# NOT FOR PUBLICATION WORKING GROUP ON AIDS

ACQUIRED IMMUNE DEFICIENCY SYNDROME SURVEILLANCE IN UNITED KINGDOM SEPTEMBER 1981 TO NOVEMBER 1984

A report from the Communicable Disease Surveillance Centre to the Department of Health and Social Security

and the Welsh Office

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In 1981 an outbreak of Pneumocystis carinii pneumonia was reported in the United States of America (USA) in homosexual menl and at about the same time Kaposi's sarcoma also in homosexual men was described<sup>2</sup>. An apparently new disease had appeared, which became known as the Acquired Immune Deficiency Syndrome (AIDS); a case definition for epidemiological purposes was formulated by the Centers for Disease Control (CDC), Atlanta, USA which has been accepted in most countries of the world:

- "1. A reliably diagnosed disease that is at least moderately indicative of an underlying cellular immune deficiency. For example, Kaposi's sarcoma in a patient aged less than 60 years or opportunist infection.
- No known underlying cause of the cellular immune deficiency nor any other cause of reduced resistance reported to be associated with the disease."

Up until 13 November 1984, 6857 cases and 3253 deaths had been reported in the USA. The first case in the United Kingdom (UK) was reported in December 19813. In the summer of 1982 an AIDS surveillance system was set up which comprised; first, clinical reports of suspected cases to the Communicable Disease Surveilance Centre (CDSC) and the Communicable Diseases (Scotland) Unit (CD(S)U) from venereologists and other clinicians; second, laboratory reports of opportunist infections; third, copies of death certificates mentioning Kaposi's sarcoma or AIDS provided by the Office of Population Censuses and Surveys (OPCS)4.

The purpose of this report is to present the findings of the UK surveillance system for the period up to 20 November 1984.

### HUMAN T-CELL LYMPHOTROPIC VIRUS III

During 1983 Human T-Cell Lymphotropic Virus III (HTLV III), a retrovirus particularly tropic for the sub-set of Thelper lymphocytes which is depleted in sufferers from AIDS, was isolated from patients with the syndrome and from those in high-risk groups<sup>5</sup>. Subsequently sero-epidemiological studies revealed that antibodies to this virus were present in 30/31 (97 per cent) of a group of AIDS patients in the UK, in 4/269 (1.5 per cent) of intra-venous drug-abusers, 63/184 (34 per cent) of those who had received multiple injections of pooled clotting factors and also in 41/69 (59 per cent) of asymptomatic male homosexuals<sup>6</sup>. These results suggested that there is a spectrum of response to infection with HTLV III, ranging from complete lack of symptoms to fatal opportunist diseases characteristic of AIDS.

#### RESULTS

Altogether, 90 cases were reported in the UK between December 1981 and 20 November 1984 which satisfied the criteria of the case definition; there were 38 deaths. All of the 90 cases were reported by clinicians, 55 with opportunist infections were also reported by laboratories and all the deaths were recorded by the OPCS.

#### Clinical Picture

Of the 90 cases, 30 presented with Kaposi's sarcoma, 33 with **Pneumocystis carinii** pneumonia, 5 with both of these conditions, 1 with cerebral lymphoma and 21 with other opportunist infections; amongst these latter were toxoplasmosis, cryptococcal infection, disseminated herpes simplex infection and cryptosporidiosis.

#### Time Distribution

The time distribution of cases recorded by the date of first seeking medical advice for their condition shows that the first case was in 1979, there were none in 1980, 4 in 1981, 9 in 1982, 26 in 1983 and 50 in 1984 up to 20 November. These data are compared with the USA data in table 1.

#### Geographical Distribution

The distribution of cases by geographical location is shown in Table II. Most of these cases have been reported in and around London and most of these were in homosexual males. Between 1981 and December 1983, 20/23 (87 per cent) of cases reported in male homosexuals were in London but in 1984 the proportion had fallen to 60/77 (78 per cent) of homosexual cases, although at least 4 of the homosexual cases reported outside London made frequent trips to the capital, where they had sexual contacts.

#### Age and Sex

Cases occurred in patients ranging in age from 20 to 57 years. The median aged was 36 years. Only 5 (6 per cent) out of the 90 cases were in females, 2 of whom were black Africans. There were 2 cases in males from the Caribbean and the remainder were reported in white caucasians.

