Mpox Landscape Report

Environmental Scan & Promotion, Dissemination, and Advertising Findings

CAI

December 2025

Contents

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- City of Detroit Local Health Department
- Colorado Department of Public Health & Environment (CDPHE)
- Compass LGBTQ Community Health Center
- Evergreen Health - New York Regional Healthcare System
- Houston Department of Health
- Los Angeles County Department of Public Health
- Mississippi State Department of Health
- Neighbor Health – Massachusetts Health Center
- New York State Department of Health, AIDS Institute
- New York City Health Department
- Queer Kentucky – Kentucky Nonprofit
- Salt Lake Harm Reduction Project Nonprofit Organization
- Wyckoff Heights Medical – Brooklyn Medical Center

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Funding Statement

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Background

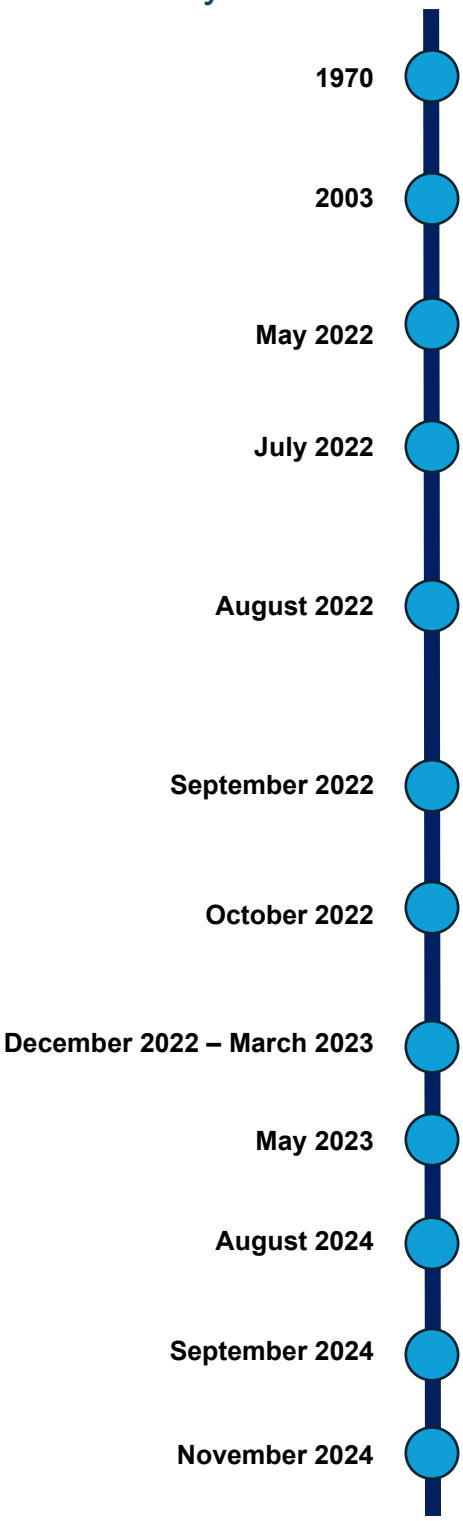
Mpox continues to spread in the United States, including the introduction of Clade 1 mpox cases (CDC, 2024). However, based on the latest published data from CDC, only 25% of the approximately two million people recommended to receive the vaccine have received both doses, while an additional 15% of those eligible have received only one of the two recommended doses (CDC, 2024). Vaccine coverage varies widely between jurisdictions for several reasons, including lower vaccine accessibility and awareness, fewer vaccine providers, lower vaccine confidence and demand, and concern about stigma. Public health agencies are encouraged, and have been supported, to continue to improve vaccine coverage for those at risk for mpox (CDC, 2024). Previous CDC-funded mpox activities conducted across 51 jurisdictions found that mpox vaccine uptake increased when incorporated into other clinical and sexual health services, such as receiving an STI test, HIV PrEP, or HIV care.

Given the syndemic* nature of the mpox outbreak, additional funds were granted to support the development of a mpox roadmap, a strategic guide that outlines how the health system can respond more effectively to mpox using a syndemic approach—by integrating services, addressing structural barriers, and ensuring sustained access to information, prevention, care, and support for priority populations. Activities for this funding included an environmental scan and assessment to identify existing resources and gaps and capture efforts that successfully increased vaccine awareness and uptake.

The timeline on **pg. 4** shows the key events that took place before, during, and after the mpox outbreak.

**A syndemic is defined as two or more diseases or health conditions clustered within in a population as a result of social, epidemiologic, or biologic factors which create conditions for clustering, increasing the health burdens of the affected population.*

Timeline and Key Events of the Mpox Outbreak



1970	First recorded human mpox case
2003	First U.S. outbreak of mpox
May 2022	First case in the U.S. confirmed in Boston, MA. Within weeks, mpox cases appear in multiple states.
July 2022	U.S. becomes epicenter of the outbreak. HHS announces the release of 780,000 doses of JYNNEOS vaccine from the Strategic National Stockpile. Due to limited quantities, there is a vaccine shortage. WHO declares Public Health Emergency of International Concern (PHEIC).
August 2022	HHS declares mpox a Federal Public Health Emergency (PHE) to increase funding. First U.S. death from mpox is in Texas, highlighting severity of the disease for people with HIV. August is the peak of the epidemic with the highest number of new cases during this period.
September 2022	Data in the U.S. shows the vaccine is effective at preventing infection and reducing severe outcomes. Rates of new infections start dropping.
October 2022	CDC reports outbreak is slowing, but mpox will continue to circulate at low levels in the U.S. Kaiser Family Foundation report highlights racial disparities in mpox case rates (e.g., Black individuals 5x more likely than white individuals to get mpox).
December 2022 – March 2023	Cases continue to decline, but disparities remain. Racial and ethnic disparities in case rates and vaccination persist.
May 2023	WHO lifts Public Health Emergency of International Concern (PHEIC) declaration.
August 2024	Association for Professionals in Infection Control and Epidemiology (APIC) Emerging Infectious Diseases Task Force issues updated Mpox Playbook to help IPs prepare in light of Global Health Emergency declared by WHO.
September 2024	CDC issues a Health Alert Network advisory on updated prevention strategies for mpox, including vaccinations, through targeted prevention efforts.
November 2024	First Clade 1 mpox cases reported in the U.S. JYNNEOS becomes commercially available.

Syndemic Approach

A syndemic is defined as a population-level clustering of social and health problems. The criteria of a syndemic include two or more diseases or health conditions clustered within a population as a result of social, epidemiologic, or biologic factors that create conditions for clustering. A syndemic approach to mpox prevention addresses interrelated health and social issues of related to mpox, such as co-infections with HIV or other STIs, and by addressing shared risk factors like substance use and unstable housing and structural drivers such as discrimination and access to health services. It integrates clinical care, social and other health services, and supportive interventions to reduce stigma, improve access to vaccination, and enhance prevention.

We applied a syndemic approach to our environmental scan to better understand mpox risk and burden and the interconnected health and social conditions that disproportionately affect populations at increased risk for mpox (Wright et al., 2016).

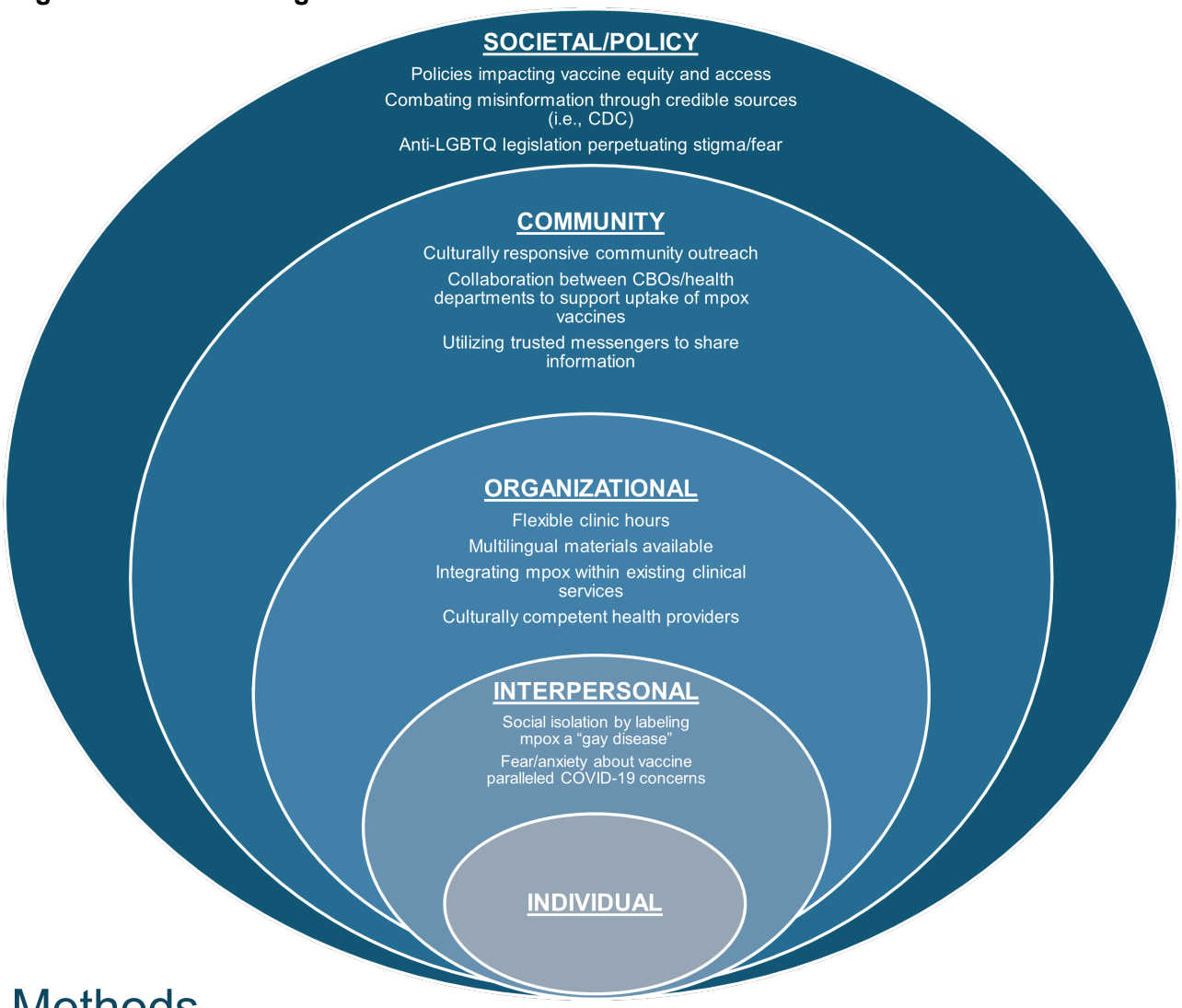
Social-Ecological Model Framework

Building on the syndemic approach, the Social-Ecological Model (SEM) is a multi-level framework that provides an additional lens for exploring how structural and health-related drivers of mpox operate at multiple levels of influence. The SEM is used to understand the dynamic interplay between individual, interpersonal, community, organizational, and societal factors that influence behavior and health outcomes (SAMHSA, 2019) . The SEM recognizes that effective public health strategies must address not only individual-level knowledge, attitudes, and behaviors but also the broader environmental, structural, and social determinants of health.

