COMMUNITY HEALTH

SYNDEMIC SOLUTIONS IN ACTION

Case Study

MPOX IN CHICAGO: COMMUNITY-DRIVEN STRATEGIES FOR RAPID DETECTION AND RESPONSE

Lessons Learned From Chicago Department of Public Health

Our Community

Chicago is the third largest city in the United States, and the largest urban area in the Midwest. The Chicago Department of Public Health (CDPH) is the municipal public health protection agency serving the residents of the city of Chicago. The population of Chicago is nearly 2.7 million and is racially/ethnically diverse, with 32% of residents identifying as non-Hispanic white, 27% non-Hispanic Black, and 30% Hispanic as of 2020. Median age of Chicagoans is 35.9 years old and just over half (51.5%) are assigned female at birth. Chicago has historically been a high morbidity area for sexually transmitted infections (STIs) and has significantly higher rates of STIs and HIV than the US overall. In 2022, Chicago's HIV prevalence rate was 2 times the national rate, chlamydia rate was 2 times higher, gonorrhea rate was 2.3 times higher, and the primary and secondary syphilis rate was 1.7 times higher.

Mpox in Chicago

Mpox is a member of the orthopoxvirus genus family, specifically caused by the monkeypox virus, and consists of 2 clades: Clade I and Clade II, both of which were present in Chicago's 2022 and 2025 outbreaks. Mpox can be spread by animal-to-human transmission and human-to-human transmission, with most recent outbreaks in Chicago being human-to-human. Most human-to-human transmission occurs via direct contact with infectious sores and scabs during activities that include close and personal contact. Human-to-human transmission can also occur via indirect contact through fomites (e.g., contaminated linens/clothing and respiratory secretions). Mpox has traditionally caused a systemic illness that includes fevers, chills, and myalgias with a characteristic rash, but during the 2022 outbreak, many patients presented with genital, anal, and/or oral lesions without systemic illness.

Criteria for Outbreak

A 7-day rolling average of over 1.5 cases per day occurring ≥ 2 times within a 7-day period;

— OR —

Two-weeks in a row with 10 or more cases per week

The public health response to mpox typically focuses on rapid detection, case investigation, and targeted vaccination. Vaccination is highly effective at preventing infection and reducing the severity of symptoms. Full vaccination (two doses) reduces risk for mpox by approximately 66%, while one dose reduces risk by approximately 36%. After the initial 2022 mpox outbreak, Chicago experienced another smaller outbreak in 2023 in which over 50% of cases were fully vaccinated. Prior to the 2025 outbreak, CDPH had determined mpox outbreak criteria based on 2023 and 2024 data (see *Criteria for Outbreak*).

CDPH Chicago Department of Public Health

NACCHO National Association of County & City Health Officials

Syndemic: **This term refers to multiple epidemics that co-occur within a population as result of shared social and contextual factors, resulting in worse health outcomes.**

Between the 2022 and 2025 outbreaks, Chicago never met these criteria. By early August 2025, CDPH saw the 7-day rolling average rise to 1.3 cases per day with previous days being consistently below 0.5 cases per day. Consequently, CDPH set up an inactive Incident Command System (ICS) in preparation and by mid-September, CDPH had crossed the threshold for both outbreak criteria. The ICS was formally activated on September 9, 2025, to coordinate the response and contain the outbreak and had the following tiers: planning, community engagement, healthcare engagement, clinical, lab, vaccine, public information.

> The mpox outbreak reflected a syndemic, with high rates of HIV and STI co-infection

Between June and November 24, 2025, 167 confirmed and probable mpox cases were reported to the CDPH. During the peak period, weekly case counts exceeded prior months by around 10 cases per week, followed by a steady decline in November. A total of 7 hospitalizations were reported, and no deaths occurred in 2025. Mpox cases were concentrated among adults with a median age of 34 years (range 20-68). The majority (78%) of cases occurred among men. The mpox outbreak reflected a syndemic, with high rates of HIV and STI co-infection.