#### **Risk Factors**

Altogether 77 (86 per cent) of the cases were in male homosexuals, there were 8 cases in heterosexual males, 3 of whom were patients with haemophilia A, who had received imported Factor VIII concentrate from the USA. Two of these men died with opportunist infections. Five patients were heterosexual men who did not have any of the usual risk factors, but 2 of them had visited the Caribbnean within 5 years of becoming ill. Only one case was reported in an intra-venous drug abuser, but this man was also homosexual. There were 5 cases in women, 2 of whom were black African immigrants to the UK from central Africa; one British woman had lived in Zaire; the husband of another made frequent visits to that country; the fifth female patient had had multiple sexual partners, many of whom were from overseas. Risk factors for all the cases are shown in Table III.

#### Blood and Blood Products

None of the cases reported in the UK had received transfusions of whole blood in the 5 years prior to the onset of symptoms. However, 2 patients who subsequently developed AIDS had donated blood within that period. In one instance the blood had not been used and was withdrawn from the bank. In the second, however, red cells and whole blood had been given to 2 patients and blood had been used to produce Factor VIII concentrate, which was received by over 1200 patients with haemophilia. The patient who received red cells subsequently developed antibodies to HTLV III; the serological results for the other recipient of whole blood are not yet available. Sera from the patients with haemophilia are being examined to identify any seroconversion in this group.

Altogether 3 of the 90 cases of AIDS reported in the UK were in men with haemophilia A, who had received imported Factor VIII concentrate. One of these men is still alive in November 1984, 23 months after developing symptoms, but two died with opportunist infections within one year of becoming ill.

#### Health-care workers

Three incidents of accidental exposure of nurses to the blood or body fluids of patients with AIDS were reported to CDSC. Of these 3, 2 did not develop symptoms or antibodies to HTLV III. However, one nursing sister, who sustained a needle-stick injury to her gloved hand whilst taking a blood sample from a patient with AIDS became ill with pyrexia, arthralgia and a centripetal, erythematous, maculopapular rash 15 days after the injury. Within one month she developed antibodies to HTLV III. No similar case has been reported in the world literature.

#### Overseas contacts

Of the 77 male homosexual patients 50 (65 per cent) had had sexual contact with nationals of the USA or Caribbean in the 5 years prior to onset. Three women had lived in central Africa, and one woman was married to a central Africa national. Three men had received blood products from the USA. Thus, the source of infection for 57 of the 90 cases (63 per cent) may have been abroad.

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#### DISCUSSION

The effectiveness of the clinical reporting scheme at CDSC was demonstrated by the fact that no cases of AIDS were identified from laboratory or death certificate data, which had not already been reported by clinicians.

The clinical picture in the UK cases is slightly different to that seen in the USA, with proportionately more cases of Kaposi's sarcoma and fewer cases of Pneumocystis carinii pneumonia. This may be a reflection of the fact that Kaposi's sarcoma is more common amongst homosexual men, who accounted for 77 (86 per cent) of the 90 British cases compared with 4943 (72 per cent) of the cases seen in the USA. (Table IV)

In the UK, as in the USA, AIDS cases have shown an exponential increase (figure); in the UK the number of reported cases has doubled about every eight months and in the USA every six months. Cases have occurred mainly amongst male homosexual patients in large cities where groups of them are congregated.

Intra-venous drug abuse has not yet emerged as a risk factor in the UK, where it is believed that there is little overlap between the homosexual and drug-taking communities. However, intra-venous drug-abusers account for 17 per cent of cases reported to CDC by November 12 1984. Labortory reports of hepatitis B in the UK increased by more than 50 per cent in the third quarter of 1984, compared with the same quarter in 1983 and outbreaks were reported in drugabusers. These data suggested that transmission was occuring rapidly within this community probably by the sharing of contaminated needles and syringes. HTLV III infection could readily spread amongst drug-users in the UK, if the virus were to enter this susceptible population.

Over 1 per cent of the cases in the USA were reported in those who had received transfusions of whole blood from patients who subsequently developed AIDS, but no similar cases have been reported in the UK. Attempts to exclude high-risk groups from donation may have limited spread by this route. For example, advice has been given to homosexuals not to donate blood and patients with AIDS are reported by CDSC to the relevant Regional Director of the Blood Transfusion Service so that any unused previous donations may then be identified and withdrawn from the blood-bank. Unfortunately, it is not possible to report all cases to the Blood Transfusion Service because the name and address are sometimes unknown to CDSC.

Although 65 per cent of the homosexual patients with AIDS had had sexual contact with USA or Caribbean nationals, preliminary results from a study of the behaviour of healthy homosexuals conducted by CDSC and the Department of Genitourinary Medicine, Kings College Hospital suggest that up to 40 per cent of all homosexuals have recently visited North America. A case-control study designed to test the hypotheses that visiting the USA, using amyl or butyl nitrite, having multiple sexual partners and engaging in various sexual practices, place a sub-set of male homosexuals in the UK at risk of developing AIDS has begun at CDSC.

