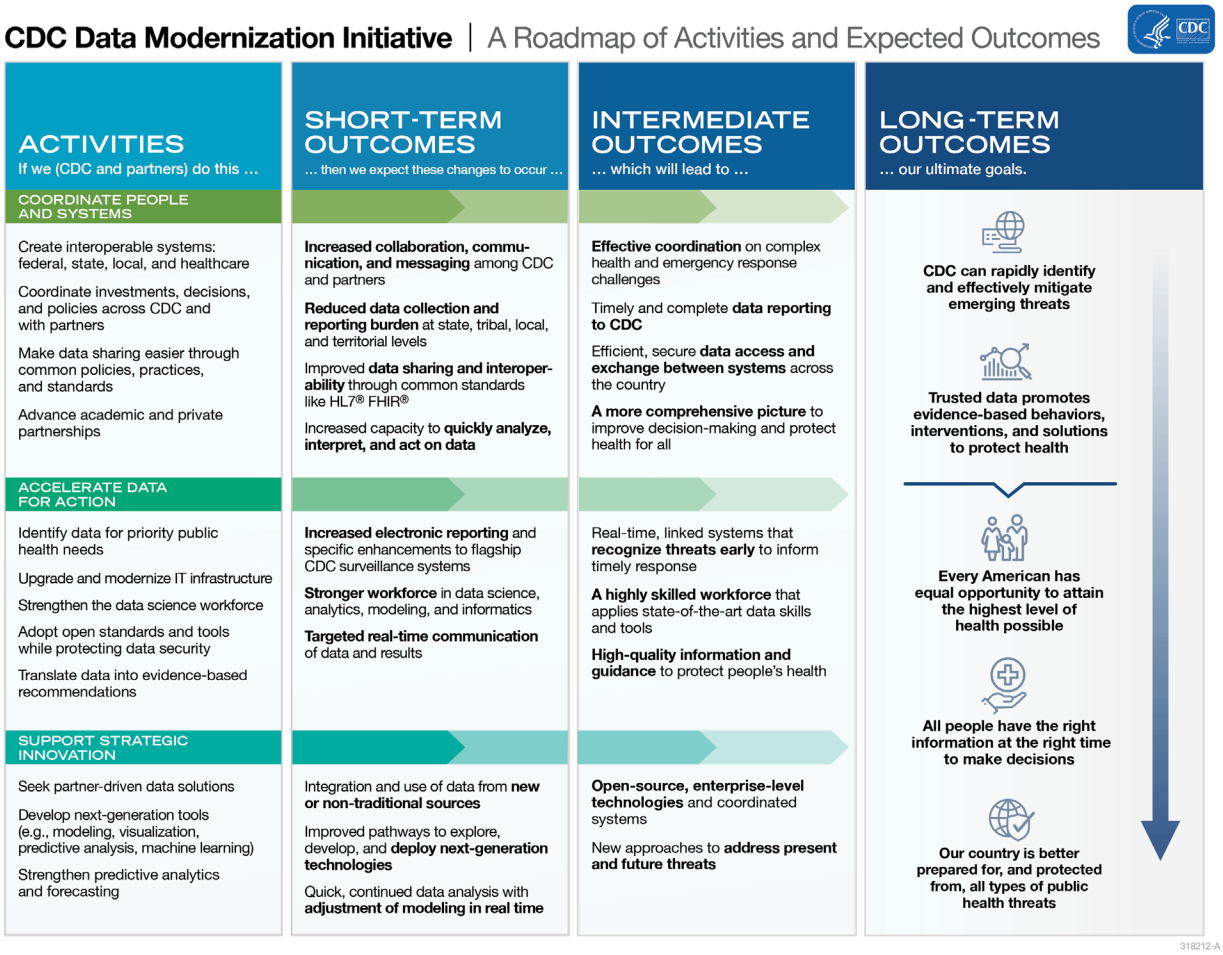
Enforcement of public health orders at the state and local level has been a challenge across the country. Attempts were made to fine both individuals and businesses due to non-compliance with laws, regulations and orders. A potential solution for addressing this problem is to establish a meaningful mechanism for enforcement combined with education for understanding orders. The Essential Public Health Services (EPHS) outline the public health activities all communities should undertake to protect and promote the health of all people in all communities (Centers for Disease Control and Prevention, 2021). As one of the EPHS activities, both state and local public health departments are expected to inform, educate and empower people about health issues while also enforcing laws and regulations that protect health and ensure safety. This could be done through proposing legislation mandating the state health department to issue civil penalties but not without first ensuring individuals understand the health consequences of their decisions. Combining education with public health enforcement should compel public cooperation on these issues of safety.

