# Features of mpox in fully vaccinated people: an outbreak investigation and retrospective cohort study, New South Wales (NSW), June – November 2024

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**Background**

Since 2022, clade IIb mpox outbreaks have occurred in non-endemic countries, primarily amongst men who have sex with men. Two doses of modified vaccinia Ankara vaccine (MVA-BN) are recommended for people at risk. MVA-BN induced antibodies wane within a year of vaccination, however the clinical significance is unknown.

**Objectives**

To characterise mpox outbreak cases in NSW and determine whether vaccination continues to attenuate disease beyond the point at which MVA-BN antibodies are known to wane.

**Methodology**

We included all mpox cases notified in NSW between 20 June – 20 November 2024. Cases and clinicians were interviewed. Cases were classified as fully vaccinated if they had received two MVA-BN doses, and partially vaccinated if they had received one. Risk ratios were calculated for clinical outcomes (anogenital lesions, extragenital lesions, systemic symptoms, hospitalisation) by vaccination status.

**Results**

During the study period 674 people were diagnosed with mpox. Vaccination status was ascertained for 98% (663/674), with 37% fully vaccinated, 11% partially vaccinated, and 50% unvaccinated. In fully vaccinated people, the median time between dose two and symptom onset was 21.8 months (IQR 19.5–23.0 months). Compared to unvaccinated people, fully vaccinated people were less likely to be hospitalised (RR 0.11 [95% CI 0.03–0.43]), have extragenital lesions (RR 0.45[0.36–0.56]) or systemic symptoms (RR 0.72[0.64–0.80]), but more likely to have anogenital lesions (RR 1·11[1·05–1·18]).

**Discussion/conclusion**

To our knowledge, our analysis provides the first clinical evidence that protection against hospitalisation and disseminated mpox persists beyond the point at which serological studies have found that MVA-BN-induced antibodies wane.