Emerging Considerations for Addressing MPV in Higher Education Settings:

MPV Vaccination

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Since the eradication of smallpox in 1980 and the subsequent end of routine smallpox vaccination, monkeypox virus (MPV) has emerged as the most concerning orthopoxvirus for public health. MPV was first identified in humans in 1970 in the Democratic Republic of Congo. The first U.S. case was reported in 2003 and resulted in more than 70 cases. The virus re-emerged in the U.S. in July 2021, and since then, there have been thousands of confirmed MPV cases across the country. In response to this increase in cases, the U.S. Department of Health and Human Services declared MPV a public health emergency on August 4, 2022.

MPV is generally a self-limited infection that resolves without specific treatment, but the following factors contribute to concern about the virus:

- Spread of the virus through close, skin-to-skin contact, including during intimate sexual contact
- Spread of the virus through fomites, defined as objects or materials which can carry infection (e.g., towels, sheets, and clothing)
- Stigma associated with visibility of skin lesions
- Oppressive systems that create stigma as well as barriers to prevention and care — specifically racism, heterosexism, and cissexism
- Pain associated with lesions
- Relative scarcity of vaccine and treatment
- Duration of prodrome and illness duration (approximately 2-4 weeks)
- Broad differential diagnosis (e.g., herpesviruses, chickenpox)
- Reduced inventory of quarantine and isolation housing on many campuses

This ACHA series, "Emerging Considerations for Addressing MPV in Higher Education Settings," aims to supplement available CDC guidance to support college health clinical and health promotion professionals.

*A note on nomenclature: ACHA is referring to the virus as MPV to align with the nomenclature for other commonly transmitted infections in the college setting — e.g., Epstein-Barr virus (EBV), human papillomavirus (HPV) — that include virus in the acronym. This also aligns with the naming convention currently used by the American Academy of Family Physicians (AAFP).

Sources:
https://www.who.int/news-room/fact-sheets/detail/monkeypox
https://www.cdc.gov/smallpox/vaccine-basics/index.html
https://jamanetwork.com/journals/jama/fullarticle/2793516

Introduction

Two vaccines (JYNNEOS and ACAM2000) are currently available for the prevention of MPV:

- JYNNEOS vaccine is approved for the prevention of MPV and smallpox disease.
- ACAM2000 is approved for smallpox disease prevention and made available for use against MPV under an Expanded Access Investigational New Drug protocol.

The MPV vaccines are derived from the smallpox vaccine used during past smallpox outbreaks. If possible, prioritize use of the JYNNEOS vaccine, as fewer side effects have been reported as compared to ACAM2000 vaccine.

Student health centers should inquire about the availability of vaccines through their local and state health departments. As more of the vaccine is made, they will become more readily available to the public.

For those students who are unable to obtain MPV vaccine through their student health centers, Building Healthy Online Communities has created a vaccine locator that can also be found on the CDC's MPV Vaccine page.

Due to the current supply of the vaccine and to help prevent transmission of MPV, CDC recommends that individuals at highest risk receive the vaccine at this time.

Of note, instead of reserving second doses, health department authorities are recommending all available doses be given. When more vaccines are available, individuals can complete the recommended series.

Vaccine Effectiveness

No past data is available on the clinical efficacy of the MPV vaccines; therefore, additional data will need to be gathered to know how long immunity lasts after an MPV vaccine and if additional booster doses are recommended. Currently, CDC is monitoring MPV monkeypox infection rates by vaccination status, and data shows vaccinated individuals have a lower incidence of MPV cases compared to unvaccinated individuals. Per CDC, this "may suggest how well the vaccine is performing in the real-world setting."

Vaccinated individuals should continue taking precautions to help protect themselves and others by avoiding close, skin-to-skin contact with others. According to CDC, peak immunity is expected 14 days after the second dose of the JYNNEOS vaccine.

Patients Who Should Receive MPV Vaccination

The U.S. National MPV strategy was announced June 28, 2022. At this time, CDC is not recommending routine immunization (or pre-exposure prophylaxis, PrEP) against MPV for the general public. As of September 28th, CDC criteria were expanded to include those individuals who *might be exposed to MPV in the future* according to certain measures.

In identifying students, faculty, and staff who should receive MPV vaccine, refer to these CDC guidelines:

Vaccinate after known or presumed exposure to someone with monkeypox [i.e., post-exposure prophylaxis (PEP)], ideally within four days. Additionally, people with certain risk factors and recent experiences that might make them more likely to have been recently exposed to monkeypox can be considered for vaccination [i.e., expanded post-exposure prophylaxis (PEP++)].

Vaccinate as pre-exposure prophylaxis (PrEP) people with the highest potential for exposure to MPV such as:

- Gay, bisexual, and other men who have sex with men, transgender, or nonbinary people who in the past 6 months have had:
    - A new diagnosis of one or more nationally reportable sexually transmitted diseases (i.e., acute

HIV, chancroid, chlamydia, gonorrhea, or syphilis)
    - More than one sex partner
- People who have had any of the following in the past 6 months:
    - Sex at a commercial sex venue
    - Sex in association with a large public event in a geographic area where monkeypox transmission is occurring
- Sexual partners of people with the above risks
- People who anticipate experiencing the above risks

Administering JYNNEOS MPV Vaccine with Other Vaccines

Yes, JYNNEOS vaccine can be administered with other vaccines and without regard to the timing of other vaccines since the vaccine contains a live, attenuated non-replicating orthopoxvirus. If other vaccines are being administered the same day, use different anatomic sites if possible.