Strategies to assess develop a legal framework for enforcement:

1. Affirm public health by enabling state and local health departments to execute their public health mandates.
2. Coordinate statutory authorities and responsibilities across jurisdictions.

Modernize data and information technology capabilities

A key area of focus will be ensuring the interoperability of data systems within the public health sector and across the health care system to improve both efficiency of communication and execution. The pandemic has led to the availability of additional funding to update the MDSS, but this will take significant time and resources to build. The CDC (2021) has outlined a roadmap for data modernization that presents a vision of an effective modernization strategy, lays out a path to guide decisions for allocating resources, and provides a structure to track progress.



Strategies to modernize data and information technology capabilities:

1. Create a health information technology roadmap highlighting the necessary digital infrastructure at the local and state levels.
2. Collaborate with federal partners to establish public health information technology system interoperability.
3. Establish standards to ensure that health data is complete – including race, ethnicity, and other key sociodemographic characteristics.

Rebuild public confidence and trust

Rebuilding government legitimacy is imperative to ensure an effective public health response to the pandemic. The consequences of mistrust are grave, resulting in deliberate choices to ignore and attack public health guidance. Patterns of misinformation and disinformation contributed to the politicization of public health, causing difficulty in keeping communities informed during the pandemic. Furthermore, distrust of the health care system has grown among communities of color – who have historically experienced systemic injustice in American health care – due to gaps in federal response to COVID (DeSalvo, et al., 2021).

Public health organizations and partners must strive to establish strong relationships across Michigan's diverse communities. With intentional and authentic community engagement, organizations can incorporate varied perspectives into recommendations and decision making. And while gaining trust is not easy, it is not impossible. This may include opting for more transparency and building authentic relationships with trusted community organizations. By strengthening the relationship between government, local public health and residents, Michigan can be better equipped to respond to COVID-19 and any other future public health threat.

Strategies to rebuild public confidence and trust:

1. Collaborate with community leaders and stakeholders to advise on culturally competent mechanisms for inviting and encouraging participation in messaging.
2. Establish and maintain trusted local, regional, and state-level organizations and entities that can be leveraged during crisis for shared actions.
3. Provide transparency and accountability in all processes to encourage and promote participation.

The Road Ahead

By working together with partners and communities, the state has achieved a great deal in the 18 months since the world was changed by COVID-19. Michigan's public health sector has been critical to pandemic response, from leading testing and tracing efforts to coordinating vaccination campaigns. Through this crisis, our local health departments have led the response despite countless obstacles posed by inadequate infrastructure, institutional silos and insufficient resources. This pandemic has provided the state with an unprecedented opportunity to understand the important lessons that public health can teach us. The task ahead is for the State of Michigan to maintain its level of readiness as the virus evolves and as vaccines continue to be distributed.

References

Banaerjee, D., Kosagisharaf, J. R., & Sathyanarayana Rao, T. S. (2021). 'The dual pandemic' of suicide and COVID-19: A biopsychosocial narrative of risks and prevention. *Psychiatry Res, 295*. doi:doi: 10.1016/j.psychres.2020.113577

Bryant-Genevier, J., Rao, C. Y., Lopes-Cardoxo, B., Kone, A., Rose, C., Thomas, I., . . . Byrkit, R. (2021, July 2). Symptoms of Depression, Anxiety, Post-Traumatic Stress Disorder, and Suicidal Ideation Among State, Tribal, Local, and Territorial Public Health Workers During the COVID-19 Pandemic — United States, March–April 2021. *Morbidity and Mortality Weekly Report, 70*(26), pp. 947-952. doi:DOI: http://dx.doi.org/10.15585/mmwr.mm7026e1

