Trends in Death Associated With Abuse of Volatile Substances 1971-2007

Division of Community Health Sciences

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INTRODUCTION

This is the twenty-second annual statistical summary of data on trends in deaths associated with the deliberate inhalation of volatile substances. Data for 2007 are included here for the first time, together with updated information for earlier years, so Report 22 supersedes all previous reports. There is necessarily a delay of more than twelve months between the end of a calendar year and publication of our annual report. This is to allow time for details to become available from HM Coroners and from the Office for National Statistics (ONS), and the General Register Offices for Scotland and Northern Ireland.

The terms “glue sniffing” and “solvent abuse”, which were commonly used in connection with volatile substance abuse, have for some years been inadequate to describe the problem, hence our adoption of the term “volatile substance abuse”. Another term widely used is “inhalant abuse”. We define volatile substance abuse (VSA) as the deliberate inhalation of a volatile substance (gas, aerosol propellants, solvents in glue and other solvents) to achieve a change in mental state.

Our data set includes deaths from 1971 onwards, and our methods of data collection have been stable and systematic since 1983. For some analyses all deaths have been used. For examining some time trends only the period of stable data collection has been used (1983-2007), whilst for others only the most recent ten-year period has been included.

Details of statistical methods used in the analyses may be found on page 21.

Our information for England and Wales is provided from the following main sources: HM Coroners, Office for National Statistics, the Medical Toxicology Laboratory, Guy's and St Thomas' Hospital Trust, and press clippings agencies. For Scotland, information is supplied by the Crown Office and the General Register Office for Scotland. Details of Northern Ireland deaths are provided by the State Pathologist's Department, the Coroners Service for Northern Ireland, and the General Register Office for Northern Ireland. The Deputy Viscount in Jersey, HM Greffier in Guernsey, and the High Bailiff in the Isle of Man supply information for their areas.

Data on "all cause" mortality and population estimates are supplied by ONS, the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency.

The criteria used for classifying deaths and details of how we collect the data may be found in some of the publications listed on page 19. Figure 1 shows the flow of collection and dissemination of data.

ACKNOWLEDGEMENTS

The register of Volatile Substance Abuse deaths is funded by the Department of Health.

This report is based upon earlier reports and we acknowledge the contribution made by previous members of the research study, particularly Jennifer Taylor and Martin Bland.

For England and Wales we wish to thank all HM Coroners and their staff who notify cases to us, the Office for National Statistics for providing death certificates, Peter Streete at the Medical Toxicology Laboratory, Guy's and St Thomas' NHS Foundation Trust and the British Aerosol Manufacturers' Association for giving us access to their information, and the Health and Safety Executive and the Railways Inspectorate for liaison over workplace deaths where necessary.

For Scotland, we wish to thank the Crown Office for providing information on Scottish deaths, and the General Register Office for Scotland for providing death certificates.

For Northern Ireland, we wish to thank the staff of the State Pathologist's Department for ascertainment, the General Register Office for Northern Ireland for death certificates, and the staff of the Coroners Service for Northern Ireland.

We wish to thank the Deputy Viscount in Jersey, and HM Greffier in Guernsey whose assistance enables us to include information for the Channel Isles, and the High Bailiff and Coroner of Inquests for the Isle of Man.

John Corkery and Kapil Ahmed from the International Centre for Drug Policy (ICDP) at St George's, University of London assisted in the preparation of this report. The next report (No 23) will be produced by the ICDP, who have assumed responsibility for the VSA Mortality Project.

KEY FINDINGS FOR 2007

- There were 58 deaths associated with volatile substance abuse in 2007, compared with 51 deaths in 2006, bringing the total number of VSA deaths in the UK since 1971 to 2,308.

- Since 1992 there has been a significant fall in deaths, from an average of 76 per year in 1993-1999, to an average of 56 per year in 2000-2007.

- Among adults of 20 years and over there was an increase in 2007 to 48 deaths, the highest number recorded to date in this age-group.

- In under-18 year olds there were seven VSA deaths in 2007, a similar number to 2006 and 2005. Of these seven deaths, three were associated with butane cigarette lighter refills, the sale of which to under-18s is prohibited by legislation, and two were associated with aerosols.

- Gas fuels continue to be associated with the majority of deaths. In 2007, butane from all sources, including aerosol propellants, accounted for almost 80% of VSA deaths (46 of the 58 deaths).

