Targeted vaccination programme successful in reducing acute Hepatitis B in men having sex with men in Amsterdam, The Netherlands

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**Background:** In the Netherlands, transmission of hepatitis B virus (HBV) occurs mainly within behavioural high-risk groups, such as in men who have sex with men (MSM). Therefore, a vaccination programme has targeted these high-risk groups. Previous evaluations of this programme up until 2006 (incidence trend analysis, mathematical modelling and molecular sequence models) could prove no impact. This study evaluates the impact of the vaccination programme targeting Amsterdam’s large population of MSM from 1998 through 2011.

**Methods:** We used Amsterdam data from the national database of the vaccination programme for high-risk groups (January 1, 1998 to December 31, 2011). Programme and vaccination coverage were estimated with population statistics. Incidence of acute HBV was analyzed with notification data from the Amsterdam Public Health Service (1992 to 2011). Mathematical modelling accounting for vaccination data and trends in sexual risk behaviour was used to explore the impact of the programme.

**Results:** At the end of 2011, programme coverage was estimated at 41% and vaccination coverage 30% to 38%. Most participants (67%) were recruited from the outpatient department for sexually transmitted infections and outreach locations such as saunas and gay bars. Incidence of acute HBV dropped sharply after 2005. (figure 1) The mathematical model in which those who engage most in high-risk sex are vaccinated, best explained the decline in incidence.

**Conclusions:** Transmission of HBV among Amsterdam’s MSM has decreased, despite ongoing high-risk sexual behaviour. International concern also exists about the effectiveness of such programmes when the uptake or coverage remains low. This study proves that a targeted vaccination programme can be effective with vaccination coverage below 40%, as long as MSM who engage most in high-risk sex, such as clients of STI clinics, are reached.

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