Expert Interviews

National STD Curriculum Podcast

Monkeypox: Transmission, Vaccines, and the National Public Health Response

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CDC epidemiologist Dr. Bryce Furness reviews modes of monkeypox transmission, prevention, the impact of the public health emergency declaration, and vaccination-related issues with the National STD Curriculum Podcast Editor Dr. Meena Ramchandani. This fifth episode of the ongoing monkeypox series was recorded in September 2022.

Topics:

- MPX
- Monkeypox
- tecovirimat

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Transcript

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In this episode:

introduction**[00:00] Introduction**

Dr. Ramchandani
Hello, everyone. My name is Meena Ramchandani. I'm an infectious disease physician at the University of Washington in Seattle. This podcast is dedicated to an STD review for healthcare professionals who are interested in remaining up to date on the diagnosis, management, and prevention of STDs.

This is the fifth episode of our monkeypox podcast series, which focuses on the 2022 outbreak. The episode will discuss transmission, prevention, vaccination-related questions, as well as the impact of the Public Health Emergency (PHE) declaration. In the previous episode, we focused on epidemiology and trajectory of monkeypox virus infections in the US. Both episodes were recorded in September of 2022.

I'd like to introduce Dr. Bryce Furness. Dr. Furness is a medical epidemiologist in the Division of STD Prevention at the Centers for Disease Control and Prevention and has been embedded within the Washington DC Department of Health since 2002. Currently, Dr. Burness has been deployed to the CDC's 2022 multinational monkeypox response while also diagnosing, treating, and preventing monkeypox within the DC's health and wellness center. Welcome, Bryce. Thank you so much for being here. It's wonderful to have you with us on this episode

Dr. Furness
Thank you, Meena. I appreciate that.

mode-transmission**[01:21] Mode of Transmission**

Dr. Ramchandani
I'd love to hear from you what has been the primary mode of transmission for this virus in the 2022 outbreak and any evidence of airborne transmission or transmission in other ways.

Dr. Furness
Yeah. Thanks, Meena, I think it's a good question, and it's one that has been asked at a lot of different levels. But I think the one thing that's been driving this outbreak that we haven't seen previously is that it seems to be through very intimate contact, oftentimes, sexual contact. So, the virus is mostly spread through skin-to-skin contact, contact with the rash, the sores, or the fluids that come out of the rash or sores of a person with monkeypox, coming into contact with those rashes, those sores, or the fluids that come from those sores. Or touching the clothing, the towels, the sheets that have been in contact with somebody who has sores, rashes, or has been secreting body fluids associated with monkeypox disease.

There is a respiratory aspect to it, but we're calling them respiratory secretions. I don't like that word. I think that more the lay public would respond better to saliva. So it seems to be saliva. So we're not at a level that we were with COVID, trying to figure out whether it was airborne or just through large respiratory droplets. These are secretions. I think about saliva. So, not only does close skin-to-skin contact transmit the virus, not only does contact with fomites such as sheets, towels, and clothing that has been in contact with somebody with monkeypox but also close cuddling, if you will. Talking close, you know, think about saliva and spitting, obviously kissing. If you're kissing somebody and you're swapping saliva that could lead to transmission.

What we don't know, so I think that the second part of that question is we do not think that this is airborne. We do not think that this is being transmitted through anything smaller than spittle or saliva or what they're calling secretions. There's some emerging evidence that it's actually, this virus can be transmitted through body fluids like ejaculate, pre-ejaculate, and vaginal fluids. You know, since I think 2015, maybe a little

earlier, we learned that some mosquito-borne viruses that we hadn't previously known were sexually transmitted could be sexually transmitted. And I'm specifically talking about Zika and Ebola. The virus has been shown to be evident in body fluids, and transmission has incurred through sexual contact because of that. We don't know whether body fluids are playing a role, body fluids above and beyond saliva, or the fluids that are coming out of sores and rashes. We don't know if ejaculate, pre-ejaculate, and vaginal fluids are playing a role in the current transmission. There has been some emerging evidence that the virus is evident in semen, but we don't know if identifying that virus in the semen means that it's infectious and can be used as part of the transmission cycle.

