

## SHORT REPORT

# Attendance of MSM at Genitourinary Medicine services in England: implications for selective HPV vaccination programme (a short communication)

Jake Bayley,<sup>1,2</sup> David Mesher,<sup>2</sup> Tom Nadarzynski,<sup>3,4</sup> Gwenda Hughes,<sup>2</sup> Kate Soldan<sup>2</sup>

<sup>1</sup>Department of Sexual Health and HIV, Barts Healthcare NHS Trust, London, UK

<sup>2</sup>Public Health England, London, UK

<sup>3</sup>Department of Psychology, University of Southampton, Southampton, UK

<sup>4</sup>Royal South Hants Hospital, Solent NHS Trust, Southampton, UK

## Correspondence to

Dr Jake Bayley, Barts Healthcare NHS Trust, Newham University Hospital, Glen Road, Plaistow, London E13 8SL, UK; [jake.bayley@bartshealth.nhs.uk](mailto:jake.bayley@bartshealth.nhs.uk)

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## ABSTRACT

**Background** Human papillomaviruses (HPV) immunisation programmes for female adolescents in the UK offer relatively little benefit to men who have sex with men (MSM). Targeted HPV vaccination for MSM may reduce the high incidence of HPV-related disease among MSM. We used national data from sexual health clinics to calculate the number of MSM attending these clinics throughout England from 2009 to 2014 and to identify their characteristics, to inform the implementation of a targeted HPV vaccination programme in MSM.

**Methods** We used the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2) to obtain data for men aged 15–70 years who had attended a GUM clinic in England from 2009 to 2014. We analysed both numbers of MSM attending and number of GUM attendances, age at first attendance, ethnicity and geographical area of the clinic in England.

**Results** A total of 374 983 MSM attended sexual health services in England between 2009 and 2014. Median age of presentation was 32 years (IQR 25–41) and showed regional geographical variation. Of all men attending sexual health clinics in England, the highest proportion of those identifying as MSM was in London (21%). Excluding visits within 1 month of an initial attendance, 49% of all MSM re-attended within 12 months and 58% within 24 months. MSM aged  $\geq 36$  years reattended more frequently than younger MSM. 51% reattended at least twice within 24 months of initial visit.

**Conclusions** The majority of MSM reattend clinic at least once within a 24-month period, potentially facilitating the delivery of a three-dose HPV vaccination programme. This would reduce the burden on sexual health clinics and cost to local authorities due to extra visits if HPV vaccination were to be delivered through these services.

## INTRODUCTION

Men who have sex with men (MSM) are at increased risk of genital warts and anal cancers largely caused by persistent human papillomaviruses (HPV) infection.<sup>1</sup> HPV infection is common in MSM across all age groups. A study conducted in a London-based clinic showed a prevalence of any HPV infection of 72%.<sup>2</sup>

The HPV vaccines have approximately 90% efficacy against the incidence of vaccine-type high-grade anal dysplasia in MSM not already infected with HPV types 16 and 18.<sup>3</sup> In 2008, the UK

introduced a national HPV immunisation programme targeted at 12–13-year-old girls. While heterosexual males are expected to gain indirect herd protection, MSM are unlikely to be protected by the female-only vaccination programme. In 2015, the Joint Committee of Vaccinations and Immunisations (JCVI) advised vaccination of MSM aged 16–45 years attending Genitourinary Medicine (GUM) clinics and HIV clinics using the quadrivalent HPV vaccine (protecting against HPV types 6, 11, 16 and 18).<sup>4</sup> Following this advice, an HPV vaccination pilot has been introduced in selected GUM and HIV clinics across England from 2016.<sup>5</sup> Three doses of vaccine are recommended for those aged  $>15$  years, with second and third doses ideally being 1 and 4–6 months after the initial vaccination, respectively. However, gaps of up to 24 months between doses are clinically acceptable.<sup>5</sup>

The design and implementation of this advice is affected by the characteristics of MSM attending sexual health clinics and their attendance patterns.

We used national surveillance data submitted to Public Health England (PHE) to describe attendance patterns at GUM clinics throughout England, to inform the development of the MSM-HPV vaccination programme.

## METHODS

Data were extracted from the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2) that contains electronic data on attendances at GUM clinics in England. This data set contains patient demographics including age, ethnicity and sexual risk.<sup>6</sup> At each attendance, patients are categorised as heterosexual, bisexual, homosexual or unknown. In this analysis, sexual risk was classified as MSM if their GUMCADv2 record showed homosexual or bisexual at any visit.

