Monkeypox virus on surfaces: No proof that contact can cause infection

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During the currently evolving outbreak of monkeypox cases outside of known endemic areas, transmission is mainly driven by close physical contact with symptomatic people. While virus transmission between

humans has been described previously, data on environmental contamination of surfaces are rare.

Environmental sampling in patient rooms

Nörz et al. swabbed surfaces in the immediate and adjacent rooms of two hospitalized monkeypox patients in Germany. The patients' isolation rooms were separated from the ward corridor by anterooms, where hospital staff put their personal protective equipment on and off (donning and doffing).

Contamination with up to 10^5 viral copies/cm^2 on inanimate surfaces was estimated by PCR and the virus was successfully isolated from surfaces with more than 10^6 copies.

According to the authors, all the surfaces that the two patients had touched directly showed viral contamination, with the highest loads detected in both bathrooms (e.g. lever, washbasin, toilet seats). Fabrics such as towels, shirts or pillowcases that the patients used frequently also showed viral contamination.

Viral contamination does not equal infectious virus

The authors highlight that there currently are no definite data on what dose of virus leads to infection with monkeypox in humans. However, assumptions are that it requires a significantly higher dose to trigger infection than e.g. variola virus.

Nörz et al. hence stress that "despite high contamination with up to 10^5 cp/cm^2 as well as the successful recovery of monkeypox virus from samples with a total of $>10^6$ copies, our findings do not prove that infection can occur from contact with these surfaces." Additionally,

detecting viral DNA by PCR "cannot be equated with infectious virus."

Prevention of virus spread from symptomatic patients should be individually adapted. Based on their findings, the authors conclude that "regular disinfection of frequent hand and skin contact points during the care processes additional to regular room cleaning and surface disinfection using products with at least virucidal activity against enveloped viruses can reduce infectious virus on surfaces and thereby risk of nosocomial transmission."

The research was published in *Eurosurveillance*.

More information: Dominik Nörz et al, Evidence of surface contamination in hospital rooms occupied by patients infected with monkeypox, Germany, June 2022, *Eurosurveillance* (2022). DOI: 10.2807/1560-7917.ES.2022.27.26.2200477

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