In the context of mpox prevention, and particularly efforts to increase awareness and uptake of vaccination services, the SEM provides a structured framework to identify barriers and strategies at each level of influence.

In **Figure 1**, the SEM is used to distill the complex interplay of factors influencing mpox prevention and vaccine uptake across multiple levels—from individual behaviors and interpersonal relationships to community norms, organizational practices, and broader policy and structural conditions.

Figure 1. Social-Ecological Model



Methods

Components of Environmental Scan

To achieve project goals, CAI conducted a comprehensive environmental scan to identify existing strategies, tools, and resources at the federal, regional, state, and local levels used to address mpox through a syndemic lens for populations at elevated risk.

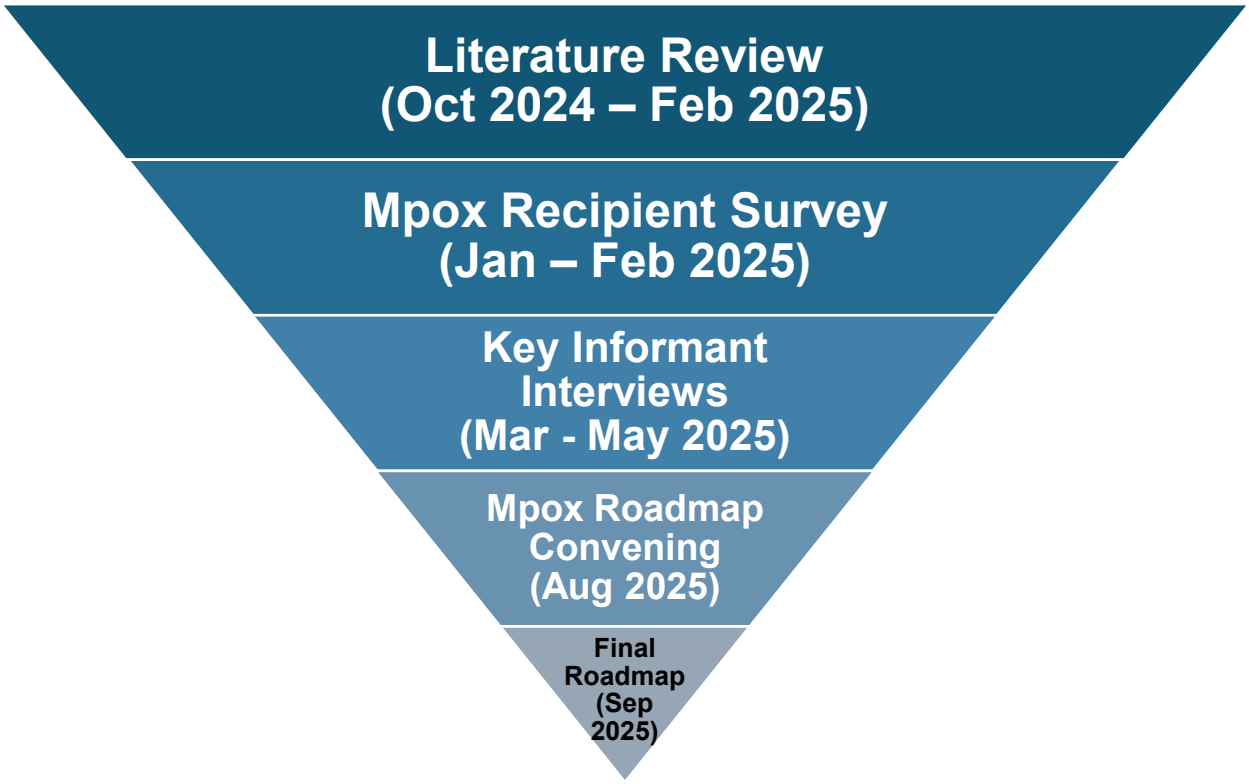
The scan consisted of three key components:

1) A comprehensive literature review, covering seven pre-determined key topic areas
2) A national survey administered to recipients of the CDC-funded Public Health Crisis Response, which provides awards to state and local governments to enhance the ability to respond to public health emergencies rapidly

3) Key informant interviews with community stakeholders and individuals with lived experience

The components and timeline of the environmental scan, including the Mpox Roadmap Convening and final draft of the roadmap, are depicted in **Figure 2**.

Figure 2. Environmental Scan Components



Literature Review

Between October 2024 and February 2025, we conducted a literature review of available peer-reviewed grey and white literature using academic databases (e.g., PubMed, Google Scholar, etc.) to identify existing resources and research on addressing mpox using a syndemic approach. All sources were uploaded and stored in Zotero, a cloud-based reference management system. Sources were tagged according to seven key topic areas, which included:

1) Policies, Structures, and Systems Impacting Vaccination Access
2) Evidence-Based and Innovative Practices for Mpox Vaccination
3) Mpox and Syndemics
4) Primary, Secondary, and Tertiary Prevention
5) Communication and Outreach Strategies
6) Provider Engagement and Education
7) Resource Development for Implementation and Evaluation

Mpox Recipient Survey

To complement the literature review and gain insight from the organization's perspective, we developed the mpox recipient survey in collaboration with the CDC from November 2024 to January 2025.

On January 23rd, 2025, the survey was disseminated across the U.S. by the CDC to the following lists:

- Mpox Crisis Cooperative Agreement recipients
- CDC Foundation (CDCF) community partners
- Partnering and Communicating Together (PACT) recipients

CAI tracked responses and sent reminder emails to recipients who had not completed the survey on three separate occasions before closing the survey in early February 2025.

Key Informant Interviews

Finally, to complement the first two phases of the environmental scan and gain a deeper understanding of the community and individual perspectives, we conducted a series of key informant interviews with community stakeholders. We recruited community leaders and people with lived experience to share their knowledge of and experience with mpox services, as well as the experiences of the communities they serve.

Interviews were conducted virtually over Zoom in May 2025. All interviewees provided verbal consent and received compensation for their participation.

Analysis

Data from the environmental scan, drawing on the three data sources and components described above, were analyzed on an ongoing basis. By triangulating findings from the literature review, survey responses, and qualitative interviews, we obtained a comprehensive understanding of the mpox prevention and response landscape and enhanced the overall validity and reliability of our findings.

First, the team systematically analyzed the findings from the literature review by reviewing the sources that were tagged by key topic area. These sources were then organized using an implementation science framework, the Consolidated Framework for Implementation Research (CFIR), according to broad domains associated with evidence-based implementation. This framework has been used often within healthcare settings. It was used to organize current strategies and gaps in prevention and treatment services using a syndemic approach in a systematic way.

Next, results from the mpox recipient survey were analyzed in Excel. Descriptive statistics were calculated by question, and all qualitative responses were collated. The team created data visualization for all questions, some of which are included in the Findings section of this report.

All key informant interviews were audio-recorded after receiving verbal consent from each participant. Recordings were sent to Transcription Panda, a professional transcription service, to be transcribed. The research team then completed qualitative analysis of the interviews. First, a codebook was developed in alignment with interview guide questions. Once the codebooks were finalized, two researchers completed coding the transcripts in MAXQDA, a qualitative data analysis software. Researchers communicated as needed to review coding progress and discuss emerging themes. Once qualitative coding was complete for all interviews, thematic analysis was conducted to identify key themes and organize the main findings from the interview transcripts.

The research team collaboratively synthesized findings from all three data sources. The results presented in the following pages reflect analysis of the literature review, survey data, and key informant interviews. To support interpretation and application, findings are organized according to levels of the Social-Ecological Model (SEM).

Findings

Literature Review Findings

After completing the literature review, we compiled 219 sources across all topic areas. This included 122 published articles, and 97 sources considered “grey literature” (e.g., webpages, toolkits, videos, conference papers, thesis papers, presentations, etc.) The review consisted primarily of literature from 2022 to the present day, with a handful of sources between 2012 and 2021. A breakdown of the sources by key topic area is included in Table 1.

Table 1. Literature Review Resources by Topic Area

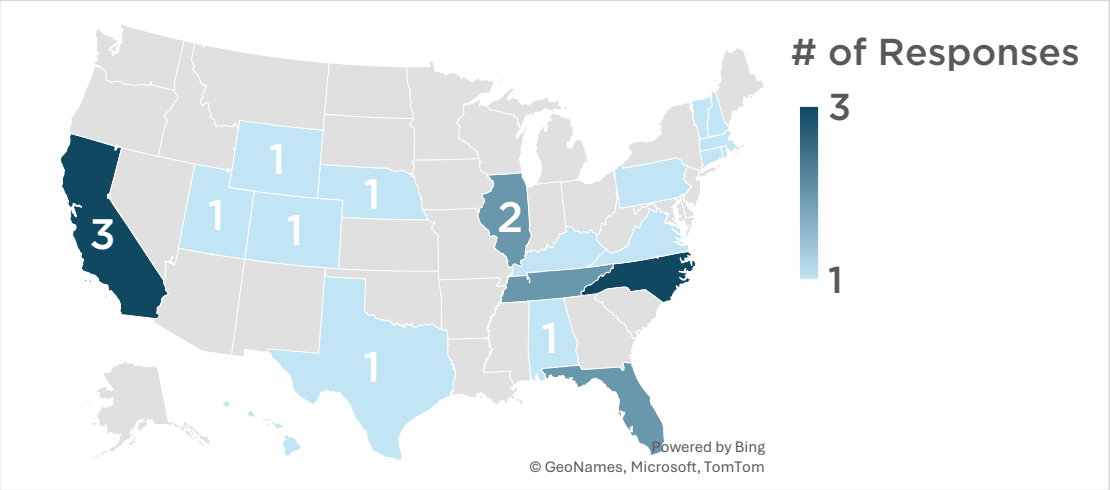
Topic Area	Number of Resources Found per Topic
Policies, Structures, and Systems Impacting Vaccination Access	18
Evidence-Based and Innovative Practices for Mpox Vaccination	15
Mpox and Syndemics	60
Primary, Secondary, and Tertiary Prevention	10
Communication and Outreach Strategies	27
Provider Engagement and Education	36
Resource Development for Implementation and Evaluation	109

Mpox Recipient Survey Findings

After closing the Mpox Recipient Survey in February 2025, we received a total of 29 unduplicated survey responses (response rate = 28%). Respondent organization type ranged between state health department (59%), community-based organization (24%), city/county

health department (14%), and university (1%). The geographic distribution of respondents is depicted in **Figure 3.**

Figure 3. Geographic Distribution of Mpox Recipient Survey Respondents (n=29)



Key Informant Interview Findings

We completed a total of nine community stakeholder interviews by the end of May 2025. Interviewees included social media influencers, community health workers, leaders in the LGBTQ+ community, and people with lived experience accessing mpox prevention services. Interviewees were geographically diverse and included people from all over the United States.

