

# Trends in anogenital warts and anogenital herpes simplex virus infection in the United Kingdom: 1996 to 2005

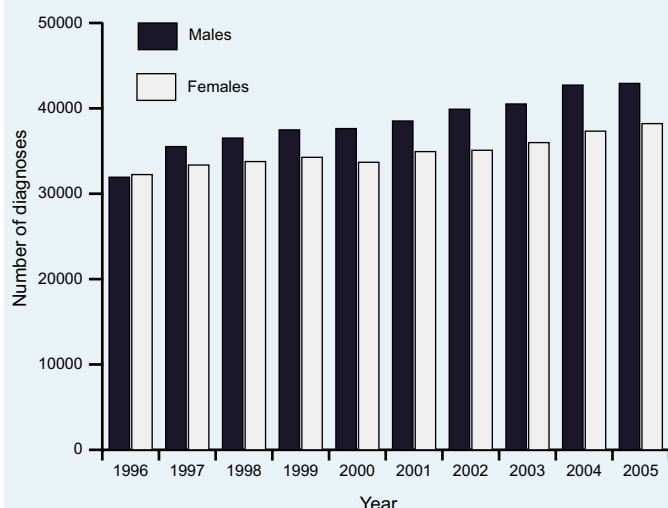
This review summarises the epidemiology of anogenital warts and anogenital herpes simplex virus infection in the United Kingdom (UK) from 1996 to 2005, based on all diagnoses of anogenital warts (first attack) and anogenital herpes simplex (first attack) infection made in genitourinary (GUM) clinics and reported on the statutory quarterly KC60 and STISS/ISD(D)5 returns.

## Anogenital warts

Anogenital warts are the most common viral sexually transmitted infection (STI) in the UK. The number of diagnoses of anogenital warts made in GUM clinics has gradually increased over the last ten years. The infection is caused by a human papillomavirus (HPV). More than 40 genotypes of HPV infect the epithelial lining of anogenital tract [1] with types 6 and 11 being responsible for the majority of the anogenital warts and low risk genital lesions [2,3]. Genital warts are most common among young and sexually active individuals [4] and frequently associated with co-existing STIs [5]. Diagnoses seen in GUM clinics represent a small proportion of the total number of HPV infection within the population as many genital warts are asymptomatic and unrecognised. Over 20 types of HPV are associated with cervical cancer [6]. High risk types 16 and 18 are associated with the majority of cervical cancer cases in women [7] and penile and anogenital cancer in men [8]. Recent studies found HPV type 16 to be the most prevalent HPV type worldwide [9].

In 2005, there were 81,137 diagnoses of anogenital warts (first attack) made in GUM clinics throughout the UK, of which 53% were in males and 47% in females (figure 1). There has been a 1.4% increase since 2004, and a 26% increase since 1996 in the total number of diagnoses. Diagnoses in males increased by 34% and in females by 18% in the last ten years. In 2005,

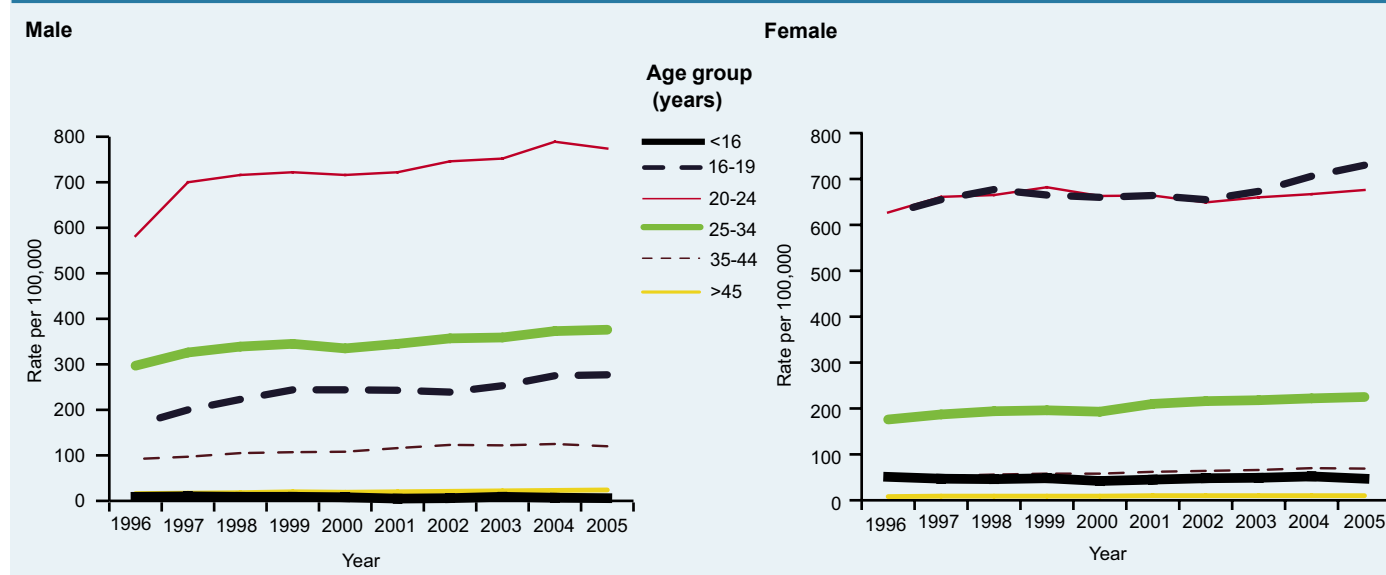
**Figure 1** Number of new diagnoses of genital warts (first attack) by sex, GUM clinics: 1996 to 2005