- In 2007 there were three deaths (four in 2006) associated with the inhalation of nitrous oxide, which had been obtained for non-medical purposes.

- VSA deaths overall continue to be more common among males than females. In 2007, there were five times as many male as female deaths.

- Of the 58 deaths in 2007, nine were suicides in adults involving the inhalation of a volatile substance.

COMMENTARY

Mortality associated with the abuse of volatile substances (VSA) is related to many factors, including the chemical nature of the substance itself, the product containing it, the method of inhalation and the prevalence of abuse. We have been collecting data on deaths in a systematic way since 1983.

The purpose of this report is to monitor trends rather than to provide an exhaustive commentary. More detailed analyses of some of the data have been the subjects of separate papers. When looking at trends and mortality rates it is important to remember that they are subject to greater random variation when the numbers are small.

When further cases or additional data for previous years come to light they are added to the data set. Deaths can also be removed from the dataset if subsequent information puts them outside our criteria. Any important revisions are noted in our reports.

The dataset includes cases where there is no direct toxicological proof, but circumstantial evidence of varying grades suggests that these deaths were associated with volatile substance abuse. It also includes suicides where a volatile substance was inhaled. All such cases are coded accordingly so that they can be reviewed if necessary.

TRENDS IN TOTAL DEATHS PER YEAR

The total number of deaths between 1971 and 2007 was 2,308. During 2007 there were 58 deaths. Three deaths for 2006 and one for 2005 were added to the dataset, bringing the totals for those years to 51 and 46 respectively. Figure 2 gives the total number of deaths for each year.

Earlier reports included analyses of the monthly number of deaths before and after the Department of Health's advertising campaign of February 1992 aimed at parents. The final analyses (in Report 17) were based on data for England, Wales and Scotland (i.e. the areas that received the full campaign) between 1983 and 2002, thereby including an adequate 10-year period of follow-up. For under-18s deaths after the campaign fell significantly - by an estimated 62% from the number predicted by the underlying trend[1]. The estimated fall of 19% among adults was not statistically significant[2]. Since the campaign (Figure 3) there has been a further significant fall in the annual totals of all VSA deaths[3], from an average of 76 per year in 1993-1999 to an average of 56 per year in 2000-2007.

United Kingdom legislation banning the sale of cigarette lighter refills to under 18 year olds came into effect in October 1999. The proportion of all VSA deaths in this age group has fallen: from 1983 until the 1992 campaign it was 60%, in the eight years between the campaign and the 1999 legislation it was 38%, and in the eight years from 2000 to 2007 it was 25%.

[1] $P < 0.001$ (95% CI: 50% to 71%)
[2] $P = 0.10$ (95% CI: -4% to 38%)
[3] test for linear trend in the square-root of yearly totals, $P < 0.001$; test for additional cubic pattern, $P = 0.010$

AGE

In 2007 the youngest person to die was aged 16 and the oldest (a suicide) was aged 79. Table 1 presents the age distribution of VSA deaths.

Changes in the age distribution are illustrated in several ways. Figure 4 shows a shift in the distribution of deaths towards higher ages, when 2007 is compared with the period 1971-2006. This shift is highly statistically significant[4].

Figure 5 shows the cumulative distribution of age at death, again comparing 2007 with the period 1971-2006. This shows that in general the age of death was higher in 2007. For the period 1971-2006 the median age of death was 18 years (interquartile range 15-24 years), and for 2007 it was 31 (inter-quartile range 23-39 years).

Figure 6 shows trends over time in the number of deaths by age-group. This shows that the fall in deaths since 1990 was predominantly among young people. Among adults of 20 years and over there was a levelling rather than a fall, although in 2007 there was an increase to 48 deaths, which in this age-group is the highest number ever recorded.

SEX

Table 2 shows the sex distribution of deaths associated with volatile substances. In 2007 there were nearly five times as many male deaths as female deaths. Over the past ten years the majority (80%) of deaths for all ages has been in males. However in general the proportion of female deaths for all ages has risen since 1983, attributable mainly to a decline in the number of male deaths rather than an increase in the number of female deaths.