SEM Level 1: Societal/Policy

The public health landscape has changed significantly over the last three years since the start of the mpox outbreak. Since the initial response and substantial reduction in new cases, there has been a decline in the prioritization of providing mpox prevention services. This level includes information on the challenges and strategies for mpox prevention services influenced by broad societal factors, including structural systems, federal and local policies, state laws, and public health infrastructure. Findings suggest that funding remains a barrier to providing services, and messaging continues to play a significant role in supporting decision-making around receiving the mpox vaccine.

When the first case of mpox was discovered in the USA in May 2022, there were some public health preparations already in place. Jynneos was already FDA-approved in 2019 for mpox prevention for adults 18 years and older, and hundreds of thousands of the vaccines were already being stored in the Strategic National Stockpile. In May and June 2022, the U.S. Department of Health and Human Services (HHS) initially took a targeted approach based on the limited number of reported mpox cases at the time, with the belief that the outbreak could be contained with post-exposure prophylaxis (PEP) and contact tracing. HHS ordered 36,000 vaccines from the Strategic National Stockpile for May and a second order of 36,000 for June (Cahill, 2023). This proved insufficient to curb the outbreak. In July 2022, HHS received 300,000 doses of the vaccine. While this was an increase in number of doses, HHS was still unable to engage and provide vaccines to all priority populations, including men who have sex with men (MSM) in June, the first Pride month after the pandemic when many of the Pride events were in-person again (Cahill, 2023).

Similarly, the Laboratory Response Network (LRN), the national network of federal, state, and local public health laboratories designed for emergency preparedness, already had testing capacity for Ortho poxviruses, from decades of smallpox preparedness efforts (McQuiston et al., 2023). However, CDC maintained control over mpox testing, with recommendations to test only individuals with visible lesions or those who had been exposed. This strategy was to facilitate national surveillance and contact tracing, but it led to low testing rates and long waits for results (Cahill, 2023).

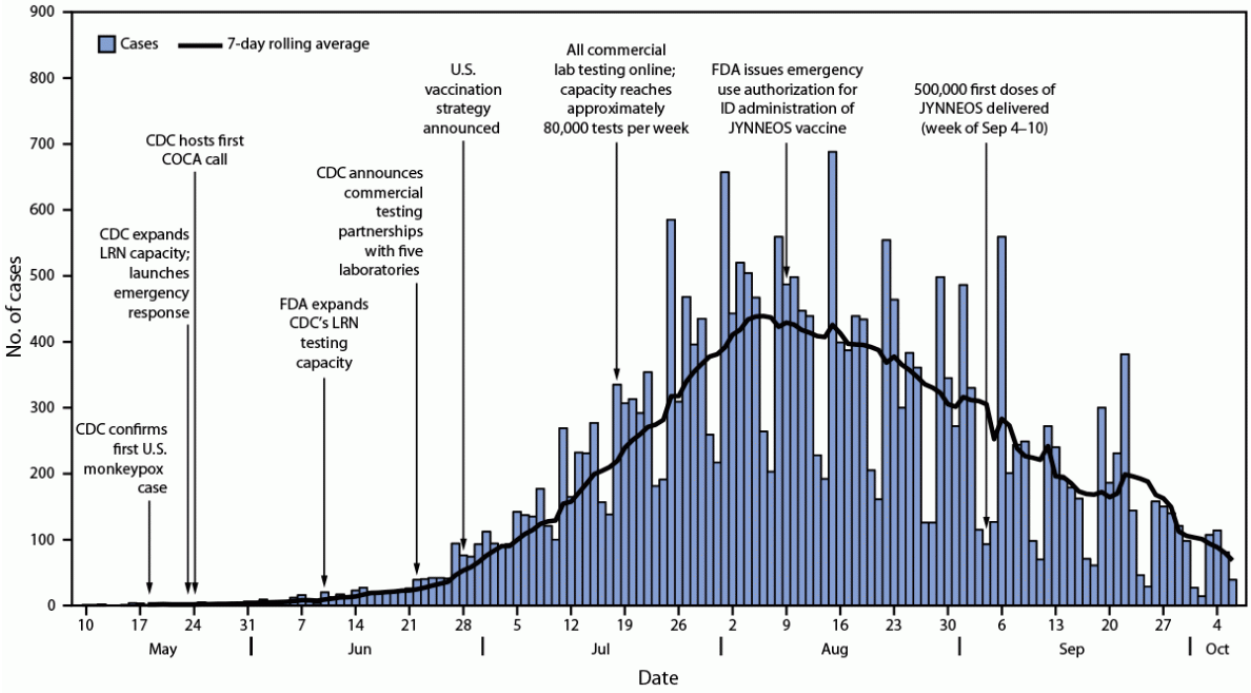
On June 28, 2022, HHS announced an enhanced nationwide mpox vaccination strategy to mitigate the spread. HHS distributed the mpox vaccines by prioritizing jurisdictions with the highest transmission and greatest need. Further, in August 2022, the FDA issued an Emergency Use Authorization (EUA) for JYNNEOS to increase vaccine supply. This allowed for intradermal injection using less vaccine per dose. The HHS Secretary declared mpox a public health emergency in the same month and appointed a White House National Monkeypox Response Coordinator and Deputy Coordinator, which allowed for broader use of EUAs for testing and treatment with TPOXX.

Racial and ethnic minority groups were disproportionately impacted by the higher incidence of cases and severe outcomes, and simultaneously underrepresented among those receiving vaccines (Kota, Hong, et al., 2023; McQuiston, 2023). To combat this inequity in the mpox vaccine rollout, the CDC created the Mpox Vaccine Equity Pilot Program to reach populations

most affected by mpox but less likely to be vaccinated (Bautista et al., 2023). This involved directly collaborating with organizations providing services to MSM and transgender women, implementing equity projects in unique nonclinical community settings and at venues frequented by MSM and transgender women, and by offering an array of services as part of mpox vaccination projects (Bautista et al., 2023).

With the implementation of these changes, August 2022 saw rates of new infections decline dramatically in the U.S. **(Figure 4).** The rate of vaccination was more equitable by race and ethnicity, though the rate of new infections was still disproportionately impacting Black and African American and Latino/Hispanic individuals compared to their proportion of the population. (Cahill, 2023; Kota, Chesson, et al., 2023).

Figure 4. Monkeypox cases* and public health response, by date†,§ — United States, May 17–October 6, 2022



Abbreviations: COCA = Clinician Outreach and Communication Activity; FDA = Food and Drug Administration; ID = intradermal; LRN = laboratory and response network.

* N = 26,384. Figure excludes one case for which information needed to calculate date is missing.

† Date is defined as the earliest date available among the following: 1) a positive laboratory test report date, 2) CDC call center reporting date, or 3) case data entry date into CDC's Data Collation and Integration for Public Health Event Responses platform.

§ Data since approximately September 25 are incomplete because of delays in reporting.

Note. *Image from Kava, C. M. (2022). Epidemiologic Features of the Monkeypox Outbreak and the Public Health Response—United States, May 17–October 6, 2022. MMWR. Morbidity and Mortality Weekly Report, 71.* https://doi.org/10.15585/mmwr.mm7145a4

Policies and Regulations

Policies and regulations have varied across the national, state, and local/community levels in the U.S. On a national level, CDC issued a Health Alert Network (HAN) Advisory in May 2022 to notify clinicians/health departments about the occurrence/spread/sexually associated human-to-human transmission of mpox (CDC, 2024).

States responded in different ways. Some states, such as New York, declared states of emergency to mobilize a centralized and coordinated response. The NY State Commissioner of Health also used the Imminent Threat to Public Health declaration to add mpox to the list of STIs, which local health departments diagnose, treat, and offer preventative services to those at risk of exposure, allowing minors to consent without parental authorization (Alvarez, 2023). Other states, such as Florida, had a decentralized approach with limited state involvement, leaving the counties and local health departments to respond, individually. Researchers also noted that anti-LGBT legislation in many jurisdictions created concerns about hostile environments, including within the clinical setting, stigma and underreporting of cases. (Alvarez, 2023).

"They said there was a breakout, and they blamed it a lot on the LGBTQ community. So that was a little scary for me."

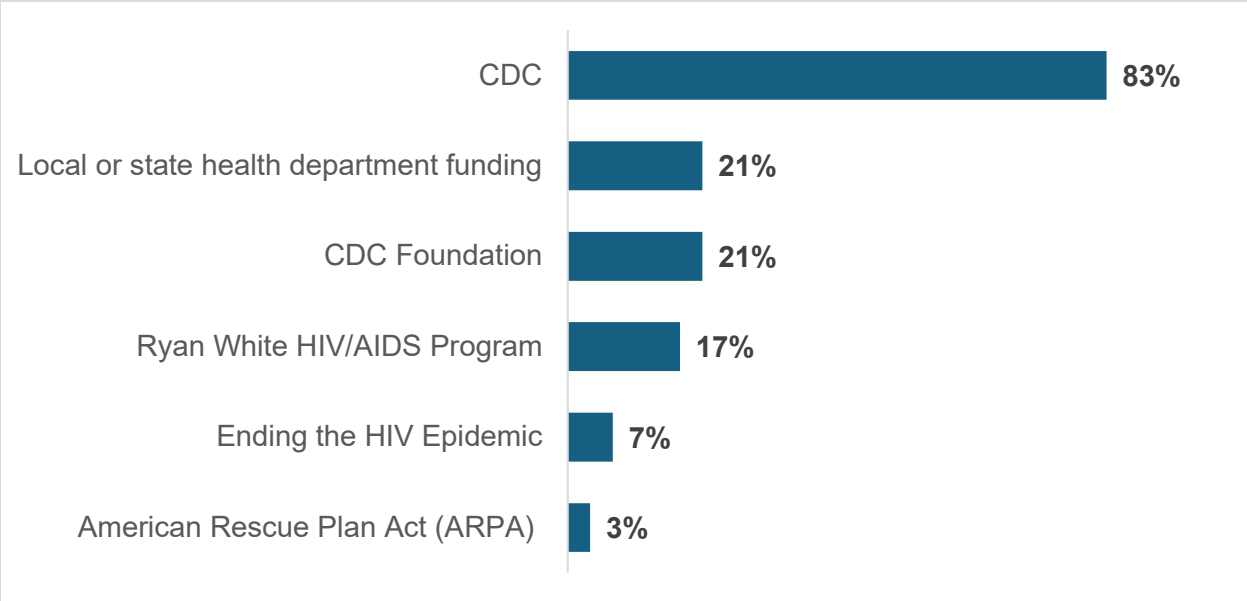
At the local/community level, oftentimes local health departments and community organizations were the frontline for service delivery, including information, vaccination, and testing, with the power to address social determinants of health (SDOH) through testing and vaccine policies (Alvarez, 2023).