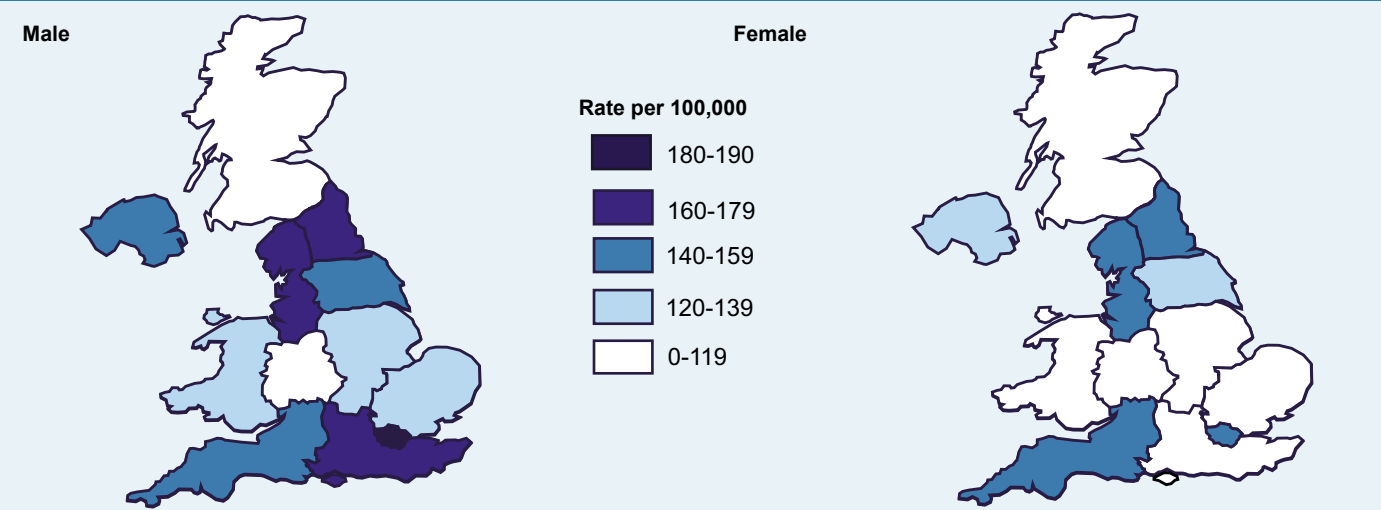
6% (2595/42,924) of male cases were in men who have sex with men (MSM) compared to 4.6% (1471/31,934) in 1996. The absolute number of anogenital warts cases in MSM increased by 76% (from 1471 to 2595) between 1996 and 2005.

The highest rates of anogenital warts were seen in males aged 20 to 24 years (774 per 100,000) and females aged 16 to 19, and 20 to 24 years (730 and 676/100,000 respectively) in 2005 (figure 2). Over the past decade, however, the greatest increase (66%, from 167 to 277/100,000) in the incidence of anogenital warts has been observed in males in the 16 to 19 years age group. Incident rates decreased in the under

**Figure 2** Rates of diagnoses (per 100,000) of genital warts (first attack) by sex and age group: 1996 to 2005



**Figure 3 Rate of diagnoses (per 100,000) of anogenital warts (first attack) by sex and region/country: 2005**



16 years age group for both males and females during this period.