Characteristics of Mpox Cases in Chicago (6/1/2025 - 11/24/2025)

Racial and Ethnic Distribution:

White, non-Latinx individuals **(~39%)**

Latinx individuals **(~23%)**

Black, non-Latinx individuals **(~24%)**

STI and HIV Coinfection:

13% of mpox cases were coinfected with at least one STI concurrently or within the past 30 days

39 cases (≈23%) occurred among people living with HIV (PLWH)

Vaccination Status Among PLWH Diagnosed With Mpox:

72% unvaccinated

10% partially vaccinated

18% fully vaccinated

Surveillance and Case Investigation

During the outbreak, CDPH strengthened **case investigation** through staff training, the development of protocols to guide complex investigations, and quality assurance efforts. CDPH conducted structured performance monitoring and enhanced training of Disease Intervention Specialists (DIS), including refresher training on contact elicitation, which resulted in a **27% improvement in contact elicitation rates.** All DIS were crossed-trained for mpox case investigation and offered 1-on-1 refreshers with a specialized team member during the outbreak. Overall, **95 of 113 cases (84%) were successfully interviewed within 24 hours,** reflecting measurable gains in investigative timeliness and quality. These efforts were further supported by quality assurance review and implementation of a Case Elevation Protocol, which provided guidance for staff and established standardized escalation pathways for complex investigations.

Weekly wastewater surveillance was conducted across eight Chicago sewer sheds. A week-to-week overlay of wastewater detections with reported clinical mpox cases in the city was used to inform geographic priorities for communications efforts.

Specimen submission processes were streamlined by batching specimens weekly to improve turnaround time, supporting more timely re-interviews and follow-up compared to the standard 1-2 month delay. This also enabled CDPH to get weekly whole genome sequencing results and assign a dedicated staff member to manage re-interviews based on genomic clustering. **Genomic clustering helped CDPH tailor re-interview questions to obtain more accurate information on partners and/or locations where partners were met. This strengthened continuity and depth of case engagement, including implementation of qualitative interviews.**

Qualitative interviews were used to better understand behavioral, clinical, and structural drivers of mpox transmission and care-seeking. Implementation of interviews was slowed by lack of participant incentives, which limited recruitment. Findings highlighted the role of social networks in shaping awareness, gaps in understanding of transmission and vaccine protection, and differences in how individuals approached mpox prevention compared to other STIs. This directly informed community outreach and communications efforts, including expanded venue-based outreach, multilingual materials, and enhanced provider education.

Community and Healthcare Provider Engagement

Community and Venue-Based Outreach

Community engagement focused on LGBTQ+ organizations, nightlife venues, and other social spaces identified through case investigations. CDPH established partnerships with multiple business groups willing to host vaccination events. Over one week in early October, teams distributed 75+ bags of prevention and education materials—including palm cards, posters, and flyers—to bars, clubs, and businesses across Chicago. Interestingly, passive outreach methods (e.g., QR code surveys) had low response rates, prompting a shift toward direct phone and in-person follow-up.

Cross-Team Coordination Mechanisms

Enhanced and coordinated surveillance, case investigation, and contact tracing (CICT) were critical to the response. To strengthen situational awareness, align activities across teams, and maintain operational coordination, CDPH established multiple recurring coordination structures, including:

- Daily debriefs with planning, surveillance, and CICT team leads, building on approaches used during prior mpox responses
- Daily ICS team lead debriefs
- Weekly healthcare engagement team meetings
- Weekly CICT huddles
- Weekly cross-functional coordination meetings focused on provider engagement, community engagement, procurement, and public information to improve visibility across workstreams and keep response activities on track

CDPH engaged Community Health Workers (CHWs) to support outreach efforts. During planning, CDPH identified limited CHW presence on the North Side and varying levels of experience with LGBTQ+ health communication. A limited number of CHWs received cultural humility training to address this gap, however, the outbreak was contained before they were deployed to high-exposure neighborhoods.

Major Themes Identified from Qualitative Interviews

- Mpox awareness was **highly dependent on social networks**
- Many participants had **minimal concern about mpox,** even while actively preventing other STIs
- **Misconceptions** included:
  - Belief that mpox was only sexually transmitted
  - Assumption that vaccination provides complete immunity

Healthcare Provider Engagement

Healthcare provider engagement was a central component of the outbreak response and directly informed vaccine distribution and education strategies. The Chicago Health Alert Network (HAN) Mpox webpage was created as a centralized resource tool for clinical providers. Throughout the course of the outbreak, 3 HAN alerts were sent to healthcare providers across Chicago, with one resulting in an mpox clade I webinar for providers. CDPH conducted structured outreach to 34 healthcare facilities across Chicago, including Ryan White–funded agencies, urgent care centers, hospital-based clinics, and general outpatient practices. CDPH distributed educational materials to over 69 healthcare sites, conducted follow-up outreach to urgent care centers with limited prior engagement, and reinforced prevention messaging and vaccination referral pathways.