We considered the numbers of MSM attending a GUM clinic at least once and numbers of attendances for this population from 1 January 2009, when GUMCAD began recording these data, to 31 December 2014. Data were presented on the age and clinic location (according to PHE centre: East Midlands, East of England, London, North East, North West, South East, South West, West Midlands and Yorkshire and Humber) of the first recorded attendance within this time period for each MSM attender. The total number of men attending GUM clinics in England, regardless of sexuality, was also captured to compare proportions of MSM in the overall male population for each PHE centre.



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We also looked at the proportion of MSM reattending at the same GUM clinic within specific intervals (1–3, 4–6, 7–12, 13–18 and 19–24 months) after an initial visit. The initial visit was restricted to attendances until the end of 2012 to allow 24 months follow-up time for reattendance. These results were stratified by age group (16–25, 26–35, 36–45, >45 years) and clinic location. Data were analysed using STATA V.13 (College Station, Texas, USA).

## RESULTS

A total of 374 983 MSM attended a GUM clinic and there were 1 787 234 attendances between the start of 2009 and end of 2014. 21.3% of all men attending in London were identified as MSM. This proportion varied between 7% and 11% in other PHE centres across England. The median age was 32 years (IQR 25–41). This varied across regions with the lowest median age in the North East of England at 27 years (IQR 22–39) and the highest median age in London at 32 years (IQR 26–41) and the South East 32 years (IQR 24–43). Approximately 85% of MSM were white, 5% black, 4% Asian, 3% mixed race and 4% reported as other ethnicity. Just under 72% of these men were born in the UK.

There were 78 767 MSM who attended a GUM service in England in 2009. This increased in subsequent years to 89 916 MSM attending in 2010, 101 766 in 2011, 117 264 in 2012, 125 485 in 2013 and 140 007 in 2014. Of these, 78 767 (100%), 49 869 (55%), 54 617 (54%), 61 346 (52%), 62 445 (50%) and 67 939 (49%) were the first recorded attendance at that clinic (within the 2009–2014 period) for 2009, 2010, 2011, 2012, 2013 and 2014, respectively.

The proportions of MSM reattending at the same GUM clinic are shown in table 1. Excluding attendances within 1 month of the initial visit which would not be useful in the HPV vaccination programme, 58% of MSM reattended the same clinic at least once over the next 24-month period. The proportion of MSM reattending was higher in the older age groups (>36 years of age) and in MSM attending clinics outside of London.

Between 2009 and 2014, around 375 000 MSM attended a GUM clinic in England with over half of these attendances at clinics in London (53%). There was significant geographical variation of reattendance, with MSM outside of London attending more frequently within 6 months, and therefore able to receive HPV vaccination, when compared with MSM in London (see table 1). Those aged 36–45 years were more likely to reattend services than those aged <36 years, and this was higher still in those MSM living outside London.

## DISCUSSION

These analyses show that high proportions of MSM attend GUM clinics (especially in London), which suggests that GUM clinics are an appropriate venue for delivery of an HPV vaccination schedule. Furthermore, over half of MSM reattend within 2 years, hence not all follow-up doses would incur additional clinic visits. These analyses show that high proportions of MSM attend GUM clinics (especially in London), which suggests that GUM clinics are an appropriate venue for delivery of an HPV vaccination schedule. Furthermore, over half of MSM reattend within 2 years, hence not all follow-up doses would incur additional clinic visits.

GUMCAD data are unable to identify patients attending different clinics, which complicates the interpretation of these data for two reasons. First, numbers of MSM attending GUM clinics (and new attendances each year) are likely to be overestimated as MSM attending more than one clinic will be counted on more than one occasion. London has far more clinics than any other urban area and this will explain the relatively low reattendance in London clinics than in other parts of England. Second, the 'initial visit' in GUMCAD is 'at that clinic' and cannot trace history between clinics, leading to overestimation of attendances overall, but an underestimation of repeat attendances, especially in London given the greater choice of clinics to attend.

Another potential limitation is that sexual risk is sourced from GUMCADv2 only. MSM includes men recorded as homosexual or bisexual at any visit. In most cases, this information is

**Table 1** Cumulative proportion of men who have sex with men (MSM) reattending at the same Genitourinary Medicine (GUM) clinic by time since first recorded attendance, clinic location and age group