While not strictly a policy objective, survey respondents stated that one of the key lessons they learned in an outbreak response was to involve subject matter experts, especially those involved in sexual health services, when providing mpox services. This was seen at the federal level, when the White House appointed a well-known public health expert with experience in improving access to sexual health services as the White House National Mpox Response Deputy Coordinator. Mobilizing subject matter experts can support efficient responses to an outbreak and involving them in communication strategies can help local and national agencies avoid missteps with priority populations. During this outbreak, sexual health subject matter experts were better able to provide nuanced and culturally appropriate information and guidance compared to subject matter experts in immunization or communicable diseases who had little or no experience working with the LGBTQ+ community. Relatedly, working with sexual health providers and integrating care within sexual health clinics was fundamental to scaling up vaccine services, especially in the first few months of the 2022 outbreak (Karmarkar et al., 2024).

Public Health Infrastructure

We asked recipients of the CDC-funded Public Health Crisis Response to share the different sources of funding they used for the provision of mpox services. A detailed breakdown of responses is shown in **Figure 5**.

Figure 5. Funding sources for mpox work (n=29)



The literature describes how there was a systemic inability to meet early vaccine demand (Green et al., 2025) and that early vaccine rationing led to confusion and inequity (Piccolo et al., 2023; WHO, 2023). Furthermore, risk-based allocation raised concerns over fairness and trust (Knight et al., 2022; Muncaster et al., 2024).

Some of the public health infrastructure challenges with providing mpox services that survey respondents reported included:

- Limited vaccination options for uninsured and underinsured individuals
- Burdensome vaccine billing and reimbursement
- Lack of stable and consistent funding for mpox

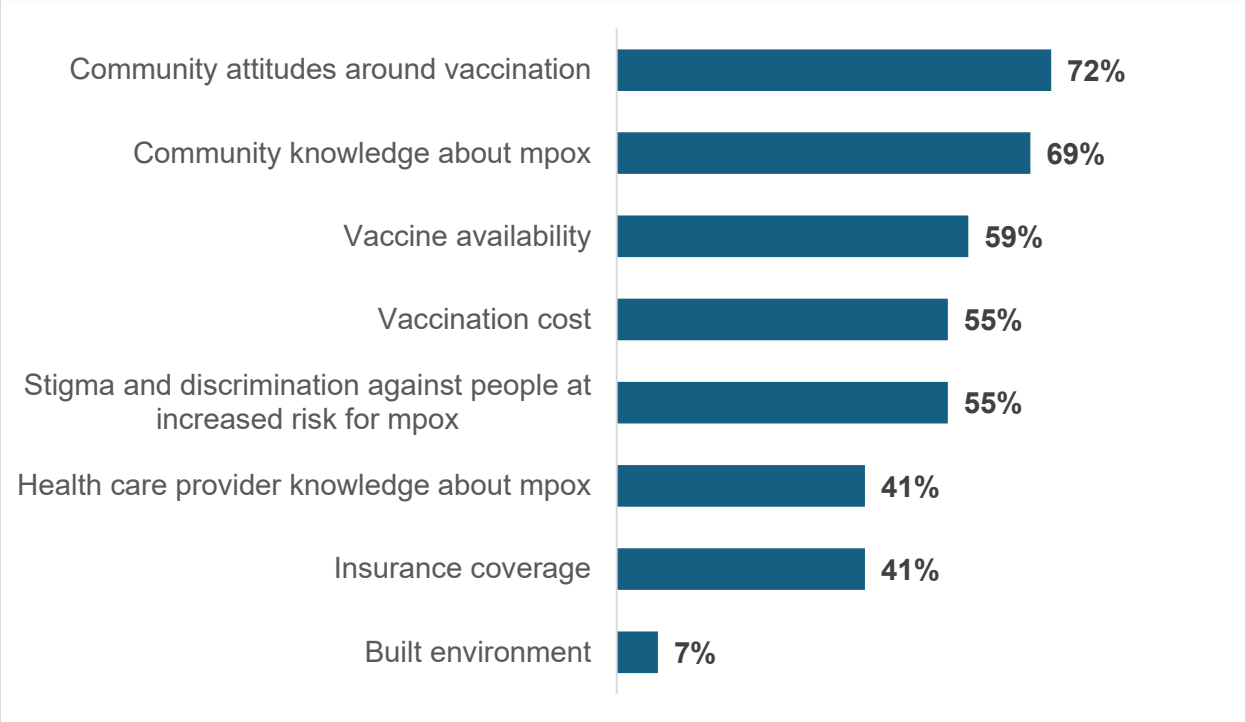
Perception of Mpox Risk and Vaccines

Survey respondents stated that the most significant barriers and challenges they experienced in their mpox-related work were due to community attitudes around vaccination (72%), such as concerns about the safety and effectiveness of the vaccine, and community knowledge about mpox (69%). In interviews, similar sentiments were made about community attitudes around vaccination and the perception of mpox in general. One interviewee shared a concern about being labeled a “public charge” and how this prevented them from engaging with vaccine and treatment services.

"So people always think that access to services going to put them in a place where they're going to be targeted, so they'd rather not to seek information or help because they might get caught, or they might… With this idea of public charge, it's like this idea that you are abusing the system. So people are scared to seek for information. So right now, the most important one is no trouble"

A detailed breakdown of the barriers and challenges survey respondents described is depicted in **Figure 6.**

Figure 6. Barriers and challenges to mpox work (n=29)



Interestingly, the vaccine was provided free to patients until April 2024, though many cited vaccine cost as a barrier, reminding public health officials of the importance of messaging about cost to improve vaccine uptake. Aside from the options in **Figure 6**, respondents noted other challenges, including reduced prioritization of mpox due to lower case counts, which led to a decreased perception of the need for the vaccine and a general sense that people were "over" mpox.

Social Determinants of Health

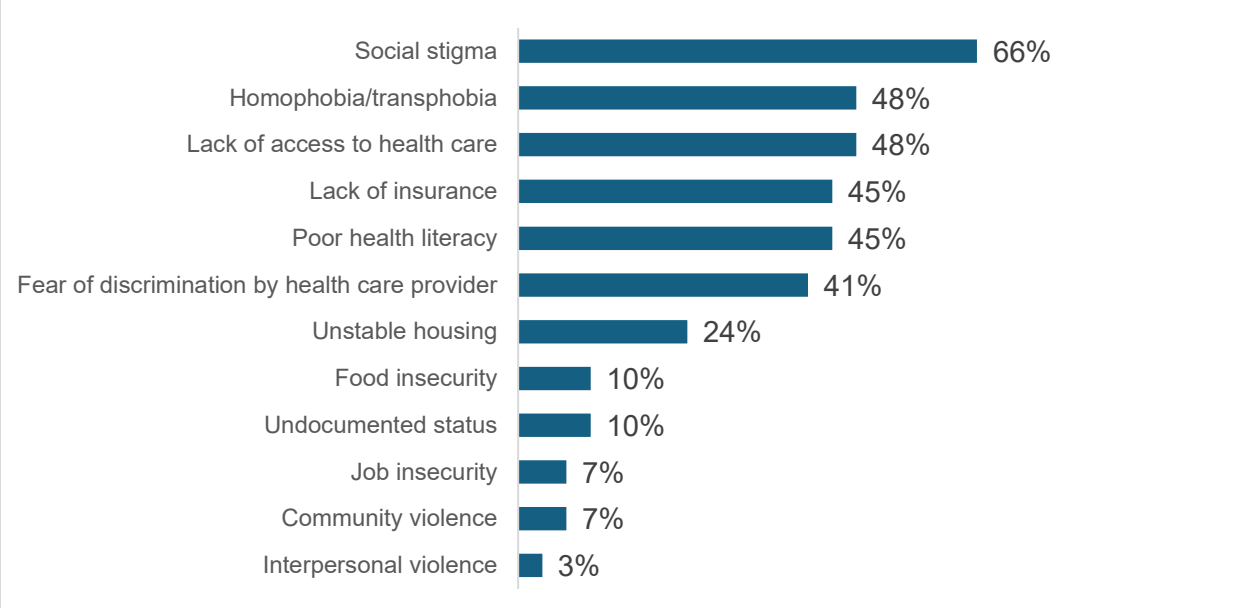
Other than factors such as stigma, fear, and medical mistrust affecting access to mpox services (discussed in more detail in the Organizational level), the most critical reason people avoided seeking services or did not have access to information about mpox was due to social

determinants of health. For one, the geographical distribution of vaccines was concentrated in white neighborhoods at the start of the outbreak—the limited number of vaccine sites created geographic and racial inequities. Mpox vaccination rates were reported to be lower in non-urban areas and among men in the South and Midwest, although a higher number of cases have been reported from the South (Muncaster et al., 2024). Research stated it was essential to expand vaccine availability geographically, including diversifying vaccination locations to include nonurban areas (Delaney et al., 2022).

> *"I'm sorry, but it was more white people in those lines. It was. I swear, it was the sexual health clinic here in that line, it was all white people. And then it was a few people of color in that line. And then I was like, "Okay, why is this happening?" And then talking to my colleagues because I know people were saying, "All those appointments that were booked, it was booked just for white folks." I was like, "Wow." So, what happened with the Latino community? What happened with Afro-American national community? Why are they not in those [lines]?"*

Nearly half of survey respondents (48%) stated that lack of access to health care was impacting mpox risk for clients seen at their organization. In comparison, 45% of respondents stated that lack of insurance was also a significant barrier. Additional social drivers of health impacting mpox risk are shown in **Figure 7.** One study found that patients with private insurance were more likely to be vaccinated for mpox (72%) than those who were uninsured (15%) or had Medicaid (6%) or Medicare (7%) (Alavian et al., 2023).

Figure 7. Common social drivers of health seen among clients receiving care (n=29)



"Also, right now I have a problem my insurance because I have $3,000 deductible. So that's preventing me to access care because it's a lot of money…. And other people, it's because they don't even have insurance. So, how you can access this without insurance, or with insurance, or what are you going to get?"

There were also significant racial and gender disparities in vaccination and mpox mortality rates. In a North Carolina health system where the majority of patients were Black, most patients vaccinated for mpox were white (Alavian et al., 2023). Despite a two-fold increase in mpox vaccine uptake between August and November 2022 in MSM, disparities in vaccine uptake were observed among Black participants (Grov et al., 2024). During the 2022 mpox outbreak, 90% of U.S. mpox-associated deaths occurred in Black men, whereas fewer than one in three mpox survivors were Black men. Nearly one quarter of decedents experienced delays of 3–7 weeks between diagnosis and treatment, and two patients did not receive any mpox-directed treatment (Riser et al., 2023).

Key informant interviewees also mentioned that housing, substance use, and language barriers affected access to care. Among unhoused people surveyed in San Francisco, only 16% reported that they received the mpox vaccination, and most only received one dose (Waddell et al., 2023). Substance use was also described as a barrier that may be preventing people from accessing services, with some key informant interviewees mentioning that youth in particular are being left out of community outreach and are not receiving the care they need.

"Drug use. People that use. Could stop them from getting vaccinated. Even being homeless. Sometimes, when you're homeless, you're out in those streets, and you're really bad, and you haven't taken a shower for days, who wants to go to the doctor? Nobody wants to sit next to you. You understand what I'm saying? So these are things that stops people from getting tested and getting the help that they need."

Additionally, most information available on mpox excluded non-English speakers, and the lack of culturally appropriate campaigns fueled misinformation in many Latinx communities.