Vaccine Administration: Subcutaneous vs Intradermal

CDC guidance for JYNNEOS states that two doses of the vaccine are recommended, 28 days apart (a minimum of 24 days after the first dose and a maximum of 35 days after the first dose). If the second dose is not able to be administered during the recommended interval, it should be administered as soon as possible.

Per CDC, the JYNNEOS vaccine should be injected "superficially between the epidermis and the hypodermis layers of the skin, typically of the volar aspect (inner side) of the forearm. If the volar aspect of the forearm is not an option (e.g., strong patient preference), intradermal administration of vaccine may be performed at the upper back below the scapula or at the deltoid. Producing a noticeable pale elevation of the skin (wheal) with the intradermal injection is desirable but not required." See CDC's JYNNEOS Preparation & Administration Summary (Intradermal Administration).

In a situation where there is vaccine leakage during administration, repeat the dose immediately via the intended route. The repeat dose should be placed two inches away from the previous site placement. See the CDC's website for more information on administration errors.

Scarring and Stigma Concerns

Since intradermal dosing was implemented, there have been community concerns about scarring and stigma from receiving the vaccine. As MPV remains a stigmatizing infection, these concerns should be taken seriously to increase uptake of the vaccine and address vaccine hesitancy within the communities most affected.

Health centers should make every effort to ensure staff are trained on these concerns and able to administer the vaccine in alternate locations as applicable. Here are some strategies for reducing the likelihood of scarring and skin irritation:

- For patients who have a history of keloid formation, the vaccine should be given subcutaneously (CDC). It is recommended to encourage patients to disclose this information before receiving the vaccine intradermally.
- Placement of the vaccine is usually on the forearm. However, the vaccine can be placed over the shoulder blade or on the deltoid area if an individual prefers a more discreet location (CDC).
- If a patient has evidence of a cutaneous reaction at the time of the first dose, the second dose can be given

in the contralateral forearm (CDC). Of note, if a large, localized reaction occurs and takes several weeks to resolve, consider giving the second dose subcutaneously).

- Local reactions (e.g., pruritus, erythema, hyperpigmentation, pain) will usually resolve with time (weeks/months). For local side effects, topical emollients, cold compresses and oral antihistamines may be used as needed (CDC). Advise patients to avoid scratching or picking on the area and to apply topical steroids or antihistamines.

Collaborate with your health education and health promotion staff to develop student-facing messaging. Even if your health center's clinical staff are not trained or authorized to provide intradermal dosing at sites other than the forearm, it is important that students know they have the right to ask about alternate injection sites if they seek vaccination off campus.

Vaccine Cost

The vaccine is free, but there may be an administration fee in some clinical settings. If an administration fee is required, consider reducing or eliminating the vaccine administrative fee for students who are uninsured or underinsured.

If you plan to charge an administration fee, ensure this is fully communicated to patients before they book an appointment and/or attend a walk-in clinic—noting that the communities needing the most access to the vaccine are often the ones most unable to pay for it.

Addressing Privacy and Confidentiality

Many students delay or avoid seeking medical and mental health care due to privacy concerns. This is particularly true if they are a dependent and under someone else's insurance plan or do not have access to comprehensive insurance outside of their institution.

Per the "Address Confidentiality Concerns" section of ACHA's Best Practices in Sexual Health Promotion and Clinical Care in College Health Settings, some strategies that can support confidentiality include:

- Allowing students to pay out-of-pocket for any services to avoid billing their insurance plan
- Educating students on state confidentiality laws and navigating insurance
- Listing any charges on student accounts generically (e.g., "Student Health Center Fee" instead of "HIV Testing Visit")
- Encouraging students to have different passwords for their online health portal and other university accounts, and not to share them with anyone

Vaccination Recruitment Strategies at the Local Level

Available data have continued to show that there are racial inequities in vaccine access and uptake—particularly among Black and Latino communities —despite being most affected by MPV. It is imperative for campuses to make every effort to ensure that vaccines reach the arms of communities and individuals who need them most.

The White House Equity Pilot Program has been created to provide additional vaccine allocations to state and local health departments to help reach communities at highest risk of contracting MPV. As such, local health departments are employing a variety of strategies to reach the communities most affected by MPV. If you haven't done so yet, reach out to your local health department to partner on outreach efforts.

For more strategies, actions, and resources to help increase vaccination among the communities most affected by MPV, check out the CDC's MPV Vaccine Equity Toolkit.

Recruiting Vaccine Candidates

Collaborating with students to reach other students is ideal. As such, consider reaching out to student groups that serve queer, cisgender men and trans students—especially those of color—to promote vaccine equity and access.

To meet eligible students where they are, consider not only using campus communication channels, but also paid advertising on social media and location-based dating and hook-up apps.

As has been noted, CDC is not recommending mass vaccination for the general public or for all sexually active individuals at this time. Given the stigma and current criteria, re-consider hosting a highly publicized and visible vaccine outreach clinic on campus. If you host regular HIV testing events on campus, however, this would be a great opportunity to combine messaging about testing with messaging about the MPV vaccine.

Recruiting through the Electronic Health Record (EHR)

Selecting potential vaccine candidates through the EHR based on certain visit histories (e.g., individuals taking PrEP for HIV prevention, or those who have been recently diagnosed with an STI) only identifies students who have been engaged in care—which limits opportunities for uninsured and under-insured students to access the vaccine. While this can be a useful strategy—particularly if doses are near expiration—consider distributing campus-wide messaging about vaccine access and eligibility first so that any student can reach out to a staff member.

A Work in Progress

As the MPV outbreak evolves, so will this guidance document. Please consult with fellow college health professionals and share your campus' MPV efforts and resources on the ACHA Connect discussion board, and get involved in one of the many ACHA sections and coalitions.

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