In collaboration with the Association of Medical Microbiologists, a prospective evaluation of the health of NHS staff with accidental parenteral or mucosal exposures to blood or body-fluids potentially contaminated with HTLV III is planned in the near future by CDSC. Serological testing for HTLV III is now being performed in two centres in the UK, and will soon be available elsewhere. It is intended then to extend the surveillance scheme to include the monitoring of laboratory reports of seropositive subjects, which will provide more comprehensive information about the magnitude of the reservoir of infection.

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#### TABLE I

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| PRESENTAT | <b>FION</b> | OF | AIDS | CASES | BY | YEAR:       | UK   | AND         | USA |
|-----------|-------------|----|------|-------|----|-------------|------|-------------|-----|
| •<br>•    |             |    |      |       |    |             |      | · · · · · · |     |
| 7         | EAR?        | _  |      | US.   | A  | CASES       | U    | ĸ           |     |
| pre l     | .980        |    |      | 14    | -  |             |      | 1           | •   |
| נ         | 980         |    |      | 44    |    | •           | . (  | 0           |     |
| 1         | .981        |    |      | 233   |    |             | -    | 4           |     |
| 1         | .982        |    |      | 903   |    |             | 9    | 9           |     |
| l         | 983         |    |      | 1806  |    | •           | - 20 | 5           |     |
| 1         | 984         |    |      | 3857  |    |             | 50   | )           |     |
| T         | OTAL        |    |      | 6857  |    | · · · · · · | 9(   | )           |     |

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# TABLE II

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### DISTRIBUTION OF UK CASES BY GEOGRAPHICAL LOCATION TO

|             |            | •     |       |  |  |  |  |
|-------------|------------|-------|-------|--|--|--|--|
| AREA        | HOMOSEXUAL | OTHER | TOTAL |  |  |  |  |
| London      | 60         | 5     | 65    |  |  |  |  |
| South Coast | 7          | 1     | 8     |  |  |  |  |
| Bristol     | 1          | 1     | 2     |  |  |  |  |
| Cardiff     | 1          | 1     | 2     |  |  |  |  |
| North-West  | 3          | 1     | 4     |  |  |  |  |
| Mersey      | 0          | 1     | 1     |  |  |  |  |
| Oxford      | 1          | 1     | 2     |  |  |  |  |
| South-West  | 1          | 0     | 1     |  |  |  |  |
| Northern    | 1          | 1     | 2     |  |  |  |  |
| Scotland    | 2          | 1     | 3     |  |  |  |  |
| TOTAL       | 77         | 13    | 90    |  |  |  |  |
|             |            |       |       |  |  |  |  |

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TABLE III

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### RISK FACTORS FOR UK CASES REPORTED

| RISK GROUP    | MALE | FEMALE | CASES | DEATHS |
|---------------|------|--------|-------|--------|
| Homosexual    | 77   | 0      | 77    | 31     |
| Haemophiliac  | 3    | 0      | . 3   | 2      |
| African       | 0    | 4      | 4     | 3      |
| Other/unknown | 5    | 1      | 6     | 2      |
| TOTAL         | 85   | 5      | 90    | 38     |

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## TABLE IV

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# USA AND UK CASES AND DEATHS

## TO 20 NOVEMBER 1984

|  | USA   |     |       |    | IIK   |     |      |        |  |
|--|-------|-----|-------|----|-------|-----|------|--------|--|
|  | Cases |     | Death |    | Cases |     | Deat | Deaths |  |
| DISEASE  | No.   | 6   | No.   | £  | No.   | 윻   | No.  | 8      |  |
| Kaposi's sarcoma<br>without Pneumocystis<br>carinii pneumonia        | 1589  | 23  | 470   | 30 | 30    | 33  | 9    | 30     |  |
| Both Kaposi's sarcoma<br>and Pneumocystis<br>carinii pneumonia       | 412   | 6   | 274   | 67 | 33    | 6   | 15   | 46     |  |
| <b>Pneumocystis carinii</b><br>pneumonia without<br>Kaposi's sarcoma | 3709  | 54  | 1875  | 51 | 5     | 36  | 3    | 60     |  |
| Other opportunistic<br>disease                                       | 1147  | 17. | 616   | 54 | 22    | 25  | 11   | 50     |  |
| TOTAL  | 6857  | 100 | 3235  | 47 | 90    | 100 | 38   | 42     |  |

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