All regions across the UK recorded increases in the rates of anogenital warts in both males and females from 1996 to 2005. The highest rates of anogenital warts diagnoses in both males and females were observed in London (188/100,000 and 150/100,000 respectively) (figure 3). The rate of increase in London was the lowest in the UK (8% for males and 2% for females between 1996 and 2005). Outside London, the highest rates for both males and females were observed in the North West region (173 and 143/100,000 respectively). North West region and Northern Ireland also saw the largest increase in incidence in the last ten years (by 47% and 42% for males and of 28% and 38% for females respectively). The lowest rates in both males and females were recorded in the West Midlands (118 and 103/100,000 respectively) and East Midlands (126 and 110/100,000 respectively) regions (table 1).

**Anogenital herpes simplex virus (HSV)**

Genital herpes is the most common ulcerative STI diagnosed in the UK [8]. Generally HSV-1 is associated with oro-labial

herpes and HSV-2 – with genital herpes. Recent studies, however, have demonstrated that HSV type 1 is becoming more common as a cause of primary genital herpes in developed countries [10-12]. Risk factors for genital herpes are the number of sexual partners, female gender, male homosexuality, previous STIs [13] and for HSV-1 genital infections – oral sex [14, 15]. Studies have reported that anogenital HSV may facilitate HIV transmission [16] and cause severe systemic disease in immunocompromised people and neonates[17]. Most people with genital herpes are asymptomatic, and undiagnosed infections play an important role in the transmission of infection [18].

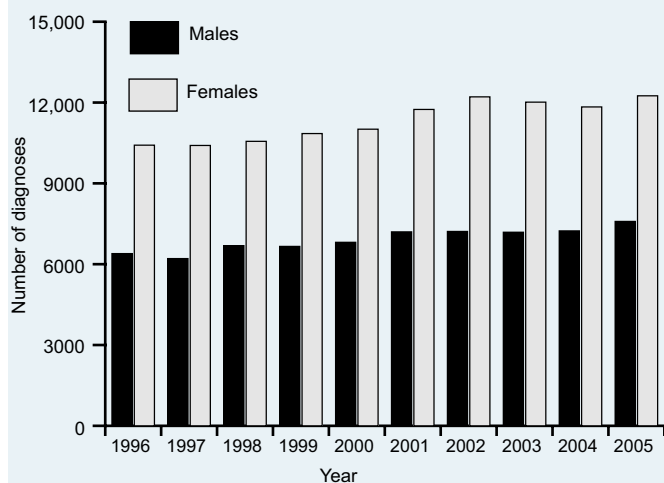
In 2005, 19,837 diagnoses of anogenital herpes simplex infection (first attack) were made in GUM clinics in the UK, of which 38% were among men and 62% among women (male to female diagnostic ratio 1:1.6) (figure 4). This represents an 18% increase in total cases since 1996 and a 4% increase from 2004 with a similar pattern of increase in both genders. Between 2004 and 2005, the number of diagnoses increased by 4.9% and 3.5% in males and females respectively. The number of first attack cases in MSM in 2005 was 624 (8.2% of all male

**Table 1 Region-specific diagnostic rates\* (per 100,000) of anogenital warts (first attack) and anogenital herpes (first attack) by gender: 1996 and 2005 comparison**

