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## Trends in sexually transmitted infections in general practice 1990-2000: population based study using data from the UK general practice research database

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### Abstract

**Objective** To describe the contribution of primary care to the diagnosis and management of sexually transmitted infections in the United Kingdom, 1990-2000, in the context of increasing incidence of infections in genitourinary medicine clinics.

**Design** Population based study.

**Setting** UK primary care.

**Participants** Patients registered in the UK general practice research database.

**Main outcome measures** Incidence of diagnosed sexually transmitted infections in primary care and estimation of the proportion of major such infections diagnosed in primary care.

**Results** An estimated 23.0% of chlamydia cases in women but only 5.3% in men were diagnosed and treated in primary care during 1998-2000, along with 49.2% cases of non-specific urethritis and urethral discharge in men and 5.7% cases of gonorrhoea in women and 2.9% in men. Rates of diagnosis in primary care rose substantially in the late 1990s.

**Conclusions** A substantial and increasing number of sexually transmitted infections are diagnosed and treated in primary care in the United Kingdom, with sex ratios differing from those in genitourinary medicine clinics. Large numbers of men are treated in primary care for presumptive sexually transmitted infections.

### Introduction

Diagnoses of sexually transmitted infections from UK genitourinary medicine clinics have increased considerably since the mid-1990s.<sup>1</sup> The national strategy for

sexual health proposed a shift of services for sexually transmitted infections to primary care in England.<sup>2</sup> Yet little is known about the contribution of general practice to the diagnosis and management of sexually transmitted infections. It has been reported that 16% of men and 36% of women diagnosed as having chlamydia in the five years to 2000 were last treated in general practice.<sup>3</sup> We analysed an anonymised primary care database to explore the contribution of general practice to the diagnosis and management of sexually transmitted infections in the United Kingdom.

### Methods

We estimated the incidence of diagnosed sexually transmitted infections between 1990 and 2000 using a retrospective cohort of patients registered in the UK general practice research database, and surveillance data from genitourinary medicine clinics.<sup>4</sup> The general practice research database contains the records of about 8 million patients, contributing 36 million patient years of observation. Diagnoses in general practice were based on READ or Oxmis codes and in the genitourinary medicine clinics on published KC60 diagnoses. We estimated the incidence of diagnosed sexually transmitted infections in general practice and calculated the proportion of major sexually transmitted infections that were diagnosed in this setting.

To minimise double counting of patients diagnosed in primary care but treated elsewhere, we distinguished patients who were diagnosed and treated in general practice from those who were not treated and

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Incidence of selected sexually transmitted infections diagnosed and treated in general practice and in genitourinary medicine clinics, 1998-2000, by sex

Sexually transmitted infections, by sex	Estimated incidence (95% CI) per 100 000 in general practice, 1998-2000	Incidence per 100 000 in genitourinary medicine clinics, 1998-2000	Estimated incidence (95% CI) per 100 000 in general practice and genitourinary medicine clinics combined, 1998-2000	Estimated % of total incidence diagnosed in general practice, 1998-2000	% increase in estimated incidence in general practice 1990-2000
<b>Men:</b>					
Gonorrhoea	1.3 (1.0 to 1.6)	42.0	43.2 (42.9 to 43.6)	2.9	129.7
Genital chlamydia	5.0 (4.4 to 5.8)	90.2	95.3 (94.6 to 96.0)	5.3	1253.2
Non-specific urethritis	19.7 (18.4 to 21.1)	205.8	225.4 (224.1 to 226.8)	8.7	65.6
Urethral discharge	190.6 (186.4 to 194.8)	11.8	202.4 (198.2 to 206.6)	94.2	197.3
Non-specific urethritis or urethral discharge	210.3 (204.8 to 215.9)	217.5	427.8 (422.3 to 433.4)	49.2	150.6
Genital warts	50.9 (48.8 to 53.1)	256.7	307.6 (305.5 to 309.8)	16.5	121.3
Genital herpes	10.7 (9.7 to 11.7)	46.0	56.7 (55.7 to 57.7)	18.8	46.9
Trichomonas	1.2 (0.9 to 1.6)	2.0	3.2 (2.9 to 3.6)	36.5	-31.4
<b>Women:</b>					
Gonorrhoea	1.1 (0.8 to 1.5)	18.5	19.6 (19.4 to 20.0)	5.7	175.4
Genital chlamydia	34.7 (33.0 to 36.5)	116.4	151.2 (149.4 to 153.0)	23.0	2494.8
Genital warts	49.3 (47.2 to 51.4)	187.0	236.2 (234.2 to 238.4)	20.9	19.2
Genital herpes	31.0 (29.1 to 32.7)	61.3	92.3 (90.7 to 94.0)	33.6	303.9
Trichomonas	14.7 (13.4 to 15.9)	19.9	34.6 (33.3 to 35.8)	42.5	-28.3

therefore may have been referred elsewhere. We reviewed individual patient records when a diagnosis of chlamydia, gonorrhoea, trichomonas, or non-specific urethritis or urethral discharge was recorded during 1998-2000. We estimated sexually transmitted infections diagnosed in general practice separately from those diagnosed and treated in general practice. It was assumed that all patients diagnosed in a genitourinary medicine clinic were treated there. We then compared the incidence of sexually transmitted infections diagnosed and treated in general practice with the incidence of selected sexually transmitted infections diagnosed in genitourinary medicine clinics in the United Kingdom during 1998-2000.

