

# Sexually transmitted diseases in a British military force in peacetime Europe, 1970-83

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**SUMMARY** A retrospective analysis was performed to identify the incidence and pattern of sexually transmitted diseases (STD) affecting a modern British peacetime military force in 1970-83. Relative risk factors for a comparable UK civilian population were assessed and showed a slightly greater risk or the military only in 1974-81. The development of incidence and pattern of STD affecting the military force was shown to be broadly similar to trends in the UK.

Recent standard textbooks<sup>1</sup> and review articles<sup>2</sup> on genitourinary medicine state that the military are at high risk of acquiring sexually transmitted diseases (STD). No reports have been published, however, on the incidence or pattern of STD in a British military force in Europe since the second world war. In the light of changes in social and sexual practices that have taken place in the general population of the UK during the past 40 years, a review of the topic was considered to be appropriate.

## Patients and methods

Relevant information was extracted retrospectively from the records of an STD clinic at a British military hospital in the Federal Republic of Germany. The patients were drawn from the local entitled catchment population (the total military force) that consisted of British servicemen and women (military staff), locally employed UK based civilians (UKBC), such as teachers and diplomatic staff, and the dependants of both groups. Except for the period 20 September 1972 to 11 July 1973, the clinic records were found to be complete from 1970 to 1983. Demographic details were obtained for the catchment population for 1983.

The results of STD surveillance in the UK were made available by the Public Health Laboratory Service from clinic returns to the United Kingdom health departments and were provided by the Communicable Disease Surveillance Centre (CDSC). Although surveillance did not start in the UK until 1973,

information on gonorrhoea dated from 1970 and on non-specific genital infection (NSGI) from 1972. Details were complete up to and including 1983. Information for the UK population was extracted from the appropriate annual abstract of statistics produced by the Central Statistics Office of the British government, and figures were available for the study period to 1983. Additional information regarding STD in the English population was obtained as required from the relevant annual reports, entitled *On the state of the public health*, issued by the Chief Medical Officer of the Department of Health and Social Security.

## Results

### CATCHMENT POPULATION

During the study period the military force varied in size from 43 355 to 39 637. In 1983 this population was composed of 37% military staff, 9% UKBC and people from sponsored organisations, and 54% dependants. Military staff were predominantly male (7% female).

People aged 60 or more made up 0.01% of the military force compared with 20% of the UK population. Of those aged under 60, 25% of the military force and 27% of the UK population were aged under 16. Of those aged 16 to 59, 44% of the military force and 50% of the UK population were women. A total of 64% of military staff were married as opposed to 66% of the UK population aged 15-60. In military staff 31% of married people were aged under 25 compared with 7% in the UK population. Of the married military staff, 87% were accompanied by their families. The age distribution of the two populations studied was basically stable throughout the study period, and table

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Table 1 Comparison of age distribution in 1983 between UK ( $32\,688 \times 10^3$ ) and military force and between UK ( $16\,412 \times 10^3$ ) and service men

Age group	Percentage of total population aged 16 to 59			
	UK	Military	UK men	Service men
16–19	11.8	7.4	11.8	5.0
20–24	13.7	31.2	13.9	32.1
25–29	11.9	20.5	12.0	21.3
30–34	11.8	13.5	11.8	14.3
35–39	12.3	12.7	12.3	13.7
40–44	10.0	6.4	9.9	6.7
45–49	9.5	4.4	9.5	4.4
50–54	9.5	2.4	9.4	2.2
55–59	9.6	1.1	9.4	0.02

1 shows the comparative percentages of people aged 16 to 59 in 1983.

#### SEXUALLY TRANSMITTED DISEASE SURVEILLANCE

Table 2 gives details of patients in the military force treated for STD from 1970 to 1983. During the review period two homosexual servicemen were seen. The percentage of the total new cases each year derived from military staff remained constant at about 82%. Taking the military force as a whole, the incidences of gonorrhoea and NSGI followed UK trends, with gonorrhoea showing a slight reduction in incidence and NSGI a steady and sustained increase. The percentage of the total yearly cases of these two conditions fell from 71% (97/137) in 1974 (40% in the UK) to 47% (187/339) in 1983 (34% in the UK).

Table 3 shows the percentage of new cases from different sources (prostitutes or casual or regular

sexual partners) analysed by sex and marital status of the patients. In 1983 military staff were found to have the same pattern of disease source as the rest of the military force.

We analysed the pattern of STDs associated with the different sources of infection (table 4). Except for cases of candidiasis, herpes simplex, and warts, which comprised 1%, 2%, and 3% respectively of cases from regular sexual partners in 1970–3 and which increased to 5%, 8%, and 13% respectively in 1982–3, no differences were found in the patterns of STDs over the whole study period.

