

What monkeypox means for South Africa _ Transcript

Narrator: This is a Bhekisisa podcast.

Jacqueline Weyer: Within three to four days, one should start seeing the eruption of the skin lesions. So it's probably only then that you would think of monkeypox. Otherwise clinically, it wouldn't be recognised. So usually after day three or four the lesions will start forming. And that's when we start thinking about monkeypox and that's when we would start doing the testing.

Mia Malan: Welcome to this episode of the Bhekisisa podcast. I'm Mia Malan. We've now heard about a few monkeypox cases in South Africa after the first case was confirmed on the 23rd of June.

Mia Malan: Dr Jacqueline Weyer from the National Institute for Communicable Diseases Centre for Emerging Zoonotic and Parasitic Diseases leads the team who confirm such cases. And we speak to her today. Jacqi, what type of tests do you use to confirm such cases? Is it the same type of PCR testing that we use for COVID?

Jacqueline Weyer: We do do PCR testing for monkeypox as well. A specific PCR to you know, direct it to the genome of the monkey pox virus. And then when we do have these positive cases, we also do genomic sequencing. This contributes to our knowledge of the epidemiology of this outbreak. We want to see the lineage of the virus involved and also track for any possible mutations or changes in the virus that may predict increased risks to our population. So the first line testing would be PCR. And then we follow up any positive cases with additional genetic analysis.

Mia Malan: The NICD has mentioned that this patient, the first case in South Africa doesn't have a travel history.

Mia Malan: So it means he got monkeypox from someone who already had it in South Africa. So what are we looking at in terms of more cases that will be identified in the next few days or weeks?

Jacqueline Weyer: Unfortunately in this case, there's no direct international exposure link for this individual case. And as you rightly said, that implies that the disease was acquired locally. So what we are currently doing is the provincial department of health teams are working on contact tracing. Contact tracing will involve identifying any individuals that are at risk because they had

exposures to those individuals within a certain period of time. So one we'd want to communicate with those individuals so that you can relate the risks.

[00:05:05] **Jacqueline Weyer:** Also monitor them for development of any disease. And help them to understand, especially if they do test positive, what that means for them and how they can be managed. Also, we want to obviously avert any additional cases from happening, but with case tracing, you are also backtracking. So you try to identify the chain of transmission that led to the exposure of this individual case.

[00:05:30] **Jacqueline Weyer:** And although those individuals might have resolved the disease, they probably won't be sick any longer that will allow us to possibly identify the index case. So the individual that would've had international travel history and acquired the infection outside of South Africa. And then also through that process, then identify the full expanse of the chain of transmission.

[00:05:54] **Jacqueline Weyer:** So at the moment, it's honestly not possible to say how many individuals would be involved or how many cases of monkeypox are currently out there. Again many of those might be resolved. It might just be a single case.

[00:06:09] **Mia Malan:** The question that South Africans will ask is, do you expect a major outbreak? Do we need to be concerned?

[00:06:16] **Jacqueline Weyer:** So it's really difficult at this stage of the outbreak. What we are seeing happening globally is that the outbreak has been affecting a very specific demographic group. And this is men who have sex with men (MSM) and within the context of these highly interconnected social networks and global travel. This is why we're seeing the epidemiological trends that we're seeing now.

Jacqueline Weyer: So the global consensus at this moment is that spread to the general populations or other demographic groups within the population is considered to be low given that this is a virus that's not highly transmissible. It requires a very specific, very direct and physical contact with a person that is affected.

Mia Malan: I want to get back to how you get monkeypox. You said you need direct physical contact. Can you give us examples of what type of contact and also is it an issue if you, for instance, come in touch with contaminated materials and how does it get contaminated?

Jacqueline Weyer: It's not a virus that's highly transmissible within the human population, at least in its current form. It does not spread in a similar way to viruses that we are more familiar with such as the influenza virus, which causes flu or SARS-CoV-2 virus, which causes COVID-19. So it's almost like chickenpox. Maybe that is a similar virus, but definitely not as contagious as chickenpox. So it's direct contact with those skin lesions that are carrying a lot of the virus. So how can this then happen?