"I know it was very hard specific for the Latino community to get the knowledge and go into and get the resources and get the vaccination, specific because in that time, it was everything in English."

Messaging and Public Discourse

Multiple research sources detailed messaging strategies and public discourse observed during the mpox outbreak to the present day. An ever-present theme in the literature was the stigmatizing language used in news outlets and social media at the start of the mpox outbreak, with long-lasting consequences. For example, labeling mpox as a sexually transmitted infection that predominantly affects MSM felt similar to labeling mpox as a "gay disease," which furthered stigma in the community (Hong, 2023; Muncaster et al., 2024; Owens & Hubach, 2022). Additionally, the original name "monkeypox" was considered stigmatizing language with references to monkeys (El Dine et al., 2024; Happi et al., 2022).

The focused targeting messaging toward the gay, bisexual, and other men who have sex with men (GBMSM) community was partly logistical. Initially, from May to June 2022, due to the limited supply, mpox vaccines had to be rationed, and public health departments prioritized distribution based on known exposure, and for people at highest risk for exposure. Most health departments focused on providing the mpox vaccine to MSM and individuals with known mpox exposure. This necessitated conversations about sexual activity, which was not a topic all public health professionals were accustomed to messaging, including clinicians who were uncomfortable obtaining sexual histories from patients, and clients who were uncomfortable in sharing this information with their providers.

Another challenge at the start of the outbreak was the rampant spread of misinformation and online hate speech, which largely went unchecked (Alvarez, 2023; Keum et al., 2023). Participants in the key informant interviews described a lack of clear mpox messaging from official sources, relying instead on personal networks and social media to share information. However, this did not always have promising results since people were circulating false information about treatment and immunity.

"Also, I heard a lot of people saying or creating this kind of word-of-mouth campaign that you didn't need the two vaccines, that with the first one you will be okay and protected and whatnot."

To reduce stigma in messaging and address misinformation, one paper shared that community stakeholders agreed that mpox messaging should be inclusive and risk should be communicated based on behavior, not sexual identity (Biesty et al., 2024). Other sources stated that media content should provide information about mpox transmission and prevention that goes beyond sexual transmission prevention and include clear options for vaccination sites (Owens & Hubach, 2022).

Literature findings and key informant interviewees mentioned several trusted sources of information, including the CDC website, which provided multiple resources on mpox for the general public, health care providers, and public health workers at the start of the outbreak. Other trusted sources include health providers, community-based organizations (CBO), and other community partners that patients regularly interact with and use. Vaccine information and

knowledge can be disseminated through popular opinion leaders, particularly those from racial, ethnic, gender, and sexual minority groups (Hong, 2023). People will listen to messages from trusted voices who are inclusive and non-discriminatory, and are centered on the patient experience (Biesty et al., 2024).

When asked what additional resources or support would help organizations improve the provision of mpox services, survey respondents stated:

- Support in ensuring funding, equitable distribution, and access to vaccines
- Information for providers on how to complete billing and reimbursement for vaccine administration
- Regular updates and guidance from CDC about changes in mpox, clade 1 and clade 2, vaccine availability, duration of immunity from infection/vaccination, etc.
- Improved data collection tools to track cases and improve response
- Integration of mpox efforts into HIV, STI and viral Hepatitis funding, including within the required state health plans

SEM Level 2: Community

The dissemination of information within communities during the mpox outbreak highlighted the social relationships and community norms that shape health behaviors and access to services. This level includes information on cultural norms and expectations within the LGBTQ+ community and characteristics of community spaces (e.g., neighborhoods, social media, workplaces, community-based organizations) that are associated with challenges and strategies for mpox prevention services. Findings suggest that social media plays a significant role in how communities disseminate and receive information, and building trust within communities through active outreach is key to facilitating uptake of mpox information and services.

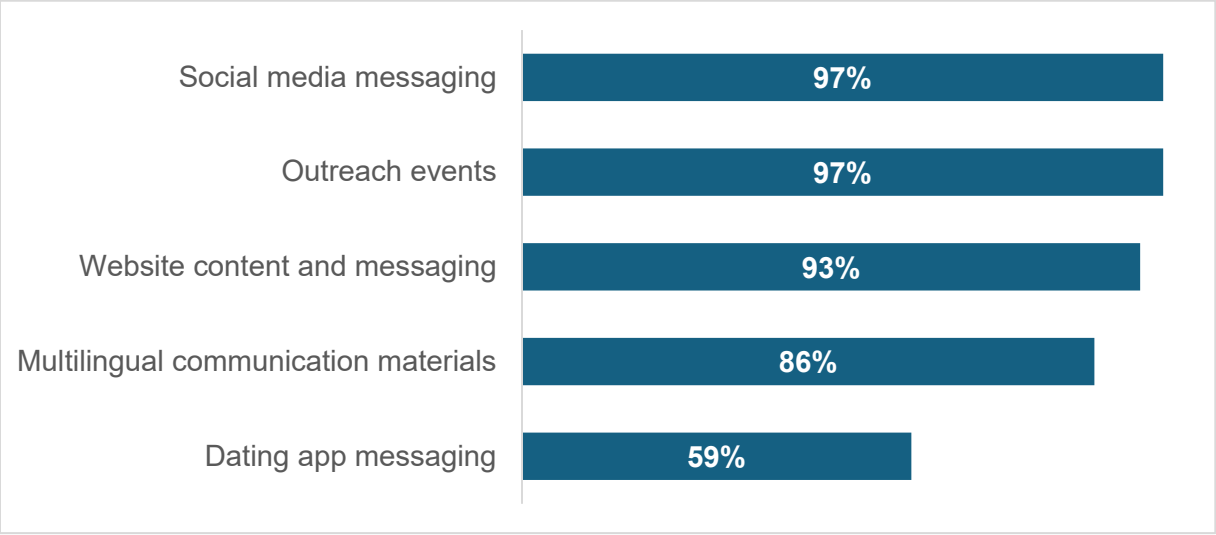
Social Media Use

Social media played a significant role in the spread of information during the mpox outbreak. In particular, GBMSM, including gay-identifying subject-matter experts from medical organizations and trusted government agencies, used public social media platforms for health information seeking and sharing during the outbreak (Hong, 2023). Reddit posts about mpox increased in May, late July, and early August 2022, corresponding to the first case identified in the U.S., when the WHO declared a global public health emergency, and when HHS declared a public health emergency in the U.S. GBMSM primarily used browser search bars to find general mpox information and vaccine locations, and texting, and gay dating apps to share vaccine updates, mpox information with people in the community (Cascalheira et al., 2023).

According to participants in the key informant interviews, traditional media and news reports initially sparked awareness, but social media amplified both accurate and inaccurate information. Social media platforms have the potential to promote equity by facilitating the dissemination of information. Still, some people do not trust it due to the spread of misinformation (Carpino et al., 2024). When used effectively, social media can be utilized to spread inclusive messaging about mpox (Biesty et al., 2024).

Other research underscored the importance of a comprehensive strategy using multiple channels of dissemination, such as websites, dating apps, and television ads or programs (Sekaran & Sekar, 2023). When asked which activities were conducted to increase mpox vaccine uptake and awareness, shown in **Figure 8,** 97% of survey respondents stated social media messaging and outreach events were key. However, 93% also indicated that website content messaging was a key activity, and 59% of respondents stated that dating apps were useful in disseminating information about mpox.

Figure 8. Communication strategies utilized in mpox work (n=29)



Community-Centered Outreach and Inclusivity

Some of the successes and challenges with improving mpox prevention services uptake were a result of community-centered outreach or a lack thereof. Literature review findings and survey results emphasized the importance of culturally responsive outreach. For example, in Michigan, the health department sought to host events in primarily African American locations, such as Detroit, to ensure access to the Black MSM community that was impacted the most by mpox. Two clinics expressed that LGBTQ+ staff helped facilitated connections to community venues and trusted community messengers, such as drag queens, event promoters, and DJs. Having LGBTQ+ staff at these events encouraged people to receive services (CDC, 2023). Other examples of engaging with the community included hosting vaccine clinics in bars, bathhouses, drag shows, and food banks (Centers for Disease Control and Prevention (CDC), 2023; Guilamo-Ramos et al., 2023; Hughes et al., 2024). At the start of the outbreak, images of lesions were depicted on Black skin. However, health departments and clinics began updating their library of images to include visuals of mpox on diverse skin and represent community priorities in research, as well as encourage inclusive messaging (Tan et al., 2024). The majority of survey respondents (93%) in **Figure 9** stated that community engagement and outreach were vital to increasing mpox vaccine access, awareness, and uptake. Key informants emphasized that community engagement and outreach is an effective and successful strategy, and should be considered, especially in political climates that are openly hostile or not supportive of priority populations. To reach these communities, it is essential to conduct outreach at community events and in spaces and with people that the priority population trusts.

"And this year, we have a community that is not going to come to the clinic, going to be afraid. We got to go out to the communities. With that outreach element, we can bring information, we can bring brochures, we can do workshops, we can take it to the churches, we can take it to the places where we think people is going to be open to the conversation. And then we talk about the different vaccines that exist, you know."

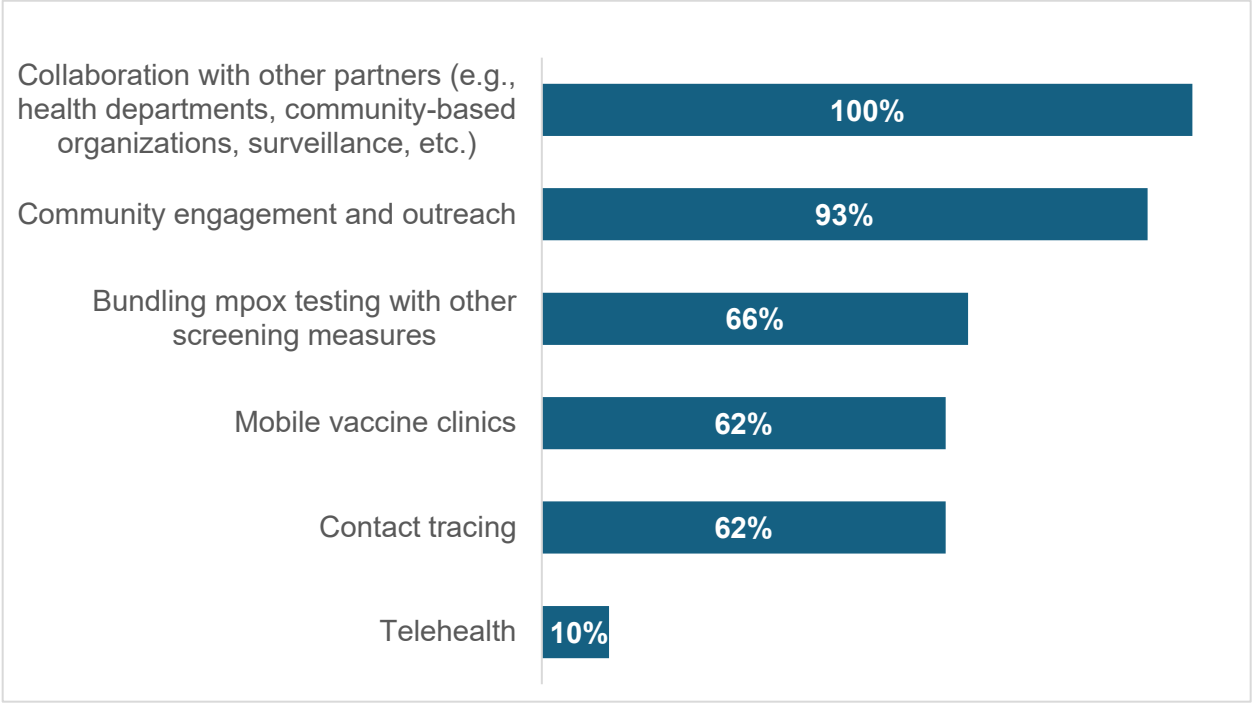
Multiple key informant interviewees expressed that incentives help to build trust with communities and improves uptake of mpox vaccines. This was a targeted effort used during the COVID-19 pandemic, and interviewees shared that they found it to be an effective strategy during the mpox outbreak.