#### AGE SPECIFIC RATES OF STD IN THE UK AND MILITARY POPULATIONS

To compare the incidence of STD in the military force with that in the UK population, the incidence figures had to be standardised to adjust for differences between the ages of people in the two populations. The absence of any breakdown of UK STD surveillance data by age necessitated indirect standardisation of the STD incidence rates in terms of the military force for which incidences could be calculated in relation to age. The relative risks thus derived are expressed in terms of risk for the UK population relative to the appropriate military population (the arbitrary standard population). The standardisation procedure, including computing relative risk and standard errors, followed the method described by Armitage,<sup>3</sup> and the results are shown in table 5.

#### Discussion

Historical evidence supports the statement that

Table 2 New cases of sexually transmitted disease in the military force 1970–83

Diagnosis	1970	1971	1972*	1973†	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Syphilis	0	0	0	1	0	2	0	0	1	2	0	1	0	3
Gonorrhoea	18	15	27	9	37	69	24	50	59	48	68	111	86	58
Non-specific genital infection	46	52	50	29	60	79	104	90	90	101	125	142	133	129
Trichomoniasis	1	1	0	0	0	0	2	4	1	0	2	1	3	2
Candidiasis	0	0	0	0	1	6	3	8	8	3	7	20	25	22
Scabies	0	0	0	0	0	0	0	0	0	2	3	1	0	2
Pubic lice	0	0	0	0	0	2	1	1	2	1	2	4	4	0
Herpes simplex	3	2	2	0	5	7	6	5	2	8	2	6	21	20
Warts	3	4	1	0	1	3	4	6	12	9	9	24	29	36
Other treponemal disease	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Other conditions requiring treatment	7	3	4	5	12	17	24	28	17	14	24	35	36	44
Other conditions not requiring treatment	10	6	23	6	21	30	33	36	44	53	49	88	90	83
Total new cases	88	83	107	125	137	215	201	229	236	241	291	433	427	399
Total No of patients seen	80	77	NK	NK	132	198	196	208	217	229	260	395	397	381

\*No case records available from 20 September to 31 December 1972. Data taken from annual report.

†No case records available from 1 January to 11 July 1973. No data available from annual report except total of new cases. Cases recorded under individual diagnosis taken from case records available for 1973.

NK = not known.

Table 3 Sources of new cases of STD by sex and marital status, expressed as percentages in each category

Years	No	Married men			Married women		Single men			Single women	
		R	C	P	R	C	R	C	P	R	C
1970-73	403	42	54	4	NA	NA	30	63	7	NA	NA
1974-77	782	50	45	5	91	9	27	66	7	51	49
1978-81	1201	44	46	10	84	16	37	52	11	51	49
1982-83	826	57	32	11	86	14	38	53	9	72	28

R = regular sexual partner; C = casual sexual partner; P = prostitute; NA = not available.

Table 4 Sexually transmitted diseases acquired from regular or casual sexual partners or prostitutes by military force patients 1970-83 (given for each sex as percentages of total new cases from each source)

	No of cases	Regular partners		Casual partners		Prostitutes	
		Men	Women	Men	Women	Men	Women
Gonorrhoea	679	12	17	26	32	39	0
Non-specific genital infection	1230	49	10	46	7	27	0
Candidiasis	103	4	10	1	10	1	0
Herpes simplex	89	4	2	2	0	2	0
Warts	141	7	7	2	3	2	0
Other conditions requiring treatment	270	6	27	4	23	2	0
Other conditions not requiring treatment	572	16	22	16	20	25	0
Total	3084	98	95	97	95	98	0

military forces are at high risk of acquiring STD. During the Boer War as many as half the British troops suffered from venereal disease, and in the first world war the proportion reached 20% in some military groups.<sup>4</sup> This risk associated with combatant troops was identified again during the second world war, and a 1973 study of 400 Australian soldiers serving in Vietnam showed an STD incidence of 27%.<sup>5</sup> Those studies showed high incidences of STD in military forces, but cannot be taken to prove that the incidences were appreciably higher than in civilian populations as they did not include matched comparisons with contemporaneous groups. On each of those occasions the populations concerned were almost entirely male combatant servicemen, largely single, or if married serving away from home and family in an overseas theatre of war. These pressures were understandably held to result in increased promiscuity, particularly with prostitutes, which led to an increased incidence of STD.

Most of the above factors do not apply in the

Table 5 Age specific rates for STD—relative risk for UK population compared with the military force

Year	Percentage relative risk (SE) for UK population
1974-77	78.4 (0.12)
1978-81	57.9 (0.08)
1982-83	102.6 (0.14)

In 1983 the relative risk for adult UK men compared to male military staff was 96.7 (SE 0.21)%.

modern peacetime military force, which is shown to have a broadly similar composition to its aged matched UK civilian counterpart. There is a large civilian support group within the military force, and military staff have a small but appreciable female component. Most British military staff, even when stationed abroad, are married and accompanied by their families. Differences do, however, exist in the relative age distributions: the military have a great preponderance of younger adults, and there is a tendency for service staff to marry younger than their civilian contemporaries. This latter observation is likely to be encouraged by the financial security and social support, such as married quarters, enjoyed by the armed services. In view of these demographic observations it was expected that the pattern of STD might be different from that in previously studied military populations. The only publication concerning a British peacetime military group (Singapore 1970) revealed an incidence of syphilis that was fifty times greater in Army servicemen than in UK men.<sup>6</sup> That study was not as comprehensive as the work presented here, as it did not identify the incidence or pattern of other sexually acquired conditions and did not investigate epidemiological factors or present age specific rates.