	Number of MSM attending between 2009 and 2012	Reattendance visits between 2009 and 2014 (%)				
		1–3 months	1–6 months	1–12 months	1–18 months	1–24 months
All clinics (years)						
<25	63 978	14 646 (22.9)	21 779 (34.0)	28 973 (45.3)	32 746 (51.2)	34 863 (54.5)
26–35	80 836	23 895 (29.6)	29 346 (36.3)	39 076 (48.3)	43 552 (53.9)	46 058 (57.0)
36–45	57 688	18 104 (31.4)	23 148 (40.1)	29 852 (51.7)	33 083 (57.3)	34 830 (60.4)
≥46	42 097	14 334 (34.0)	17 974 (42.7)	22 549 (53.6)	24 921 (59.2)	26 158 (62.1)
All ages	244 599	60 834 (24.9)	92 247 (37.7)	120 450 (49.2)	134 302 (54.9)	141 909 (58.0)
London (years)						
<25	25 185	5114 (20.3)	8135 (32.3)	11 074 (44.0)	12 427 (49.3)	13 148 (52.2)
26–35	49 697	10 511 (21.2)	16 982 (24.2)	23 289 (46.9)	26 031 (52.4)	27 500 (55.3)
36–45	34 044	7674 (22.5)	12 444 (36.6)	16 797 (49.3)	18 762 (55.1)	19 805 (58.2)
≥46	20 681	4796 (23.2)	7911 (38.3)	10 479 (50.7)	11 695 (56.5)	12 325 (59.6)
All ages	129 607	28 095 (21.7)	45 472 (35.1)	61 639 (47.6)	68 915 (53.2)	72 778 (56.2)
Outside of London (years)						
<25	38 793	9532 (24.6)	13 644 (35.2)	17 899 (46.1)	20 319 (52.4)	21 715 (56.0)
26–35	31 139	13 384 (43.0)	12 364 (39.7)	15 787 (50.7)	17 521 (56.3)	18 558 (59.6)
36–45	23 644	10 430 (44.1)	10 704 (45.3)	13 055 (55.2)	14 321 (60.6)	15 025 (63.5)
≥46	21 416	9538 (44.5)	10 063 (47.0)	12 070 (56.4)	13 226 (61.8)	13 833 (64.6)
All ages	114 992	32 739 (28.5)	46 775 (40.7)	58 811 (51.1)	65 387 (61.8)	69 131 (60.1)

collected at the sexual health consultation and will reflect a patient's sexual behaviour rather than their sexual identity. However, it is possible that some men who identify as heterosexual but have same sex behaviour will be missed by this analysis.

Using official population estimates from the Office of National Statistics and prevalence of MSM from Natsal-3<sup>7</sup> (reporting at least one same-sex partner in the last five years—a prevalence of 3.9% (95% CI 2.4% to 6.0%) in London and 2.3% (95% CI 1.9% to 2.9%) for the rest of England (excluding London)), we estimate that the proportion of MSM attending GUM clinics is much higher in London than the rest of England with between 34% and 60% of all MSM from 2009 to 2014 in London attending compared with between 11% and 18% elsewhere in England. These figures are comparable to estimates from self-reported experiences to Natsal-3 with 30.8% (95% CI 15.0% to 53.0%) of all MSM reporting attending GU services over a 1-year period in London and 15.9% (95% CI 10.1% to 24.2%) in the rest of England, excluding London (Cath Mercer, personal communication, 2014).

An important outcome of a targeted HPV vaccination programme is the proportion of MSM who receive a first dose of HPV vaccine and complete the full course. The JCVI has advised that all MSM aged <45 years should receive three doses of quadrivalent vaccine.<sup>4</sup> Of MSM attending between by 2012, around one-third attended for a follow-up visit between 1 and 3 months after their initial visit and around one-third between 6 and 12 months. One way to limit additional follow-up visits would be to provide contemporaneously with hepatitis B vaccine, which has a similar dosing schedule if not given over a shorter time period for high-risk MSM. Extra visits may be required for those who are already vaccinated against hepatitis B. Extra visits for HPV vaccination would have implications for patients' compliance/course completion as well as for costs, and need to be monitored in practice.

These data have been used to inform the likely cost-effectiveness and the design of the HPV-MSM programme.<sup>8</sup> As this programme implementation starts, GUMCAD data will be well placed to monitor attendances (including potential additional attendances attracted by HPV vaccination), vaccine uptake and course completion.

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**Twitter** Follow Jake Bayley @drjakebayley

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**Competing interests** None declared.

**Patient consent** As GUMCADv2 is a routine public health surveillance activity, no specific consent was required from the patients whose data were used in this analysis.

**Ethics approval PHE has permission to handle data obtained by GUMCADv2** under Section 251 of the UK National Health Service Act of 2006 (previously Section 60 of the Health and Social Care Act of 2001), which was renewed annually by the ethics and confidentiality Committee of the National Information Governance Board until 2013. Since then the power of approval of public health surveillance activity has been granted directly to PHE.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** GUMCADv2 is a national surveillance and monitoring database which is open to those who work for Public Health England. Data are shared among all those who prepare reports and documents into the trends and epidemiology into STIs and HIV in England.

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