"And then a lot of these insurance companies, they have incentive programs. Like you stay undetectable, we're going to give you this. You make all your appointments, you're going to get that. And I think that was another thing that encouraged a lot of people to get back into it. I don't think money is the answer to that, but I do believe that when you give people things or you treat people a certain way and you teach them, whether it's knowledge, whether it's, you know, all those things, I think you buy back into people… So, putting that information out there, but in return, have people come back to you."

Collaboration with Community Partners

Another strategy shared across multiple sources was the need to engage with community-based organizations and trusted messengers to increase awareness of mpox services. One study found that establishing meaningful relationships with priority populations who are health advocates, researchers, health care providers and community leaders contributed to controlling the outbreak (Cahill, 2023). It was known that mpox disproportionately affected Black/African American and Hispanic/Latinx MSM in Alameda County. The Alameda County Public Health Department responded by partnering with local health care providers who serve those communities , and ensured that persons with mpox received TPOXX treatment when needed (Ouyang et al., 2024). This finding aligns with the survey results, where 100% of respondents identified collaboration with other partners as a key strategy for increasing mpox vaccine uptake (**Figure 9**). Some health departments even directly funded CBOs to support vaccination activities. Other strategies shared by survey respondents included providing information via LGBTQ+ tailored news outlets, offering giveaways and gifts such as buttons, stickers, and posters at events, and conducting inclusive outreach through radio and streaming service messaging (e.g., Apple podcasts, iHeartRadio, Spotify).

Figure 9. Innovative strategies utilized in mpox work (n=29)



When asked how CBOs could improve outreach in the community, key informant interviewees stated CBOs need to be present in areas where LGBTQ+ populations congregate, such as the ballroom scene, Pride events, LGBTQ+ bars and parties, as well as place advertisements in public areas to reduce stigma. They also suggested creating partnerships with content creators and influencers to help normalize the promotion of mpox services, similar to how content creators promoted vaccines during the COVID-19 pandemic. They noted that the information should include what people are curious about, including the effectiveness of the vaccine, and any notes on the safety and side effects of getting the vaccine.

> *"We need influencers, people who people follow to talk about this thing. And not necessarily from the perspective of like, "Oh my God, you're going to die if you don't do this," but more like, "Okay, this is what it is and this is how it works, and if you don't..." Not necessarily if, but like, "These are the consequences of."*

Communication Gaps and Limitations

While the findings from the literature and survey show that mpox is still a cause for concern, multiple key informant interviewees stated they felt as if mpox "disappeared" from public discourse. At the start of the outbreak, they were seeing a lot on social media and mentioned

that dating apps had normalized the disclosure of vaccination status in profile fields. However, after a while, there was a lack of clear mpox messaging, and people felt like their healthcare providers rarely discussed mpox. Since they were not hearing about it, they no longer felt mpox was a concern. This aligns with survey findings, in which 69% (shown in **Figure 6**) of respondents stated community knowledge of mpox has been a barrier to receipt of mpox services including vaccine uptake.

"…but the thing is, people don't talk about it no more. People, they don't talk no more about it. I think it's something that happened one year and then [disappeared]."

This has led some people to avoid speaking about mpox, but many believe that information about mpox should still be provided through increased advertising and outreach activities.

"Do like how they do on train stations. I see HIV and PrEP ads from train stations. Make sure that these doctors ask, "Oh, have you had your monkeypox vaccine?" Make sure they ask these questions…"

SEM Level 3: Organizational

The 2022 mpox outbreak presented a critical test for public health systems across the U.S., particularly where health service delivery, communication, and community engagement intersect at the organizational level. This level includes information on the challenges and strategies for mpox services related to healthcare systems, clinics, and service providers. Findings suggest that these organizations played a central role in addressing structural barriers, integrating mpox services into other health services, and building trust within communities affected by mpox.

Service Delivery and Integration

Community level organizations played a central role in delivering mpox-related services, including information and education, service referrals, testing, and vaccination. Local health departments, CBOs, and sexual health clinics were often the first point of contact for many individuals seeking mpox services or individuals considered at risk for contracting mpox (Karmarkar et al., 2024). Being at a more local level, these groups could reach out to specific communities, address SDOH, create and leverage partnerships, address misinformation, and encourage vaccination (Alvarez, 2023). Among service providers responding to the survey, 66% of organizations (shown above in **Figure 9)** reported bundling mpox testing with other screening measures as an innovative strategy to increase uptake of mpox prevention services. Specifically, many of these organizations successfully integrated mpox services into their existing sexual health and harm reduction programs to not single out mpox but to offer and provide mpox services in addition to other relevant sexual health services (i.e., HIV prevention and treatment, STI screening and treatment, etc.).

Conversely, mpox vaccination centers could provide opportunities for sexual health services such as PrEP services (Ogbuagu et al., 2023). Survey respondents demonstrated the importance of treating co-occurring health conditions by reporting that the most common co-occurring health conditions seen among clients at risk for mpox exposure were HIV (76%), syphilis (55%), gonorrhea, and chlamydia (45%), seen in **Figure 10**. Thus, using established sexual health care systems provided a natural entry point for patients to access mpox services. (Daskalakis et al., 2022). Key informant interviewees supported this syndemic strategy, as many praised these types of organizations as “one-stop shops,” and agreed that integrating mpox services with existing clinical services is logical and efficient.

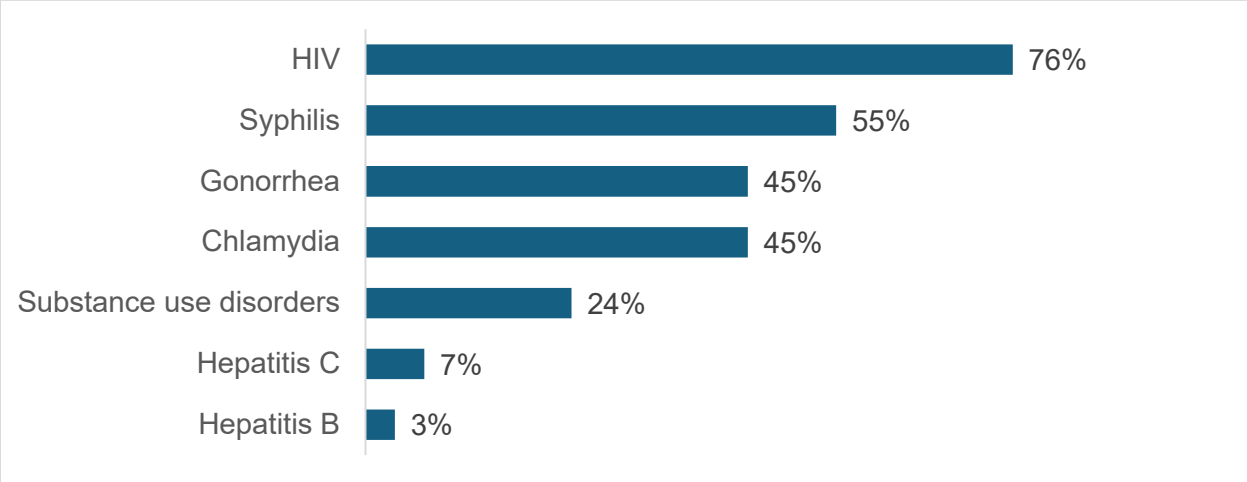
“Right now, people love the one-stop shop. If they go to their doctors and they can get their PrEP, their doxy PEP, their primary care, their vaccine, their condoms, their lube, their mental health, their harm reduction, everything they need, it's going to make it easier and that's the place they trust. If that's where they trust, go ahead and give it an applause and continue to feed this source of health because if this is being effective, then this means it's working for our people.”

Additionally, they acknowledged that providers providing mpox information during routine visits demonstrated that they cared for their patients.

> *"But you're giving people the opportunity, one, to want to know about it and see if they're comfortable with getting it. I think having it done right there at that very moment shows that you do care. You didn't just let me walk out the door without the information. You didn't just let me walk out the door, not letting me know that this is something that I could have received….so, having somebody say something to me right then and there will make it a lot easier."*

Figure 10. Co-occurring health conditions seen among clients receiving care (n=29)

Note: The figure below shares data on the most common co-occurring health conditions seen among clients receiving care from 29 different organizations (not 29 clients).



However, there were still barriers to service delivery and integration of mpox services. For example, some organizations that initially provided mpox testing and vaccination services stopped due to decreased demand and the availability of commercial services, potentially leaving gaps in access. While integration with existing services was widely supported, it was not universally implemented. Some clinics did not proactively offer mpox vaccines, missing opportunities for syndemic care. Finally, early requirements to disclose sexual behavior or HIV status created barriers and discouraged some individuals from seeking vaccination.

Access and Health Equity

Access to mpox services was shaped by different logistical, structural, and social factors. Initially, two of the largest logistical accessibility issues were limited vaccine appointments and vaccine availability (Piccolo et al., 2023). Among survey respondents, only 62% of organizations said they provide or used to provide mpox testing services or referrals for mpox testing. Vaccine services were slightly lower, with only 59% of organizations saying they provide or used to provide mpox vaccine services. Among organizations that previously provided mpox testing

and/or vaccine services but no longer do, the most common reasons cited were decreased demand for testing and/or vaccines, as well as limited availability due to the commercialization of the vaccine. Additional barriers included limited clinic hours, lack of transportation, and web-based scheduling systems that were not accessible to individuals without devices or internet service to use them (Green et al., 2024; Piccolo et al., 2023). The mpox vaccine was initially more accessible in predominantly white neighborhoods across the country, contributing to inequities in timely vaccine access and requiring lengthy travel for many community members seeking services (Cahill, 2023).