Before considering these points in this study it is important to establish the basis on which the work was founded. As the analysis was retrospective, all data including diagnoses and clinical histories were taken from case records and could not be verified or checked

for standardisation of the criteria applied. Furthermore, the number of cases recorded was small, thus rendering the statistics sensitive to comparatively small changes in magnitude. These reservations are balanced by the fact that the clinic was the only English speaking specialist centre to which the catchment population had access. It was run in a manner comparable with its UK counterparts and was staffed at all times by doctors who had received at least a short period of postgraduate training in genitourinary medicine. Patients and doctors using the facility were a rotating population from the UK accustomed to the National Health Service. Although military medical regulations require that all suspected cases of venereal disease are seen at the specialist clinic, other forms of STD would inevitably have been seen elsewhere, such as gynaecology clinics or general practitioner surgeries.

Except for a very few cases of STD arising from contact contrary to Service Law, such as homosexuality, disciplinary considerations do not inhibit patient attendance at the clinic, which is run on an open access basis treating patients referred medically or self referred as well as those found by contact tracing. In view of the above profile of medical and patient usage as well as the operational functioning of the clinic, we think that the patients seen represent a broadly accurate picture of the pattern and incidence of STD in the population studied and this picture is directly comparable with UK experience as expressed by DHSS and CDSC figures, as these are affected by similar reporting restrictions.

The increasing number of cases of STD in the military population during the study period broadly followed UK trends.<sup>2</sup> The exception to this was a peak in 1981, which may well be an example of the sensitivity of the statistics, as a major European military exercise was held in that year. Large numbers of transient British troops were concerned but were not recorded in the annual catchment figures as these refer only to the resident population.

In 1974–81 the military force had a higher incidence of STD than the UK civilian population. The incidence, however, was never more than 1.5 times the comparable UK civilian rate and was much less than would have been suggested by previous studies.<sup>4–6</sup> This slightly increased risk to the military force is such that, when viewed against the overall incidence of STD in the UK, it is of little clinical relevance. Indeed, during the final two years of the study period no practical difference in the relative risk of STD was found between the civilian population and military force or, in 1983, between male military staff and adult UK civilian men. This may reflect the similar compositions of the two populations as well as the low number of people in recognised high risk groups for acquiring

STD, such as homosexuals and immigrants, in the military force.

The pattern of STD in the military force also broadly follows UK trends, with candidiasis, herpes simplex, genital warts, and “other conditions not requiring treatment” showing the principal increases in prevalence.<sup>2</sup> The predominance of gonorrhoea and NSGI in British military staff has been noted before,<sup>5</sup> but during the study period the proportion of the total people in the military force with these two conditions has moved noticeably towards civilian levels.

During the study period the source of STD altered for both sexes in that an increasing number of patients stated that they had contracted their disease from their regular sexual partner. This suggests that in the modern British resident military force there was an appreciable move away from the acceptability of casual sex. It is also interesting to note that the civilian and service components of the military force showed identical patterns of sources of STD. In neither group did disease acquired from prostitutes make up appreciably more than the 10% recorded in Glasgow in 1972,<sup>6</sup> and it was always much lower than the 65% observed in Australian combat troops in Vietnam in 1973.<sup>4</sup>

Trends in disease acquired from different sources show some predictable features in that gonorrhoea became progressively more commonly acquired from casual partners and prostitutes. “Other conditions not requiring treatment” also most commonly arose from contact with prostitutes, such contacts often leading to consultations associated with anxiety or guilt. In contrast, the prominent modern infections of candidiasis, herpes simplex, and genital warts were most often contracted from regular sexual partners. This reflects not only the difficulty in interpreting the incubation periods and latency of these conditions but also the infectivity of the different diseases and their relation to frequency of exposure. These findings support the work of Fulford *et al* who showed that, except for gonorrhoea, the acquisition of STD is not directly associated with promiscuity.<sup>8</sup> The increasing prominence of these diseases may more readily result from the modern social acceptance of multiple sexual partners during active sexual life. The change in pattern of STDs in the military force cannot therefore reflect solely the recorded shift in sources of acquisition, though this may have led in part to the reduction in gonorrhoea and NSGI as a percentage of the total yearly cases.

Our findings suggest that the incidence, pattern, and range of STDs affecting a resident British peacetime military force are basically the same as those found in its UK civilian counterpart. This observation reflects the trend towards similar demographic, social, and sexual practices in these two populations. Certain

dissimilarities do still exist and are likely to be perpetuated between the two groups, given the predominance of young men in the military force and the comparative absence of other high risk categories.

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