Region/Country	Rate of Anogenital warts						Rate of Anogenital herpes					
	Males			Females			Males			Females		
	1996	2005	% Change	1996	2005	% Change	1996	2005	% Change	1996	2005	% Change
North East	119	163	37	113	141	25	11	18	66	19	30	60
North West	118	173	47	111	143	28	17	28	67	28	41	48
Yorkshire & the Humber	118	145	23	116	122	4	19	23	20	34	38	14
East Midlands	99	126	28	102	110	8	19	19	-3	34	32	-6
West Midlands	93	118	27	94	103	10	21	23	9	32	36	13
East of England	94	128	36	95	117	23	19	21	11	32	36	12
London	174	188	8	147	150	2	54	54	-1	73	75	3
South East	105	130	23	104	118	13	25	23	-8	40	39	-3
South West	101	141	40	105	125	20	20	25	21	29	32	11
<b>Wales</b>	<b>107</b>	<b>131</b>	<b>23</b>	<b>97</b>	<b>113</b>	<b>17</b>	<b>16</b>	<b>14</b>	<b>-8</b>	<b>21</b>	<b>27</b>	<b>26</b>
<b>Northern Ireland</b>	<b>101</b>	<b>143</b>	<b>42</b>	<b>91</b>	<b>125</b>	<b>38</b>	<b>8</b>	<b>8</b>	<b>-1</b>	<b>13</b>	<b>20</b>	<b>54</b>
<b>Scotland</b>	<b>103</b>	<b>141</b>	<b>37</b>	<b>93</b>	<b>114</b>	<b>23</b>	<b>15</b>	<b>21</b>	<b>42</b>	<b>20</b>	<b>31</b>	<b>53</b>

\*Rates are presented as rounded figures, but percentage changes are calculated using actual values.

**Figure 4** Number of new diagnoses of genital herpes (first attack) by sex: 1996 to 2005

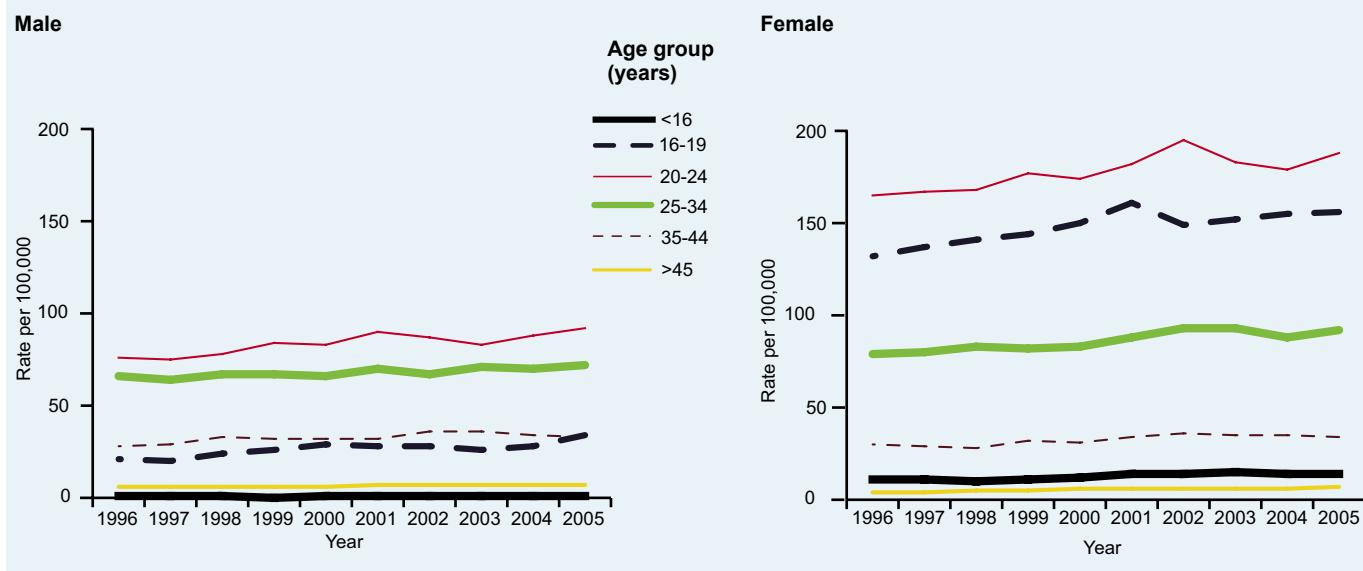


cases) compared to 422 in 1996 (6.6% of all male cases). This represents a 19% increase since 2004 and a 48% increase since 1996 in absolute numbers of anogenital HSV cases in MSM.