It would require direct skin to skin contact that can happen in different ways, cuddling, hugging, kissing also because some of these lesions could be in and around the mouth. And then definitely through sexual contact. Now through sexual contact, obviously skin to skin contact during sex and perhaps to a certain extent, also the exchange of bodily fluids. Although the risk, for example, for monkeypox that's present in semen is considered low. And we really think that it's skin to skin contact that's more involved in the transmission of the virus. Now, a person that's infected with monkeypox with skin lesions can also contaminate things like linen clothing. And other items, especially in and around the home. So when they're sharing these items, especially things like linen and clothing, there's also a risk of transmission through that route.

Mia Malan: You've mentioned in your previous answer that at the moment, monkeypox is mainly restricted to men who have sex with men. Why is that the case?

Jacqueline Weyer: We don't believe that it's got anything to do with biological susceptibility. Humans are one species. The virus wouldn't know the difference. And in terms of biological susceptibility, we are all equally susceptible. The only factor that comes into play in terms of susceptibility at this stage, is whether you had smallpox vaccination before. So smallpox vaccination was conducted quite widely population wide up until about 1980. Different countries abandoned smallpox vaccination at slightly different times. In South Africa it was during the course of 1980, and this was because of the eradication of smallpox around about that time.

Jacqueline Weyer: So smallpox is very closely related with monkeypox. So there is quite a good cross protective immunity that's inferred through smallpox vaccination for monkeypox. So if you were vaccinated for smallpox before, that decreases your susceptibility to infection. So that's really at this stage, the only biological feature of susceptibility to our understanding. With viruses, and there are many examples of this. This often the environment or the conditions, even behavioural factors can contribute to the perpetuation of an outbreak. And again, there's many examples of this in this instance, our understanding is that

the virus ended up in individuals early on during the outbreak, that are part of the MSM demographic with close contact, through several social events that we are considering that could have played a role as super spreader events.

Mia Malan: You've mentioned the smallpox vaccine and that, that could confer some protection. What is the kind of protection it gives? What is the percentage of protection? And does it protect you from getting infected or just from getting severely ill? And how long does that last for? So if you were vaccinated in 1980, is that protection still very good or does it deteriorate or become weaker over years?

Jacqueline Weyer: We believe there's up to 85% cross protection offered through smallpox vaccination against monkeypox virus infection. The vaccines that were used during the smallpox eradication campaign were all live attenuated vaccines. Unlike the modern vaccines that we've now become used to the mRNA vaccines and the subunit vaccines.

Jacqueline Weyer: So these live attenuated vaccines really invoked quite potent and typically long lasting immunity. And there's a number of different, you know, similar vaccines uh... yellow fever, for example, is another one where you actually only require vaccination once in your lifetime and you should be protected then for the course of your life.

Jacqueline Weyer: The problem obviously is that with cessation of smallpox vaccination in 1980 individuals that were born during the course of 1980 and beyond weren't vaccinated. So now we have an increased population in terms of numbers of people that are now actually susceptible. We also believe that this is actually what's driven the emergence of monkeypox in some of these central and Western African countries, which also relates to the risk of monkeypox that we are seeing now.

Mia Malan: If I'm making my calculations correctly, then in South Africa, everyone who's 42 years or older would have had a smallpox vaccine if they did go for their vaccinations. So now my question is that if you contact- trace, and you now find those contacts that could potentially be infected, do you give them a smallpox vaccine so that they don't fall ill? Or what do you do with them?

Jacqueline Weyer: So currently we don't have these vaccines available in South Africa. Globally, after the smallpox eradication campaign, obviously commercial production of these vaccines pretty much came to a halt and there were strategic stockpiles of these vaccines that were kept for different reasons over the years.

Jacqueline Weyer: So we've seen the uptake again of the commercial production of some of these vaccines. Some more recently developed more safe but equally efficacious vaccines that have been developed in more recent years. So certainly the commercial production of these vaccines has picked up again. Obviously we're then looking at the issues of regulatory authorisation of these vaccines within individual countries.

Jacqueline Weyer: Some countries already have some of these vaccines available and are not using the vaccines necessarily as a mass population vaccination strategy. And this is also not recommended at this stage. Different countries are doing different things in terms of post-exposure prophylaxis, vaccinating high risk individuals, and then also doing pre-exposure vaccination for target groups that are considered to be at highest risk.

Jacqueline Weyer: So these are strategies that are currently being rolled out. It's not being conducted at wide scale in any country yet - coming days and weeks will tell what approach will be taken in South Africa. So with vaccines, it's really always a question about cost benefit. What is the health benefit versus cost of the intervention?

