Ballpark figure? Estimating who's eligible for mpox vaccination in Aotearoa New Zealand

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Background:
During the 2022 mpox pandemic and facing global vaccine shortages, Aotearoa New Zealand (NZ) received 5000 initial vials in January 2023. Fractional dosing via intradermal administration could extend this to 25,000 doses. Since mpox is transmitted more easily than HIV, estimates of men who have sex with men (MSM) using HIV pre-exposure prophylaxis (PrEP) were insufficient. We developed a range of estimates of MSM who might benefit from mpox vaccination, to inform Government decision-making, guide delivery and evaluate coverage.

Methods:
To enumerate the MSM population in NZ, we used three data sources (NZ Health Survey 2014/15 and 2021/22, Household Economic Survey 2022) and two measures (gay or bisexual identity, same-sex behaviour <12 months). We applied these proportions to the male population aged 16-69 as of June 2022. Then, we used behavioural estimates <6 months from the 2022 Sex and Prevention of Transmission Study (SPOTS) to propose mpox vaccine priority sub-populations based on PrEP use, number of partners, and their geographic profile.

Results:
The proportion being MSM varied from 2.1% (same-sex behaviour <12 months, NZHS 2014/15) to 4.0% (gay or bisexual identity, NZ Health Survey 2021/2), therefore between 36,600 and 69,700 MSM. SPOTS behavioural estimates were: on PrEP (25%); >1 partner (59%); >5 partners (29%); >10 partners (12%); >1 partner or PrEP (63%); >5 partners or PrEP (40%); >10 partners or PrEP (32%). Consequently, the potential sub-populations for priority mpox vaccination were 4800 (lower) to 41,100 (upper). Geographic profile was sensitive to behavioural criteria (e.g. Auckland was home to 41% of all MSM but 49% of MSM on PrEP).

Conclusion:
A simple criteria of >1 recent partner (enumerating ~24,200 MSM) approximated NZ's vaccine supply for fractional first doses. Two-dose coverage will depend on vaccine supply, administration mode and yield. These methods can help estimate future gonorrhoea vaccine and Doxy-PEP delivery.

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