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**Attendance of MSM at Genito-Urinary Medicine services in England: implications for selective HPV vaccination programme [a short communication]**

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## **ABSTRACT**

**Background:** 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 amongst 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 Genito-Urinary Medicine Clinic Activity Dataset (GUMCADv2) to obtain data for men aged 15-70 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 one month of an initial attendance, 49% of all MSM re-attended within 12 months and 58% within 24 months. MSM aged 36 years or above re-attended more frequently than younger MSM. 51% re-attended at least twice within 24 months of initial visit.

**Conclusion:** The majority of MSM re-attend clinic at least once within a 24 month period, potentially facilitating the delivery of a three dose HPV vaccination program. 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.

**Key message points**

**A large number of MSM attend GUM clinics, half of whom are under 32 years of age.**

**58% of all MSM re-attend within 24 months of the initial visit, with older age groups attending more frequently which may facilitate a HPV vaccination program if 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.[1] 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%.[2]

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.[3] In 2008, the UK introduced a national HPV immunisation programme targeted at 12-13 year old girls. Whilst 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 Genito-Urinary Medicine (GUM) clinics and HIV clinics using the quadrivalent HPV vaccine (protecting against HPV types 6,11,16 and 18).[4] Following this advice, an HPV vaccination pilot has been introduced in selected GUM and HIV clinics across England from 2016 [5]. Three doses of vaccine are recommended for those aged over 15 years, with second and third doses ideally being one and four-six months after the initial vaccination respectively. However, gaps of up to 24 months between doses are clinically acceptable. [5]

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 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 dataset contains patient demographics including age, ethnicity and sexual risk.[6] 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<sup>st</sup> January 2009, when GUMCAD began recording these data, to 31<sup>st</sup> 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.

We also looked at the proportion of MSM re-attending 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 re-attendance. These results were stratified by age group (16-25, 26-35, 36-45, over 45 years) and clinic location.

Data were analysed using STATA version 13 (College Station, TX).

## 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 old (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 re-attending at the same GUM clinic are shown in Table 1. Excluding attendances within one month of the initial visit which would not be useful in the HPV vaccination program, 58% of MSM re-attended the same clinic at least once over the next 24-month period. The proportion of MSM re-attending was higher in the older age-groups (over 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 re-attendance, with MSM outside London re-attending within 6 months, and therefore able to receive HPV vaccination, were higher when compared to MSM in London (see Table 1). Those aged 36-45 years were more likely to re-attend services than those less than aged 36 years, and this was higher still in those MSM living outside

London. The vaccination program may want to focus on younger MSM in London to ensure completion of the HPV course.

## **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 re-attend 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. Firstly, numbers of MSM attending GUM clinics (and new attendances each year) is 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 re-attendance in London clinics than in other parts of England. Secondly, 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 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 [7] (reporting at least one same sex partner in the last 5 years- a prevalence of 3.9% (95% CI 2.4-6.0%) in London and 2.3% (95% CI 1.9-2.9%) for the rest of England (excluding London), we estimate 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 to 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%-53.0%) of all MSM reporting attending GU services over a one-year period in London, and 15.9% (95% CI 10.1%-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 have advised that all MSM aged less than 45 years should receive three doses of quadrivalent vaccine.[4] Of MSM attending between by 2012, around one-third attended for a follow-up visit between 1-3 months after their initial visit and around one-third between 6-12 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 needs to be monitored in practice.

These data have been used to inform the likely cost-effectiveness and the design of the HPV-MSM programme.[8] 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.