Jacqueline Weyer: And certainly when you are dealing with a disease that's not highly fatal. As, as is the instance with monkeypox and which could be successfully contained through classical containment measures, the cost of a vaccine intervention might not equate the potential health benefit.

Mia Malan: Should South Africa need smallpox vaccines or monkeypox vaccines at some stage, are there vaccines which are currently available? For instance, smallpox vaccines registered in South Africa with our medicine regulator?

Jacqueline Weyer: To my knowledge, no. Though I stand to be corrected. I'm not sure how the historic approval of smallpox vaccines in South Africa, if those would still be valid.

Mia Malan: If registration say is not a problem, would we be able to get our hands on these vaccines?

Mia Malan: Or are we looking at a similar situation as with COVID vaccines where some countries will buy them up first or just have stockpiled them? And we haven't?

Jacqueline Weyer: There's always a risk of that. And this was the case with COVID-19, but it's also been the case with many other diseases over the years. So obviously due to the acute outbreak situation, countries will be clamoring for the stocks that are available, but there are measures in place to address equity.

Mia Malan: Let's get to what do we do now in South Africa? How would you know, if you could potentially have monkeypox? What are the symptoms you need to look out for?

Jacqueline Weyer: So really the characteristic rash is the telling feature. The early features of the disease is much like you would have with many other viral infections, which would be fever, a general flu-like complaints of headaches, and so forth.

Jacqueline Weyer: But that really rapidly progresses to the eruption of the lesions on the skin. So it's fluid filled, blister like lesions, mostly form at roughly the time, which is different from many other rash illnesses where you could have eruption of lesions at different time points. So if you look at the patient in front of you, you will see lesions at different stages of progression or, you know, resolution with monkeypox, they all sort of form at the same time and they go through the stages of progression. Up until the point where they scab over and clear, sort of at the same time, the lesions can be found all over the body, but we also see localisation, for example, only in the genital area, only on the hands, only on the face. There's really quite a variety of presentations. In that sense.

Mia Malan: If you're someone who now sees these blisters on yourself, what do you do? Do you run to the doctor or is that a risk you need close contact to infect people. So maybe you can sit in a waiting room. What is the procedure to follow?

Jacqueline Weyer: So if the lesions are covered, you should be visiting a healthcare facility, whether it's a general practitioner or, you know, a clinic or a hospital, again, because the cause of your condition could be ascribed to many potential causes. And one does want to treat that and manage that, appropriately. Doctors are able to protect themselves by employing what we call universal precaution measures.

Mia Malan: Once the doctor has diagnosed you or taken a sample, what do they do? Do they send you to the NICD or what do they do with it?

Jacqueline Weyer: Currently, the sample will be referred to the NICD through our established referral networks. So these referral networks exist within private, but also within the public sector. This is how we operate every day. So this is no different. Currently the testing is done at the NICD and based on possible escalation of the outbreak, or need to up the volume of testing.

Mia Malan: Lastly, what does a patient do while they wait to see what the outcome of the test is going to be? Do they isolate? And if they need to do that for how long do they need to isolate and for how long will they be infectious?

Jacqueline Weyer: Patient should self-isolate to limit transmission to any additional individuals. Obviously, if the test is negative, the doctor will make further recommendations in terms of whatever the patient is infected with. And then the isolation period for positive cases will be dependent on how the rash resolves. Usually the monkeypox rash will resolve between two to four weeks. So unfortunately for some individuals, this might be, you know, a prolonged isolation, and then just to limit the contact with any other individuals so that we can interrupt the chain of transmission.

Jacqueline Weyer: So it's gonna be mostly a self-isolation approach. Most of these cases don't need hospitalisation. Hospitalisation might be recommended in cases where individuals might find it hard to self-isolate within their personal spaces.

Mia Malan: Does that mean that you are only infectious while you have open blisters and that when you don't have those blisters yet you can't infect other people?

Jacqueline Weyer: That's exactly how we understand that. So until that last scab has fallen off and there's no more signs of the rash, then you are no longer considered infectious.

Mia Malan: That was Dr Jacqueline Weyer from the National Institute for Communicable Diseases. She told us more about monkeypox and what kind of outbreak to expect in South Africa.

Mia Malan: That's it from me, Mia Malan. Goodbye until next time.

Narrator: This was a Bhekisisa podcast.