Findings from Provider Interviews

Only 65% of providers reported routinely discussing mpox with patients. Among those providers, discussions on mpox were most likely when patients:

- Were living with HIV (95%)
- Identified as gay, bisexual, or same-gender-loving (91%)
- Had partners at risk (86%)
- Were taking or eligible for PrEP (86%)

Vaccination Strategy and Clinical Prioritization

To maximize clinical impact amid constrained resources, CDPH used epidemiological data to prioritize community areas and high-risk groups for community vaccination events. During the response, **258 JYNNEOS mpox vaccine doses were administered** at CDPH Immunization and Sexual Health Clinics and at 35 community vaccination events: 13 vaccination events took place at HIV care sites and 22 were at community-based clinics, nightlife venues, and other high exposure settings.

CDPH heard from patients that their family and friends were interested in receiving the vaccine at retail locations. Consequently, CDPH engaged retail pharmacies (e.g., Walgreens, CVS) to determine which locations had the vaccine on-site and shared this information with interested cases or their contacts.

Vaccination Capacity in Healthcare Settings

- Only 12 of 34 providers had JYNNEOS vaccine on site
- 20 providers expressed interest in obtaining mpox vaccine from CDPH
- 100% of interested facilities received vaccine supply following outreach
- 91% of providers agreed to promote CDPH-sponsored vaccine events among patients
- All 34 facilities requested and received patient education materials

CDPH implemented a new and innovative **tiered vaccination prioritization strategy for people living with HIV or vulnerable to HIV,** focusing first on those with advanced or uncontrolled HIV through partnerships with Ryan White–funded agencies.

Tier 1 – Highest Priority
CD4 count <200 or viral load > 200

Tier 2 – High to Moderate Priority
CD4 200–500 or PLWH with no labs reported to CDPH in the last 12 months

Tier 3 – Moderate Priority
CD4 >500

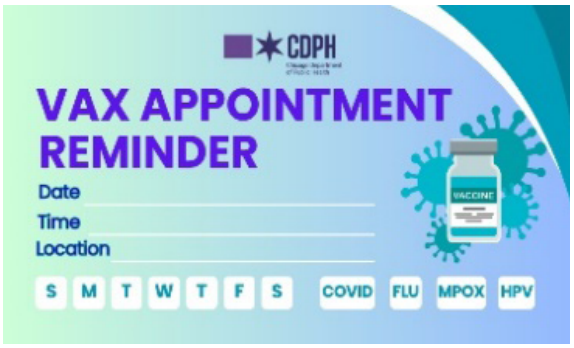
Tier 4 – Lower Priority
All other individuals not fully vaccinated

Strategic Communications and Public Information

CDPH used a variety of platforms to communicate about mpox and encourage vaccination. Digital and social media messaging included weekly infographic posts showing case trends and vaccination events which were cross-posted on Instagram, Facebook, X, LinkedIn, Threads, and Bluesky. Instagram had the highest engagement (up to 7,000 impressions per post) for social media and content that emphasized **clear calls to action and visual graphics** performed best.

CDPH also leveraged paid and environmental media, including city billboards which ran from October to November and geo-located ads on platforms such as Grindr. Print materials—including palm cards, posters, flyers, reminder cards, and coasters—were produced in English and Spanish and distributed at prioritized clinics, venues, and community sites. CDPH also released two podcast episodes, one in Spanish designed for the public and describing how the virus spreads and symptoms to watch for, and one in English for providers describing clinical/epidemiological updates.

CDPH Educational Materials



Lessons Learned

Staff and provider training and engagement can strengthen detection and service delivery: CDPH saw significant improvements in case investigation timeliness and quality following targeted staff training. Provider engagement revealed gaps in patient education and vaccine capacity. However, providers were receptive to CDPH's engagement efforts, resulting in increased vaccine supply, promotion of vaccine events, and distribution of patient education materials.

Strategic prioritization is critical to maximize impact with limited resources: CDPH developed clinical prioritization frameworks and leveraged insights from case investigations to prioritize response efforts including where to host community-based outreach events and how to equitably allocate vaccines.

Community-driven, relationship-based outreach outperforms passive engagement methods: Engagement through trusted partners and in-person outreach—including vaccination events in high-exposure venues and HIV care sites—was critical to reaching populations at highest risk.

Communication and education must be timely, targeted, and adaptable: Multichannel communication increases reach, but creative capacity must match demand. Procurement pathways may also need to be adapted to shorten turnaround time for print materials.

Operational and contracting flexibility directly affects field effectiveness: CDPH allocated internal outbreak response funding to support existing mobile vaccination contractors and other outreach efforts. Timely access to funding, incentives, and print materials is critical to a rapid response in addition to establishing contracts with clinical partners who could support vaccination clinics at the different venues.

This case study is part of a series, *Syndemic Solutions in Action: Lessons Learned from Local Health Departments.* Scan the QR code to access additional information and resources.

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