## Results

The percentage increase in sexually transmitted infections diagnosed in primary care during 1990-2000 was greatest for genital chlamydia (1253% in men, 2495% in women) and consistent with the increases found in genitourinary medicine clinics (table).<sup>5</sup>

Among incident cases recorded in general practice, evidence existed of treatment for 58.4% cases of chlamydia, 97.4% cases of non-specific urethritis or urethral discharge, and 46.2% cases of gonorrhoea. A large number of men with urethral discharge seem to be treated syndromically (without a microbiological diagnosis) in general practice, using antibiotics appropriate for non-specific urethritis. The age distribution of urethral discharge was similar to that of non-specific urethritis and chlamydia in men, with a peak in the 20-24 year old age group typical of the epidemiology of sexually transmitted infections in men.<sup>1</sup> The incidence of chlamydia and gonorrhoea in women in general practice peaked in the 16-19 year old age group, as in genitourinary medicine clinics.

The sex ratio of most diagnoses of sexually transmitted infections differed between general practice and genitourinary medicine clinics. The men:women ratio for treated chlamydia was 0.77:1 in genitourinary medicine clinics compared with 0.14:1 in general practice, whereas the respective ratios

for treated gonorrhoea were 2.27:1 and 1.12:1 and for genital herpes were 0.75:1 and 0.34:1

## Discussion

A substantial and increasing number of sexually transmitted infections are diagnosed and treated in general practice and may reflect increasing engagement of general practitioners with sexual health. Rates of diagnosed sexually transmitted infections in the United Kingdom are higher than those captured by current surveillance based only on genitourinary medicine clinics.<sup>5</sup> Significant numbers of men are treated in general practice for symptoms suggestive of sexually transmitted infections.

Contributors: JAC had the original idea for the study and obtained funding. JAC, CHM, LS, AMJ, IP, AI, AM, MGB, JDR, JS, GRK, IS, and GH planned the strategy for analysis of the data. All authors reviewed the codes, further developed the analytic strategy, and drafted and revised the paper. IP and AI led the data extraction. The work was discussed and developed through departmental research seminars, to which all authors and numerous unnamed others contributed. JAC and CHM are guarantors. The views expressed are those of the authors and not necessarily those of the Medical Research Council or the health departments.

### What is already known on this topic

Current surveillance of sexually transmitted infections based on genitourinary medicine clinics underestimates the burden of disease

### What this study adds

The diagnosed incidence of sexually transmitted infections in the United Kingdom is higher than previously thought, with an increasing contribution from general practice

Men are commonly treated syndromically, and the sex ratios of diagnoses in general practice differ substantially from those in genitourinary medicine clinics

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## Timing of mortality among internally displaced persons due to the tsunami in Sri Lanka: cross sectional household survey

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### Abstract

**Objective** To describe the distribution of mortality among internally displaced persons during two and a half months after the Indian Ocean tsunami, 2004.

**Design** Cross sectional household survey with retrospective cohort analysis of mortality.

**Setting** Camps for internally displaced persons due to the tsunami in an eastern coastal district of Sri Lanka.

**Participants** 3533 people from 859 households accommodated in 13 camps.

**Main outcome measures** All cause death and number of missing people.

**Results** 446 deaths and 11 missing people were reported after the 2004 tsunami, of which most (99%) occurred on the day of the tsunami or within three days thereafter. No deaths were reported for the two and a half month period starting one week after the tsunami.

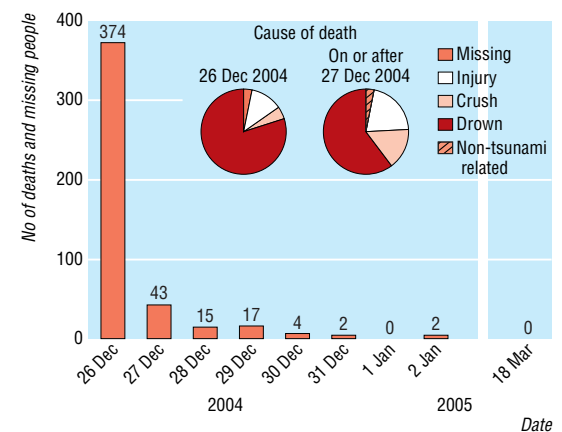
**Conclusions** Most mortality after the 2004 tsunami occurred within the first few days of the disaster and was low in the study area.

### Introduction

On 26 December 2004, the most devastating tsunami in recorded history hit the countries around the Indian Ocean. Sri Lanka was the second most affected country, with more than 30 000 deaths and half a million people displaced. We carried out a cross sectional household survey in an eastern coastal district of Sri Lanka to describe the distribution of mortality during and after the disaster among internally displaced persons.

### Methods

We carried out our survey from 13 to 18 March 2005. Internally displaced persons were highly mobile, making it difficult to define the sampling framework, thus we included all households in 13 camps in three administrative divisions of Ampara district. After



Distribution of 446 deaths and 11 missing people by date among 3533 displaced persons in Ampara district, Sri Lanka on 26 December 2004, day of the tsunami, and subsequent days

written informed consent was obtained, a householder was asked to provide information on all family members as of 25 December 2004 (the day before the tsunami) and any subsequent deaths and missing events. Information on the family was verified by referring to the household registration card, issued by the local government for food rations.

### Results

The study sample consisted of 3533 people from 859 households that gave consent to be surveyed. Of a total of 446 deaths and 11 missing people, most (99%) occurred on the day of the tsunami or within three days thereafter (figure). No death was observed after 2 January 2005, the seventh day after the tsunami, indicating low mortality for a displaced population after

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