[4] $P < 0.001$ (Mann-Whitney U test which includes all deaths)

Figure 7 shows the percentage of males and females among deaths in persons aged under 18, and in persons aged 18 years and over, for each year since 1983, the period over which data collection methods have been stable. For comparison, the mean percentages for 1983-2007 have also been included. Regression analysis showed that there was a significant rise in the proportion of females to males in those aged 18 and over[5], but any increase in this proportion for those aged under 18[6] failed to reach statistical significance, after adjustment for serial auto-correlation.

In 2007 there were seven deaths, only one of which was female, in the under-18 age-group. A survey of secondary schoolchildren aged 11-15 in England in 2007, carried out for the NHS Information Centre for health and social care found that 6% of boys and 7% of girls had sniffed volatile substances in the last year (Fuller, 2008); these percentages are slightly higher than in the previous sweep. The European School Survey Project on Alcohol and other Drugs (ESPAD) 2007, found that in the majority of countries surveyed there were no significant sex differences in lifetime inhalant use among 16-year olds, including the UK (Hibell et al, 2009). To take into account possible changes in the population at risk, Figures 8 and 9 show the mortality rates per million per year from 1998 to 2007, for the 10-14 and 15-19 age-groups by sex. In both age-groups the mortality rates for females are generally lower than those for males, although 2005 was an exception, as was 2006 for the 10-14 age group. It should be noted that the scales used for Figures 8 and 9 are different.

[5] $P < 0.001$ ($P < 0.001$)
[6] $P = 0.038$ ($P < 0.085$)
P values in brackets have been adjusted for serial auto-correlation.

DEATHS IN YOUNG PERSONS

Table 3 looks at the 10-14 and 15-19 year age-groups in the UK for 2007 and compares the numbers of deaths from VSA, from all causes, from transport accidents (TAs) and from drug misuse (defined as deaths where the underlying cause is poisoning, drug abuse or drug dependence and where any of the substances controlled under the Misuse of Drugs Act 1971 are involved). It should be noted that mortality data for all causes, transport accidents and drug misuse are for deaths **registered** in 2007.

In 2007 there were no VSA deaths in the 10-14 age-group, but at ages 15-19 years VSA accounted for 0.7% of deaths from all causes. In 2007, transport accidents which are by far the most frequent cause of death in these age-groups, accounted for 13.9% of all deaths at ages 10-14 years and 31.6% of all deaths at ages 15-19 years. Deaths associated with drug misuse accounted for 0.4% of all deaths in the 10-14 age group and 4.4% of all deaths in the 15-19 age-group.

Looking more closely at individual age data for England and Wales for 2000 to 2007, the ratio of VSA to drug misuse deaths appears to cross over between the ages of 15 and 16 years. In the 10-14 age-group there were 32 VSA deaths over the eight year period compared with 10 deaths related to drug misuse. In the same period at age 15 years there were 22 VSA deaths and 22 deaths related to drug misuse. At age 16 years there were 15 VSA deaths and 33 deaths related to drug misuse. It should be noted that all drug misuse death numbers are collated by registration year and that in England and Wales, VSA deaths coded to ICD 10: F18* (Mental and behavioural disorders due to volatile solvents) where an illicit drug is mentioned on the death record are also included in the drug-related deaths.

REGIONAL VARIATION

Table 4 shows the numbers of deaths by country and by Government Office Regions. Table 5 and Figure 10 give the Standardised Mortality Ratios (SMRs) for each region and country.

SMRs are used to compare the countries and regions taking account of any differences in the age and sex distribution of the population. The whole of the UK has an SMR = 100. Countries and regions where the SMR is greater than 100 have more deaths than expected and those where the SMR is less than 100 have fewer deaths than expected.

SMRs differed significantly across countries and Government Office Regions[7]. For the period 1998–2007 Northern Ireland had the highest SMR (178), and London had the lowest SMR (68). In general, there were more deaths than expected in Northern Ireland, the North East of England, Scotland and the East Midlands and fewer deaths than expected in the south and east of England.

SUBSTANCES ABUSED

We classify separately butane intended for fuel use and butane used as a propellant in aerosols. Almost all deaths were associated with only one volatile substance. In 5% of deaths from 1971-2007, two or more volatile substances were known to be involved. Table 6 and Figure 11 show the number of times each substance was associated with death and as all substances are included, the number of substances is greater than the number of deaths. Figure 12 gives the same information for under-18 year olds. The primary substance abused is shown in Table 7.