To address these barriers, several service providers found that non-standard hours (evenings and weekends) increased vaccine uptake. Michigan also found that non-traditional hours helped to reduce racial disparities for African American/Black individuals (Centers for Disease Control and Prevention (CDC), 2023). Service providers also found that offering mobile clinics and pop-up events in popular locations (e.g., bathhouses, ballroom events) helped increase uptake and reduce disparities. Specifically, research demonstrated that mobile vaccination events in locations frequented by at-risk populations decreased racial disparities in vaccination over time (Bakshi et al., 2024). Reliance on online platforms for scheduling and information sharing often exclude individuals without consistent internet access or low technology literacy. In response, some health centers and clinics, such as NYC H+H, were able to implement alternative methods of service booking, like hotlines (Piccolo et al., 2023).

Organizations implemented various strategies to reduce disparities, account for various social determinants of health, and improve equity. Multiple barriers impeded mpox vaccine uptake, particularly among historically marginalized populations. Medical mistrust was a particularly salient barrier among marginalized populations, as it was found to contribute to higher vaccine hesitancy, especially among people of color and the LBGTQ+ community (Cahill, 2023; Guilamo-Ramos et al., 2023). Research also showed that vaccine resistance among Black MSM was linked to medical abuses and exploitation of Black people (Turpin et al., 2023). In a paper studying COVID-19 vaccination hesitancy among LGBTQIA+ populations, their reasons for hesitancy included concerns about discrimination, social stigma, inequitable access to healthcare, and lack of trust in medical workers (Balaji et al., 2023).

“I think this culture of "Take care of yourself," that is not because we don't want to, it's because the system never helps us to advocate for ourselves. I think it's easy for a white person to just go about and understand that they're going to get what they need. I don't think that is the reality for the brown communities….The brown communities always hesitate to seek for help because they don't think they're going to be heard, or they're going to get exactly what everybody else is getting. So people don't necessarily trust the systems.”

This theme of medical mistrust contributing to vaccine hesitancy during the mpox outbreak subsisted, with some interviewees mentioning that they have had to overcome that lack of trust to seek mpox prevention services.

“And now I got to learn how to trust in increments now. I think I've had so many bad experiences with going to the hospitals or dealing with a certain provider or a certain nurse or somebody at the care facilities, to where it's a little bit hard to trust.”

However, for others, they felt comfortable seeking care because they felt safe and welcome at their inclusive clinic. This is a key facilitator in combating medical mistrust and supporting community members who have not always received culturally competent medical care.

“I think I'm talking about my privilege because I'm going to the clinic. It's a clinic for LGBT community, so as soon I come in, I feel safe. I feel very comfortable to talk to my providers. That's where I receive my care all the time.”

In addition to medical mistrust, information barriers were also at play. This included the lack of culturally appropriate public health campaigns, exclusion of non-English speakers, and unclear eligibility criteria, which in some cases contributed to stigma. Additional structural and social determinants of health further complicated access, as individuals facing unmet basic needs (e.g. unstable housing, food insecurity), lack of insurance, immigration-related concerns, and inflexible clinic hours often deprioritized vaccination. Additionally, some healthcare providers did not proactively offer the vaccine, limiting opportunities for engagement.

“When I deal with the members, I ask them, "Do you need transportation there and back?" But it's not they need transportation there and back. A lot of them don't want the services. They're going through situations in their life at the moment, so they feel that their health is not important right now.”

Completing the second dose presented its own set of challenges, including transportation difficulties, misinformation (i.e., not knowing a second dose was needed), and inconsistencies with health information exchange when clients sought their second dose from a different clinic. Some individuals who received the first dose were unaware that a second dose was needed to complete the series or were confused about the timing. Furthermore, some providers reported difficulty obtaining records of the first dose from other organizations when clients sought their second dose elsewhere. However, certain strategies facilitated follow-through: scheduling the

second dose during the initial visit and ensuring providers demonstrated genuine concern were both cited as effective by key informant interviewees. Stigma related to mpox, sexuality, and HIV status remained a significant barrier to care, but organizations addressed this through inclusive practices such as co-locating mpox and COVID-19 vaccinations to reduce visibility-related stigma and removing requirements to disclose sexual behavior or HIV status—an approach that notably increased vaccine uptake among Black patients (CDC, 2023; Tan et al., 2024). The presence of LGBTQ+ healthcare staff also played a key role in building trust and improving patient engagement.

Communication and Outreach

Effective communication and outreach were critical for increasing awareness and uptake of mpox services, particularly among diverse and underserved populations. Organizations that employed bilingual staff and developed materials in multiple languages were better equipped to reach non-English-speaking communities. However, early in the response to the mpox outbreak, access to testing was limited by several restrictions, and treatment paperwork was only available in English. These challenges were compounded by vaccine supply issues, including mismanagement, miscalculation of need, and delays due to FDA inspections, which contributed to disparities in vaccine distribution across communities (Cahill, 2023). Outreach strategies that proved successful included attending community events, advertising in public spaces, and leveraging trusted sources such as LGBTQ-friendly clinics and HIV specialists. Additionally, vaccine pop-up clinics hosted in culturally relevant locations—such as bathhouses—and mobile van offerings in rural and high-risk areas (e.g., locations where people engage in sex work) helped meet people where they were. (Tan et al., 2024; COP, CDC, 2023). In Washington, D.C., clinics were initially launched in the most impacted wards and later expanded to other areas, eventually removing geographic restrictions to accommodate transient populations such as college students (CDC, 2023). These adaptive and community-centered approaches were essential in addressing early access barriers and promoting equity in the mpox response.

Training and Capacity Building

Training and educational opportunities for health care providers and staff helped to ensure effective delivery of mpox services. Health care providers expressed discomfort discussing sexual health with patients, particularly clinicians practicing outside of a strictly sexual health care setting. One study found that up to 40% of providers reported discomfort asking about their patients' sexual health, and 23% expressed discomfort when patients inquire about their sexual health (NCSH, 2025). Providers also noted inadequate or inconsistent mpox training and education. Given these barriers, many health centers and clinics engaged in capacity building and training around mpox.

From survey responses, approaches appeared to vary depending on the healthcare setting. State health departments reported hosting statewide trainings and webinars, forming multi-department work groups, and providing specialized training for Disease Intervention Specialists (DIS). City and county health departments reported providing trainings on mpox testing and patient education, hosting "vaccine hours" to communicate data on vaccine trends, and creating county-wide vaccine provider webpages. Finally, CBOs reported providing staff education on

mpox transmission, offering cultural competency training with emphasis on trauma-informed approaches, and focusing on utilizing and engaging with community partnerships. These various forms of capacity building and training served as facilitators at the organization level. Additional facilitators included the presence of LGBTQ+ healthcare staff (CDC, 2023), bilingual or multilingual staff, and mpox information in multiple languages. The presence of these staff members and materials was often credited in the literature and by stakeholder interviewees as improving patient trust. According to participants in key informant interviews, the presence of mpox materials in various healthcare practice settings has improved patient awareness and access to mpox information and services.

"We had to train specifically for how to talk to the LGBT community to tell them you need to ask about their pronouns, you need to ask about their preferred name. You have to be careful with these specific questions."

Social Stigma

When asked about the most common challenges or barriers organizations experienced in their mpox-related work (**Figure 6)**, more than half of survey respondents (55%) stated that the challenges they faced were stigma and discrimination against people at increased risk for mpox. Additionally, the majority of respondents (66%) stated that social stigma was one of the most common conditions impacting mpox risk for clients seen at their organizations, shown in **Figure 7**.

Although there was much information shared on the effect of stigma on health-seeking behaviors for people, there was also reassuring and positive information on the efforts to combat stigma. Public health efforts to slow mpox transmission among MSM require addressing homophobia, stigma, and discrimination (Philpott et al., 2022). At the start, for example, in Oregon, after engaging with partners in the community, they determined it was better not to focus on sexual behavior in their eligibility and instead used the following criteria: 1) Have you been in contact with someone with mpox, 2) Do you have someone in your community with mpox. Once clinics could provide the vaccine without eligibility barriers, all clinics saw participation of women and African Americans increase (CDC, 2023). Additionally, they administered the vaccine in the back/shoulder area, not just the forearm, to hide the "wheel" under clothing (CDC, 2023). Providing information to the whole community and not singling a particular community out would also help a great deal to build trust and de-stigmatize mpox, according to many key informant interviewees.

“Well, that one particular place that I know of and the other places, they're doing outreach. You're actually letting people in the community see who you are and that you actually care about the community and passing out the information. Whether somebody takes it or not, they know the presence is there.”

SEM Level 4: Interpersonal

Reactions to mpox and the uptake of mpox services were highly influenced by individual's social networks, peers, chosen family, sexual partners, and other relationships. This level includes information on how trust among people impacted responses to mpox, the role of trusted messengers in the promotion of mpox prevention and the vaccine, and how peer advocacy served as a vital strategy for the response to mpox. Findings suggest that building trust within affected communities and considering strategies to combat stigma were essential to the mpox response.

Trust, Trusted Messengers, and Peer Advocacy

Interpersonal dynamics and relationships played a significant role in shaping mpox vaccine perceptions and behaviors. In the early days of the outbreak, before vaccines were available, GBMSM shared mpox information and prevention strategies within their networks, suggesting that this strategy helped slow the spread of mpox (Delaney et al., 2022). Examples of behavior changes as part of this strategy to reduce the spread of mpox included reducing the number of sex partners, one-time sexual encounters, and use of dating apps. Trust in community-based organizations and the use of popular opinion leaders from LGBTQ+ communities were identified as effective strategies for promoting vaccine uptake and disseminating accurate information (Biesty et al., 2024; Hong, 2023). Individuals who were more socially connected within GBMSM communities were also more likely to receive the vaccine, highlighting the influence of peer networks (Gilbert et al., 2023). However, stigma within social circles and online spaces, particularly among MSM and sexual gender minority (SGM)individuals, contributed to feelings of isolation and hesitancy (Keum et al., 2023; Owens & Hubach, 2022). Community stakeholders echoed these concerns, noting that stigma, especially when intertwined with HIV and sexuality, magnified social exclusion. One stakeholder shared:

"People were scared to take it. They were saying, 'Oh, it's just like with the coronavirus vaccine.' People were scared that they're putting something in your system."

This illustrates how past traumas and lingering concerns from the COVID-19 pandemic compounded mistrust in public health messaging. While some individuals who perceived themselves at risk were motivated to get vaccinated quickly, others reported not receiving the vaccine and not knowing anyone who had, suggesting a lack of visible peer modeling in certain networks. As one stakeholder emphasized:

"When I put my face [on social media] it's because people, they can get more related. They can see it's an actual person who is giving you the information instead [of] a model with just information,"

This underscores the importance of relatable, authentic messengers in building trust and engagement.

SEM Level 5: Individual

The individual behavior and choices affecting mpox vaccine uptake and awareness were influenced by personal factors, as well as the external influences from the societal/policy, community, organizational, and interpersonal levels. This level includes findings from the community stakeholder interviews, which describe the variation in knowledge, attitudes, and behaviors that either supported or hindered a person's ability to seek information on mpox or receive mpox prevention services.

Knowledge of Mpox and Related Services

Stakeholders felt messaging from official sources was not clear or direct at the start of the outbreak and instead relied on personal networks and social media to receive information. This occasionally had consequences, since people online were known to be circulating false information about treatment and immunity. Over time, stakeholders felt that mpox "disappeared" from public discourse, with some stating that mpox never came up in conversation with friends or family members. This was further validated by some healthcare providers rarely discussing mpox.

