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Secondary Infection Rates After Mpox Exposure in Multiple Settings: A Systematic Review

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Between 2022 and 2024, large number of mpox cases were reported globally, especially Europe and Americas. Additionally, from late 2023 a surge of cases has been observed in Africa.

Objectives: To assess secondary infection rates after mpox exposure in multiple settings; occupational exposures among healthcare workers (HCWs), household exposures, and congregate/community exposures.

Methods: We performed a systematic review that included mpox search in five electronic databases; MEDLINE, Embase, Biosis previews, CAB Abstracts, and Global Index Medicus. All study designs reporting mpox exposure data published between May 2022 and September 2024 were included.

Results: A total 62 studies including 8,712 mpox exposures were included in the current analysis. The exposures included 1738 healthcare exposures, 3331 household exposures, 3643 congregate/community exposures. Out of 8,712 exposures in all settings, 239 were associated with mpox infection, with an overall secondary infection rate of 2.74%. Secondary infection rates were highest in household setting (4.02%), intermediate in congregate/community setting (2.50%), and lowest in healthcare setting (0.81%). Secondary infection rates were highest in AFRO region (8.00%), intermediate in European region (4.23%), and lowest in the American region (1.10%). Clade data were available in 17 (27.4%) studies including 2054 (23.7%) exposures. Clade 2b was the most commonly reported clade (15/17 studies). Secondary infection rates were highest with clade 1a (17.14%), intermediate with clade 2b (1.59%), and lowest with clade 1b (0.0%). Secondary infection in healthcare settings was significantly higher with percutaneous injuries than unspecified nosocomial exposures (27.8% vs 0.2%, $p<0.001$). Close non-sexual contact was the most frequent route of transmission in household setting (75.0%) and congregate/community setting (82.5%). Secondary infection was significantly higher with sexual contact than close non-sexual contact in both settings.