[7] chi-squared = 56.53, 11d.f., $P < 0.001$

Over the period 1998 to 2007 there was a significant change in the proportions of the substances abused[8]. Table 7 shows that the absolute number of deaths associated with gas fuels rose from 28 in 2006 to 41 in 2007, halting the decline seen in recent years. The declines in gas fuel-related deaths,[9] glue-related deaths,[10] and aerosol-related deaths[11], over the ten-year period were all statistically significant.

PRODUCTS ABUSED

Within the broad substance categories a wide variety of products has been abused. Table 8 shows products abused by substance for 1971 to 2007. This also gives the type of products linked to deaths, showing them as percentages of substances used, rather than as percentages of the total number of deaths. Thus deaths can appear more than once in this table. Since 1971, butane gas lighter fuel has been associated with 81% of fatal abuses of gas fuel (38% of all substances fatally abused), deodorants and anti-perspirants with 46% of fatal abuses of aerosols (8% of all substances) and contact adhesives with 47% of fatal abuses of glue (7% of all substances).

Table 9 gives the same information for 2007 alone. Butane gas lighter fuel was associated with 47% of all substances fatally abused. In addition, unspecified butane gas cans, some of which are likely to have been lighter fuel, accounted for another 10% of all substances.

Table 10 shows deaths associated with butane cigarette lighter refills. Among those aged under 18, there were three deaths in 2007, compared with two in both 2006 and 2005 and eight in 2004. Legislation which banned the sale of these items to under-18 year olds came

[8] chi-squared = 25.16, 12 d.f., P = 0.014, “fire extinguishers”, “others” and “not known” combined and adjacent years combined; test based on Table 6.
[9] P = 0.01 (P = 0.009) (one death associated with more than one type of gas fuel only counted once)
[10] P < 0.001 (P < 0.001)
[11] P = 0.037 (P = 0.014)
P values in brackets have been adjusted for serial auto-correlation.

into effect in October 1999 (The Cigarette Lighter Refill (Safety) Regulations 1999). In this age-group the average number of deaths associated with lighter fuel fell from 17 per year (1992 to 1999) to 8 per year (2000 to 2007)[12]. However the fall in deaths post October 1999 did not differ significantly from that predicted by the underlying trend[13]. Thus there is no firm evidence to suggest that the change in legislation was responsible for the fall.

Since 1995 there have been no deaths from text-correction fluid or pain-relief sprays and only one death from a fire extinguisher (involving an old product). There have been two deaths involving nail varnish, one in 1994 and one in 1995, and two involving nail varnish remover (acetone), one in 1995 and one in 2003.

In 2007 there were four deaths (6 in 2006) in adults associated with the inhalation of anaesthetic agents. Three involved nitrous oxide, supplied for non-medical use as cylinders or as caplets designed to be used with cream whipping devices, and were the result of asphyxiation. The supply, other than by a registered pharmacist, of nitrous oxide for inhalation is an offence under Section 52 of the Medicines Act 1968. The fourth death involved isoflurane, to which the deceased had access at his workplace. In addition there were three deaths associated with the inhalation of chloroform and two deaths associated with alkyl nitrites, so called “poppers”. The supply of chloroform and one form of the alkyl nitrites, isobutyl nitrite, is now controlled by legislation, The Dangerous Substances and Preparations (Safety) Regulations 2006, which came into full effect in August 2007.

[12] chi-squared (with continuity correction) = 31.52,1 d.f., P < 0.001
[13] The estimated fall of 12% (55% to 50%) from that predicted by the underlying trend was not statistically significant (P = 0.67).

In recent years there has been an increase in the number of suicides resulting from the inhalation of helium. This has coincided with the publication of a book and information on the Internet promoting helium for use in suicide. The cylinders of helium that can be used for this purpose are readily available from party balloon shops. The number of such deaths has been steadily rising since 1997 and there were seven in 2007. As the inhalation of helium does not fit with our definition of VSA (see page 3), these deaths have not been included in the dataset.

Included in the overall number of 58 deaths in 2007 were three involving the combined use of both volatile substances and drugs; it was not possible to say for certain which was responsible. Methadone was implicated in two of these cases, and an illicit drug in the third.

METHOD OF ADMINISTRATION

Methods of administration of volatile substances are shown in Table 11, and Table 12 gives this information by substance. The predominant method of abuse of butane lighter refills is believed to be by discharge directly into the mouth. In the absence of evidence to the contrary, lighter fuel abuse has been coded to this method. The most common method of abuse for aerosols has been by spraying through a cloth, and for glues has been by inhalation of the fumes or vapours from plastic bags.