Dr. Ramchandani
Yeah, and also, I'd be curious to know, and I don't think we have any evidence for this, but there's such a wide spectrum of disease. Some people will have a single genital ulcer, and I can imagine probably transmit potentially maybe differently than someone with a widespread rash or skin lesions all over the body. As opposed to someone who maybe had tonsillitis and a lot of oropharyngeal lesions. I wonder if the transmission, I don't think there's any evidence to it, for this right now. But I just wonder if that transmission might be different in those particular scenarios, depending on the clinical manifestations that the patient might have.

Dr. Furness
Yeah. I mean, my guess would be that it is. One of the unusual things about this particular outbreak is that it's involving a lot of mucous membranes, the penis and circumcised penis, the rectum, the vagina, the mouth that may or may not have been associated with sexual contact. But there are some things about this particular outbreak that are very unusual that we're still learning about. So I do think that maybe the oral mucous lesions may lead to more of a transmission from saliva or the respiratory secretions versus the rectal and genital lesions or outbreaks, or really bad infections and disease which we're seeing.

preventing-transmission**[05:30] Preventing Transmission**

Dr. Ramchandani
You know you see a lot of patients with monkeypox. What has been your experience been in terms of telling patients of how to isolate? You know, it's hard enough to tell patients to isolate with COVID for five days. How do you tell patients to isolate depending on their clinical symptoms? I'm just curious.

Dr. Furness
I think that the baseline is CDC guidance: that the preferred isolation would be 21, 28 days until every monkeypox lesion has crested, fallen off, and there's new skin underneath. And there have been some patients who have been able to do that. For whatever reason, they have paid sick leave, they're able to work from home, whatever. Whatever happens to be, they have a partner that can run errands for them. There are some patients who have been able to do that. And those are the patients where we have to write letters, letting their employer know that they're no longer infectious or letting their employer know that they have to isolate. So there's that one group of people who are able to follow the gold standard, which would be isolating until these lesions have fallen off and there's new skin underneath.

And then there's a whole spectrum of individuals in between who, for whatever reason, can't isolate that long. They don't have paid vacation or paid sick leave. They don't have a partner that can run errands for them. They're pretty isolated socially because of the virus. And what I've been telling them are the harm reduction strategies that we've outlined through the community outreach and partner engagement. That's the team I'm on with the national response. So if you have to go out, make sure that your lesions are covered. And if you have lesions on your hands, wear gloves. Try to avoid places where there are commonly touched surfaces, like public transportation, elevator buttons, those types of things. Definitely don't share anything like towels, sheets, clothing with anybody because those can transmit infection. So it's kind of like, okay, you can't do this, but what about this? And it tends to be very patient-focused. It tends to be from almost from a motivational, let's try and keep you from transmitting this to other people: How can we best do this, given your circumstances? And frame the messages from there. I've not had anyone who's had lesions on their

hands who's had to use public transportation that much, I will say.

Dr. Ramchandani
And wear a mask, right?

Dr. Furness
And wear a mask because there is that spittle there, as that aspect of the respiratory secretions that could get out and become infectious.

demographic-factors**[07:50] Demographic Factors**

Dr. Ramchandani
Can you please describe a little bit about the demographic of the majority of infections that have been diagnosed in the U.S. thus far?

Dr. Furness
Yeah. I will say that at the national level, last time I checked, I think that when you look at gender or sex, it was 97% male. So this is predominantly among men and predominantly being transmitted through male-to-male sexual contact. When you look at the race ethnicity breakdown, last time I checked, it was 32% White, 31% Hispanic, and 31% Black. So it seems to be one-third, one-third, one-third. That's at the national level. Unfortunately, we've seen some disconcerting data coming from program areas. Georgia was one that showed that a majority of their cases were among Black individuals and the lowest vaccine uptake was among Black individuals. So there seems to be access issues there. There seems to be some vaccine hesitancy within that population, but at the national level, it seems to be pretty well evenly split between White, Hispanic, and Black.

At the local level, that seems to differ, especially when you're comparing those that are testing positive for monkeypox versus those that are getting the vaccine for either postexposure prophylaxis or part of the PEP++ clinic. For those cases where we do have an idea of transmission, we know that 75% of those cases are male-to-male sexual transmission. What I will say is the incomplete data is very high, so getting worse over time. So we don't have complete data on gender, sex partners or sexual identity, or gender identity. But when you look at the data of the cases, we do have that information. Seventy-five percent of the cases seem to be male-to-male sexual transmission.