Burns, G. (2020, April 29). *Michigan's Black Communities Devastated by the Coronavirus.* Retrieved from Government Technology: https://www.govtech.com/em/safety/michigans-black-communities-devastated-by-the-coronavirus.html

Centers for Disease Control and Prevention. (2021, March 18). *10 Essential Public Health Services.* Retrieved from Centers for Disease Control and Prevention Web site: https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html

Centers for Disease Control and Prevention. (2021, April 9). *Data Modernization Initiative.* Retrieved from Centers for Disease Control and Prevention Web site: https://www.cdc.gov/surveillance/surveillance-data-strategies/data-IT-transformation.html

Centers for Disease Control and Prevention. (2021, April 19). *Health equity considersations and racial and ethnic minority groups.* Retrieved from Centers for Disease Control and Prevention Web site: https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html

Centre for Public Impact. (2020, December 17). *Legitimacy & COVID-19: Why rebuilding trust in government is imperative to responding to and recovering from the pandemic*. Retrieved from Centre for Public Impact Web site: https://www.centreforpublicimpact.org/insights/legitimacy-and-covid-19-why-rebuilding-trust-in-government-is-imperative-to-responding-to-and-recovering-from-the-pandemic

Citizens Research Council of Michigan. (2018). *An ounce of prevention: What public health means for michgian.* Livonia. Retrieved from https://crcmich.org/wp-content/uploads/rpt403_public_health-2.pdf

DeSalvo, K., Hughes, B., Bassett, M., Benjamin, G., Fraser, M., Galea, S., . . . Howard, J. (2021). Public health COVID-19 impact assessment: Lessons learned and compelling needs. *NAM Perspectives*.

DesOrmeau, T. (2020, April 30). *Michigan still 3rd in US for most coronavirus deaths with nearly 3,80*. Retrieved from MLIVE: https://www.mlive.com/public-interest/2020/04/michigan-still-3rd-in-us-for-most-coronavirus-deaths-with-nearly-3800.html

Halverson, P. K., Yeager, V. A., Menachemi, N., Fraser, M. R., & Freeman, L. T. (2021, January/February). Public health officials and COVID-19: Leadership, politics and the pandemic. *Journal of Public Health Management and Practice*, S11-S13. doi:doi: 10.1097/PHH.0000000000001281

Li, K. Y., Ng, S., McCullough, J., Zhu, Z., Kochner, K., & Ellimoottil, C. (2020). *Telehealth use in Michigan during COVID-19.* 2021: Institute for Healthcare Policy and Innovation - University of Michigan. Retrieved from https://ihpi.umich.edu/sites/default/files/2021-03/0216_Primary-Care-Telehealth-Adoption-Brief_FINALv2_0.pdf

Li, K. Y., Ng, S., McCullough, J., Zhu, Z., Kochner, K., & Ellimoottil, C. (2021). *Telehealth use in Michigan during COVID-19.* https://ihpi.umich.edu/sites/default/files/2021-03/0216_Primary-Care-Telehealth-Adoption-Brief_FINALv2_0.pdf: Institute for Healthcare Policy and Innovation - University of Michigan.

Lopez, T. (2020, Jul/Aug). Building Local Health Department COVID-19 Emergency and Risk Communications Capacity. *J Public Health Manag Pract, 26*(4), 384-386.

Stone, K. W., Kintziger, K. W., Jagger, M. A., & Horney, J. A. (2021, April). Public health workforce burnout in the COVID-19 response in the US. *Int J Environ Res Public Health*, 4369. doi:doi: 10.3390/ijerph18084369.

University of Michigan School of Public Health. (2020, October). *Michigan COVID-19 Recovery Surveillance Study.* Retrieved from University of Michigan School of Public Health Web site: https://sph.umich.edu/mi-cress/pdf/MI%20CReSS_First%20Data%20Report_Oct2020.pdf

World Health Organization . (2020). *Mental health and COVID-19*. Retrieved from World Health Organization Web site: https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/publications-and-technical-guidance/mental-health-and-covid-19

Zeltner, B. (2020, September 11). *Kids are missing critical windows for lead testing due to pandemic.* Retrieved from Kaiser Health News: khn.org/news/kids-are-missing-critical-windows-for-lead-testing-due-to-pandemic/.

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