Word count: 1456

**Table 1:** Cumulative proportion of MSM re-attending at the same GUM clinic by time since first recorded attendance, clinic location and age-group

	Number of MSM attending between 2009 and 2012	Re-attendance visits between 2009 and 2014 (%)				
		1-3 months	1-6 months	1-12 months	1-18 months	1-24 months
<b>All clinics</b>						
<25 years old	63,978	14646 (22.9)	21779 (34.0)	28973 (45.3)	32746 (51.2)	34863 (54.5)
26-35 years old	80,836	23895 (29.6)	29346 (36.3)	39076 (48.3)	43552 (53.9)	46058 (57.0)
36-45 years old	57,688	18104 (31.4)	23148 (40.1)	29852 (51.7)	33083 (57.3)	34830 (60.4)
≥46 years old	42,097	14334 (34.0)	17974 (42.7)	22549 (53.6)	24921 (59.2)	26158 (62.1)
<i>All ages</i>	<i>244,599</i>	<i>60834 (24.9)</i>	<i>92247 (37.7)</i>	<i>120450 (49.2)</i>	<i>134302 (54.9)</i>	<i>141909 (58.0)</i>
<b>London</b>						
<25 years old	25,185	5114 (20.3)	8135 (32.3)	11074 (44.0)	12427 (49.3)	13148 (52.2)
26-35 years old	49,697	10511 (21.2)	16982 (24.2)	23289 (46.9)	26031 (52.4)	27500 (55.3)
36-45 years old	34,044	7674 (22.5)	12444 (36.6)	16797 (49.3)	18762 (55.1)	19805 (58.2)
≥46 years old	20,681	4796 (23.2)	7911 (38.3)	10479 (50.7)	11695 (56.5)	12325 (59.6)
<i>All ages</i>	<i>129,607</i>	<i>28095 (21.7)</i>	<i>45472 (35.1)</i>	<i>61639 (47.6)</i>	<i>68915 (53.2)</i>	<i>72778 (56.2)</i>
<b>Outside of London</b>						
<25 years old	38,793	9532 (24.6)	13644 (35.2)	17899 (46.1)	20319 (52.4)	21715 (56.0)
26-35 years old	31,139	13384 (43.0)	12364 (39.7)	15787 (50.7)	17521 (56.3)	18558 (59.6)
36-45 years old	23,644	10430 (44.1)	10704 (45.3)	13055 (55.2)	14321 (60.6)	15025 (63.5)
≥46 years old	21,416	9538 (44.5)	10063 (47.0)	12070 (56.4)	13226 (61.8)	13833 (64.6)
<i>All ages</i>	<i>114,992</i>	<i>32739 (28.5)</i>	<i>46775 (40.7)</i>	<i>58811 (51.1)</i>	<i>65387 (61.8)</i>	<i>69131 (60.1)</i>

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#### References:

1. Chin-Hong P, Vittinghoff E, Cranston R, et al. Age-Specific Prevalence of Anal Human Papillomavirus Infection in HIV-Negative Sexually Active Men Who Have Sex with Men: The EXPLORE Study. *J Infect Dis.* 2004;190(12):2070-2076.
2. King E, Gilson R, Beddows S, et al. Human papillomavirus DNA in men who have sex with men: type-specific prevalence, risk factors and implications for vaccination strategies. *Br J Cancer* 2015;112(9):1585-93.
3. Palefsky J, Giuliano A, Goldstone S, et al. HPV Vaccine against Anal HPV Infection and Anal Intraepithelial Neoplasia. *N Engl J Med.* 2011;365(17):1576-85
4. Department of Health UK. JCVI statement on HPV vaccination of men who have sex with men. November 2015
5. Public Health England. HPV vaccination pilot for men who have sex with men: clinical and operational guidance for healthcare professionals. May 2016
6. Savage E, Mohammed H, Leong G, et al. Improving surveillance of sexually transmitted infections using mandatory electronic clinical reporting: the genitourinary medicine clinic activity dataset, England, 2009 to 2013. *Euro Surveill.* 2014;19(48):20981
7. Mercer CH, Prah P, Field N, et al. The health and well-being of men who have sex with men (MSM) in Britain: Evidence from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *BMC Public Health* 2016;16:525
8. Lin A, Ong K, Hobbelen P, et al. Impact and cost-effectiveness of selective human papillomavirus vaccination of men who have sex with men. *Clin Infect Dis* 2016 [Online]. Available at <http://cid.oxfordjournals.org/content/early/2016/12/23/cid.ciw845.abstract>. [Accessed 17 January 2016]