Stakeholders noted that much of the messaging emphasized and targeted GBMSM, with very little broader messaging to other groups who may be at risk, such as teens and young adults and immigrant populations, raising concerns about stigmatization of the LBTQ+ communities. When asked to share what education would be useful for the community, stakeholders mentioned the need for clear, hopeful messaging that included practical and actionable information about symptoms, testing, and vaccination. They stated that outreach should include bold, visible campaigns in high-traffic and culturally relevant spaces like Pride events and the ballroom scene, to reduce stigma and reach people where they are.

"I want to know what's going to happen to me. I want to know, is this going to affect me? Is it going to affect others? Is it contagious? If I touch somebody, will I get it?"

Attitudes Related to Mpox Vaccines

Stakeholders shared mixed thoughts and feelings about receiving the mpox vaccine. For some, their perceived risk from sexual behaviors increased their motivation to seek the vaccine. Others felt they needed to learn more about the vaccine's side effects, especially if they had a compromised immune system. Unfortunately, many stakeholders described the parallels they experienced during the COVID-19 pandemic and the HIV/AIDS crisis, and how this exacerbated their feelings of fear and anxiety when receiving services. For example, limited appointment availability for vaccines increased anxiety, similar to the COVID-19 vaccine situation. Some stakeholders also described that the overlap of the COVID and mpox vaccines created confusion, with some people experiencing doubt about receiving the vaccine. In addition, stigma

reinforced by associations with the gay community and prior experiences with the HIV/AIDS crisis increased fear for some when seeking mpox prevention services.

Experience of Isolation and Stigma Seeking Mpox Services

A consistent theme across the interviews was the feelings of isolation and stigma related to seeking mpox prevention services. People shared that fear of judgment, misinformation about transmission, and bias from healthcare providers discouraged engagement with care. When speaking to community stakeholders, they shared that fear manifested itself in different ways when seeking care. For some, there was heightened fear by the framing of mpox as an LGBTQ+ community issue. Members of the LGBTQ+ community felt "blamed" for the spread of mpox, which caused anxiety and isolation for those accessing services or seeking information about mpox. There was also fear about receiving the mpox vaccine due to uncertainty about vaccine effects, and lack of knowledge about the transmission of mpox. This fear was compounded by the messaging on social media and through the news, which included graphic videos of people showing the symptoms on their bodies and sharing their negative experiences receiving care.

"And then the sharing of the TikTok content and them doing the personal story time and just saying the bad parts and how it ended bad and stuff. So, that's pretty much been just putting a fear in a lot of people. Especially me personally. I don't like seeing things like that. So, it kind of makes me hesitant."

These feelings of fear and isolation also often stemmed from previous traumatic experiences seeking healthcare. For some, the feelings of isolation mirrored the HIV/AIDS crisis, and some GBMSM felt similar discrimination as to the period of time when HIV/AIDS was labeled as "gay disease" (Hong, 2023). Since the initial messaging around mpox was linked to gay men, this reinforced the stigma. Historically, this can cause people to hide diseases, which can cause them to spread in an untraceable manner and worsen outbreaks (Sekaran & Sekar, 2023). Research from the literature indicated that fear of social rejection due to an mpox diagnosis is an important factor to consider when developing vaccine-uptake prevention and intervention strategies tailored to the needs of sexual and gender minorities (Curtis et al., 2023; Owens & Hubach, 2022).

"And I was a little overwhelmed, I'll tell you that, because there's been so many vaccinations like COVID and the flu and all these other things that we have to get, and we don't know the effects that it have on us… We don't know what a lot of these vaccines are doing, and I'm already a person living with HIV, and I take medications every day."

In addition, mpox is affected by stigmatization and discrimination related to visible skin disease and racist stereotypes (WHO, 2023). Key informant interviewees shared that this fear of judgment magnified feelings of isolation. Among Black MSM in the DMV area, those living in Maryland had higher anticipated mpox stigma than D.C. or Virginia (Turpin et al., 2023). Those with greater mpox stigma were more likely not to consider PrEP use, because they were worried that if they stepped into a clinic to pick up medication, they would be judged and thought to have mpox (Turpin et al., 2023).

"It was very stigmatized. My family was just talking about it as a gay man's situation going right on. Basically, I remember one of my sisters-in-law being a bit hesitant of what was happening. I heard a comment that she was concerned about the kids being in contact with me because [I am] a gay man."

Stakeholders also emphasized the heightened vulnerability of sex workers, people who use drugs, and younger individuals in the LGBTQ+ community, who often face compounded stigma related to HIV, sexuality, and mpox. In addition, other barriers contributing to isolation included immigration enforcement and high costs when receiving care. Individuals also shared concerns about the increase in ICE raids for people with undocumented status. These barriers and experiences led some stakeholders to avoid testing and seeking medical care and even abstain from sexual activity (Muncaster et al., 2024).

Healthcare Facilitators

Stakeholders stated that the presence of bilingual staff, multilingual materials, and visible in-office promotions about mpox facilitated healthcare seeking. Some of these facilitators are included. Stakeholders also mentioned that proactive community outreach bridged gaps and built trust with the community. Some suggested partnering with trusted content creators on social media, as they are the ones many people rely on for health information and linkage to services.

Stakeholders also strongly supported integrating mpox services with routine or existing clinical care like STI screenings, which helps create natural, stigma-free opportunities for education and services. Some mentioned that empathetic provider communication makes clients feel cared for, and employing strategies, such as scheduling second doses during the first visit, can help improve vaccine uptake and follow-through.

"But you're giving people the opportunity, one, to want to know about it and see if they're comfortable with getting it. I think having it done right there at that very moment shows that you do care. You didn't just let me walk out the door without the information. You didn't just let me walk out the door, not letting me know that this is something that I could have received."

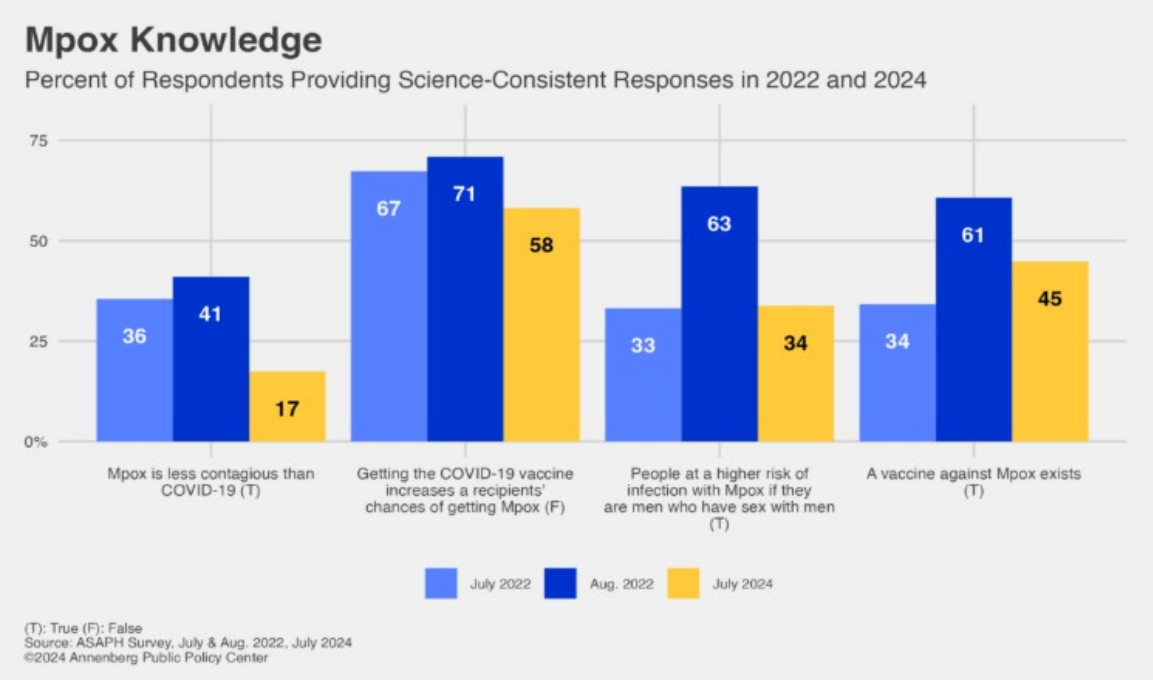
Conclusion

The environmental scan findings presented in this report describe the current landscape and the wide range of barriers and strategies that affect access to mpox services and information. The societal/policy level described information about the policies impacting vaccine equity and access and the type of messaging and public discourse observed during and after the mpox outbreak. The community level provided information about the relationships between organizations and how collaboration between CBOs and community leaders can support uptake of mpox services. The organizational level discussed the barriers individuals face in accessing care (e.g., inflexible clinic hours, lack of multilingual materials, geographically inconvenient locations), and how clinics and providers are working to address those barriers. The interpersonal level illustrated the importance of peers and social networks for facilitating access to services and sharing information about mpox resources.

As illustrated by the SEM, themes often overlap across levels because the factors in one level influence factors at the next level. Upon reviewing the data across the literature review, the survey findings, and the key informant interviews, there were several themes that spanned all levels of the SEM and impacted awareness of, and access to, mpox services. All SEM levels acknowledged that barriers to accessing mpox services for individuals included medical mistrust due to past experiences and historic trauma, fear and anxiety due to lack of information and education, stigma because of homophobic policies and interactions, and the need to address social determinants of health (e.g., housing, substance use, mental health) that may hinder mpox prevention efforts due to competing priorities. In addition, key strategies such as community engagement and outreach, effective communication, and training and education, were all critical facilitators to improving access to mpox services and were across all SEM levels. Understanding the overlapping themes helps to identify the health and social structural conditions that shape the lives of populations who are at risk for mpox.

Although it seems like mpox may have waned in the U.S., there were about 1,700 cases reported in 2023 and 3,000 reported in 2024 (CDC, 2025). Globally, serious outbreaks have persisted, most notably in Central Africa, where the more virulent Clade I variant has driven widespread transmission and was declared a public health emergency of international concern in 2024. However, this evolving risk has not always been clearly communicated to the public. A major theme explored throughout this report is the ongoing gap in communication about mpox, which has contributed to misinformation and confusion about the virus. For example, a recent survey by the Annenberg Public Policy Center of the University of Pennsylvania (Adams, 2024) found that 42% of respondents falsely believe that receiving the COVID-19 vaccine increases one’s chances of contracting mpox, as shown in **Figure 11.**

Figure 11. Knowledge of Mpox in 2022 and 2024



This report sheds light on the communities most at risk for mpox and how the public health system can respond effectively, equitably, and sustainably moving forward. Using a syndemic lens helps to focus prevention and intervention efforts on the root causes of disease transmission and the associated health outcomes, emphasizing social and contextual factors and systemic structural barriers that impact health. This is critical to guide public health planning and strengthen responses to mpox and future outbreaks.

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