Dr. Ramchandani
Thank you. That's a wonderful summary.

a-public-health-emergency**[09:44] A Public Health Emergency**

Dr. Ramchandani
Now that the ongoing spread of monkeypox virus in the U.S. — it's been declared a public health emergency. What can we expect as clinicians? How will this help us? Management and prevention of this infection for our patients, and what can patients potentially expect too?

Dr. Furness
One of the first things that I saw about this being declared a public health emergency is the expansion of testing and of treatment. So when this first hit Washington, DC, and our first monkeypox-positive case was June 4. So it was shortly after the cases popped up in Boston. So the impact of this where there was one publicly funded clinic in Washington, DC, that sees STI patients, HIV/AIDS, hepatitis, and tuberculosis patients. And we got the full brunt of this because these cases were manifesting symptoms that were similar to sexually transmitted infections.

And so all of the testing and all of the tecovirimat, all the treatments, and all the postexposure prophylaxis, all of the vaccine that was given within the context of a known exposure or epidemiological link to a case was

happening in this publicly funded clinic. Which, to be very clear, was under-resourced and overworked before monkeypox hit and has just been spread even thinner than it was beforehand.

The one thing that I think calling this a public health emergency helped with is that we now have multiple other providers in the community that are doing testing, that are providing tecovirimat treatment. DC was really clever because they actually put up a website, and community providers who were seeing a lot of cases could apply to get tecovirimat through the Department of Health from the stockpile. And it wasn't all just coming to the publicly funded clinic.

Before the private labs, like before Quest and LabCorp, were doing testing, we were able to allow them to directly collect specimens and send them to the local public health lab for orthopox testing. So that's the biggest thing I've seen after declaring this a national public health emergency is that we were able to take the burden off of the overburdened publicly funded clinics that typically see the STI infections; and spread that among FQHCs that also happen to be LGBTQ+ centers of excellence, private practices that happen to see LGBTQ+ patients or HIV-positive patients. So that's the biggest change that I've seen after having called this a public health emergency.

It'll be interesting because I think that there is momentum building to also call this a sexually transmitted infection. And the one benefit that I could see, if and when that is done, is that it will allow in all 50 states and DC adolescents and young adults to be able to get testing, treatments, vaccination without parental consent because it will be considered part of this sexual health umbrella. And I know in Washington, DC, anyone who's 12 or older can be seen for anything that has to do with sexual health. So whether it's testing, whether it's treatment, whether it's vaccination, they can be seen without parental consent. In DC, anything that has to do with family planning, they can be seen without parental consent. And finally, anything that has to do with mental health or substance abuse, they can be seen without parental consent. I know that DC's got a pretty broad umbrella for that not needing parental consent. Other places, it tends to be or could be more restricted, but I believe that all 50 states have some sort of public health regulation or law in place where adolescents that are sexually active and need either testing or treatment or vaccination can get that without parental consent. So classifying monkeypox as a sexually transmitted infection, not just sexually associated, which is what we've been calling it thus far, but actually, a sexually transmitted infection will help with those adolescents seeking care, treatment, prevention.

Dr. Ramchandani
Yeah. So really increasing the resources as well as access to care for all the populations that might need it the most in an expedited way. So having this public health emergency response will be really helpful for getting patients the care that they need.

Dr. Furness
And I think through the health equity lens, I think it's gonna help, especially when you're talking about Black and Brown people who have a distrust in some of the governments or the large medical establishments. If they're working with community-based organizations or community health centers, and they have an established relationship with those places, if they're able to get tested or treated or vaccinated in those places, we may see these disparities decrease.

Dr. Ramchandani
Yeah. So improving health inequities as well to get patients what they need and easy access to care.

Dr. Furness
I will say that the PrEP clinic that I'm involved in, I am proud to say that more than 75% of our patients are Black and Brown men who have sex with men or transgender females. So we are really getting preexposure HIV prevention to the patients that most need it. And we're only able to do that because we have solid and robust relationships with the community-based organizations that deal with those particular individuals. So really, what ends up happening is that they go into a place and they interact with people that they already know and they already trust. So there's that trust and that relationship there, and then we expand upon that.