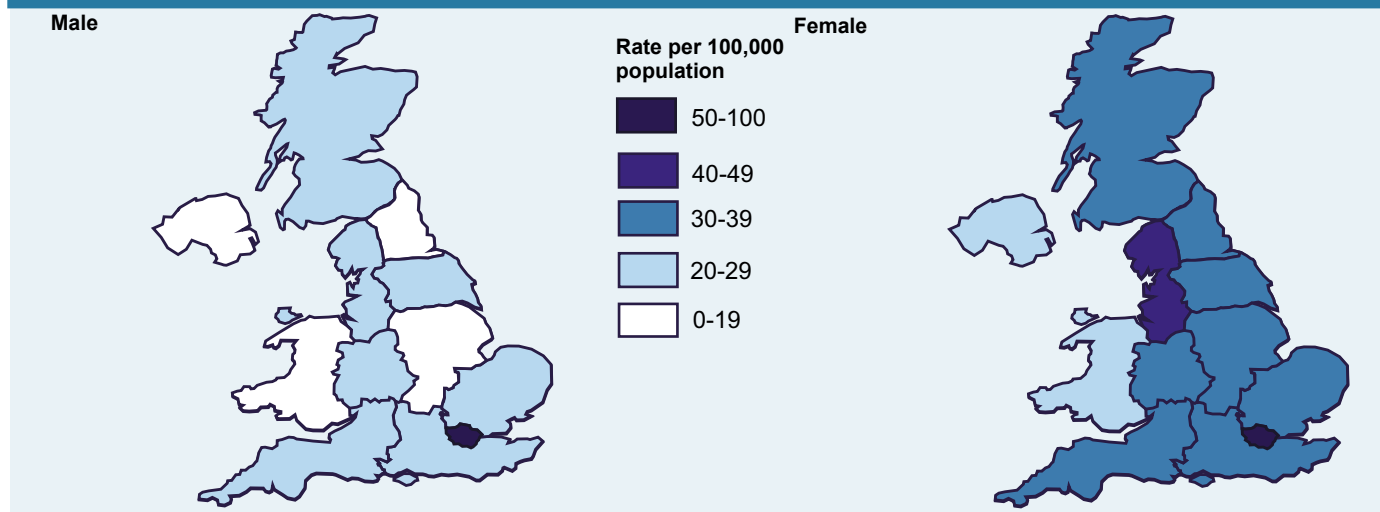
In 2005, diagnostic rates were higher among females, in the 20 to 24 and 16 to 19 age groups (188 and 156/100,000 respectively) compared to all male age groups. In 2005, the highest rate in males was in the 20 to 24 years age group (92/100,000) (figure 5). Overall, rates continue to be higher for females than males in all ages under 44 years with similar rates observed in both genders in the over 44 years age groups. In females, increases in HSV rates ranged from 13% to 19% over the ten year period in all age groups (except in the over 44 years age group which had a 52% rise). In males, however, the anogenital HSV rate in the 16 to 19 years age group increased by 63% in the last decade; this was disproportionately higher compared to all other age groups.

In 2005, region-specific anogenital herpes rates ranged from the lowest in Northern Ireland (8/100,000 in males and 20/100,000 in females) to the highest in London (54/100,000 in males and 75/100,000 in females) (figure 6). The magnitude

**Figure 5** Rates of diagnoses (per 100,000) of genital herpes (first attack) by sex and age group: 1996 to 2005



**Figure 6** Rate of diagnoses (per 100,000) of genital herpes simplex (first attack) by sex, region/country: 2005



of increase over the ten year period was the greatest in both genders in northern areas of the UK (North East, North West, and Scotland). Rates in Northern Ireland among females increased substantially, while rates in males remained stable from 1996 to 2005. In the South East and East Midland regions declines in the incidence of anogenital HSV in both genders were recorded in the last ten years (ranging from 3% to 8%), while rates in London remained broadly similar (table 1).

## Conclusions

Over the last ten years there has been a continuing upward trend in the numbers of anogenital warts (first attack) and anogenital herpes (first attack) diagnoses in the UK. The majority of cases of genital herpes occur in women, while anogenital warts are now more common in men. Incidence rates of these infections are largest in young people of both genders, with males in the 16 to 19 years age group and men who have sex with men showing substantial rates of recent increases of these infections.

Although the rates of anogenital warts and anogenital herpes infections remain highest in London, the levels continued to be broadly the same over the last decade. The infection rates are, however, rising more markedly in the North West of England, and Northern Ireland for anogenital warts, and the North West, North East, and Scotland for anogenital herpes.

Increasing rates of these viral STIs highlight the need for the greater public health interventions. For example, this may take the form of public health campaigns encouraging condom use. The newly available vaccine against HPV may also help to reduce HPV-related morbidity through prevention of primary infections.

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