We have the community-based organizations refer the patients. Sometimes they call. Sometimes they visit beforehand. Sometimes we go to them and do little educational, whatever it takes in order to meet them where they are initially, and then bring them into where they can get the free preexposure prophylaxis. So we are going to end up having to do the same thing.

I think that's going to be especially true with vaccination for PEP++ and postexposure prophylaxis within some of these marginalized communities where there's still some vaccine hesitancy and where there's been long-established distrust in established institutions like the government and large medical hospitals or clinics.

Dr. Ramchandani
That seems like a wonderful resource for the community, so thank you for doing that. To summarize, I'd love to—actually, not to summarize, but to end this interview, which I'm so sad that it's ending because I really enjoy talking to you. I've learned so much.

getting-vaccinated**[15:37] Getting Vaccinated**

Dr. Ramchandani
What's the most frequent question you get about monkeypox, and how do you usually answer this question? It could be from patients, from providers, from the community.

Dr. Furness
I think it's a good question. Actually, I think the most frequent question that I get from both patients and friends and colleagues is, should I get vaccinated? I think that's the number one, as the inclusion criteria for these PEP++ clinics have expanded significantly. That's the one thing that people ask is, should I get vaccinated? I'm getting this from heterosexual mothers. I'm getting this from young college kids who they don't engage in same-sex sex but they have partners who may. Like, those are the types of sexual networks or nuances where that's driving that question. So that would be the number one is, should I get vaccinated? Yeah, that's the number one by far and away.

I'm trying to think what's the second and third would be. And that's, I think the second question that I'm getting quite a bit is the reactions to the intradermal vaccine. So CDC, because the demand so outweighed the supply with these *Jynneos* vaccines, we had to do something. And based on limited science, but there is some science there, we went from subcutaneous dosing to intradermal dosing. So not only did the amount change, but the location of the vaccine changed as well. And I myself have gotten my second vaccine. It was intradermally, and I had a pretty significant reaction in that it got pretty large. It got pretty red. It got both painful and itchy, especially between 24 and 48 hours after it was placed. And I still have a red bump on my arm. So that has been the second most common question is, is this a normal reaction? Should I worry? Should I go see the doctor about this? I've gotten pictures on my cell phone from lots of patients, lots of friends, colleagues about the reaction to the intradermal dose of the *Jynneos* vaccine. So that's one and two.

Dr. Ramchandani
That's really helpful for counseling for patients. And I don't want to dissuade anyone from giving the vaccine because the vaccine's so important. I find that patients do say that after a couple weeks. I haven't heard too much of the pain. I'm sorry you had to experience that, but a lot of itching and that the bump goes away, and they usually resolve without symptoms. Is that correct?

Dr. Furness
That it is. And it's interesting because I've never, it's been the first time I've experienced where it itched significantly. But, then, when I would scratch, it would hurt. So it was tender. And so it's not expected, but it's not uncommon either if that makes sense.

And even with this subcutaneous one, when I had the subcutaneous one, I had a tender nodule there for about a month afterwards. I almost had it by the time I got my intradermal second dose, 28 days after the first. And it wasn't painful unless I flexed my tricep, and then I knew it was there. And if I touched it, it was

there. So, I had reactions to both vaccines. Neither one were bad reactions. They're much better than a lot of what I hear about COVID-19 vaccinations, especially as far as systemic symptoms, like muscle aches and lethargy and those types of things. But they can happen. And again, what I tell all my clients when I counsel them, it's still better than the infection, especially some of the serious genital and rectal infections we've seen. I wouldn't wish that on anybody.

Dr. Ramchandani
Yeah, that makes sense. We actually show patients a picture of what might happen after the vaccine so they know what to expect. And then also what's maybe outside of that window and when to seek medical care. We find that's helpful just counseling and prepping patients for this.

Bryce, thank you so much for joining us today. It's been an absolute pleasure to speak with you on these important topics. And I know our audience will really benefit from this interview. So thank you so much.

Dr. Furness
Thank you for having me. I have enjoyed it, and maybe we'll do this again sometime.

credits**[19:29] Credits**

Dr. Ramchandani
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