MECHANISM OF DEATH

VSA causes death either as a result of a direct toxic mechanism or as a result of an indirect mechanism (such as asphyxia, inhalation of stomach contents or trauma). Where there is a possibility of an indirect mechanism this is given priority, otherwise the death is recorded as due to "direct toxic effects". Asphyxia resulting from other methods of administration, as well as by plastic bag, is now included in the data, resulting in a slight change to earlier numbers.

Table 13 and Figure 13 show the numbers of deaths due to each mechanism. The majority of deaths (70% overall and 76% in 2007) are due to direct toxic effects. The proportion of trauma deaths, which were more common with the abuse of glue, has decreased significantly[14], from an average of 8% (1998-2002) to an average of 3% (2003-2007). In recent years there has been an overall increase in the proportion of deaths associated with asphyxiation, normally due to the inhalation of the volatile substance via a plastic bag or mask. In 2007 three of the nine such deaths were suicides.

PREVIOUS HISTORY OF SOLVENT ABUSE

In 2007, for 37 of the 58 VSA deaths (64%), there was evidence of a previous history of solvent abuse. For the remaining 36% there was no evidence of previous volatile substance abuse, or the history was unknown. However, an absence of evidence should not lead to the assumption that death occurred on the first occasion, as this fact is often difficult to establish.

[14] Chi-squared with Yates' correction = 6.04, d.f. = 1, P = 0.014 (unknowns included)

PLACE OF DEATH AND FATAL ABUSE

Figure 14 shows the place of death. For 2007, 62% of deaths occurred at the home of the deceased or a friend, and 22% of deaths were recorded as having occurred in hospital.

Figure 15 shows where the fatal abuse took place. In 2007 the most common place for abuse remained the abuser's home (72%), with a further 9% of abuses in the home of a friend. In 14% of the deaths the substance was abused in a public place such as a park, shopping centre or the street.

Figure 16 shows the place of abuse by sex for the period 1998 – 2007. There was no significant difference between the sexes in the place of abuse[15].

Figure 17 shows the place where the substance was abused for each year from 1998 to 2007. Year to year variation in the proportion of those fatally abusing at either their home, or the home of a friend, was not statistically significant[16], although there was strong evidence of an increasing trend in this proportion over time[17].

The relationship between age and place of abuse is shown in Table 14. Looking at the last ten years, the most common place of fatal abuse was the person's home or the home of a friend, especially for those aged 18 and over.

[15] chi-squared = 6.07, 3 d.f., P = 0.11, combining "workplace", "school/institution" and "other" and excluding "unknowns".
[16] chi-squared = 13.98, 9 d.f., P = 0.15, ("unknowns" excluded).
[17] P = 0.002 (P < 0.001), P value in brackets has been adjusted for serial auto-correlation ("unknowns" excluded).

SUICIDES

Information since 1983 on deaths associated with the inhalation of a volatile substance where there was an inquest verdict of suicide is again provided in this report with the proviso that, as the coding protocol has changed over time, it is possible that in some years not all such suicides were included in the dataset. It is sometimes difficult to establish for suicides, particularly where no note is left, what influence the inhalation of a volatile substance had on the actions of the deceased. The use of a volatile substance in combination with a plastic bag over the head often results in death by asphyxiation, which may be the intended result.

Table 15 gives the frequency and median age at death by year, and Figure 18 shows the age and sex distribution. In 2007 there were nine suicide deaths associated with the inhalation of a volatile substance, which was similar to the levels in 2005 and 2006 but higher than in earlier years, bringing the total since 1983 to 118. To put these figures into perspective, it is worth mentioning that the total number of suicides (including deaths of undetermined intent) recorded in the UK from 1991 - 2007 by ONS was approximately 203,000 with a male to female ratio of 3:1 (ONS, 2009).

For suicides associated with the inhalation of a volatile substance, the median age increased significantly over the period 1983 to 2007[18]. For all VSA deaths since 1983, the male/female ratio was 5.4:1, but the difference in the sex ratio between the suicides and other VSA deaths was not statistically significant[19].

[18] Kendall's tau-b = 0.54, P < 0.001
[19] Fisher's exact test: P = 0.19

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STATISTICAL METHODS listed by footnote number

Statistical modelling was performed using STATA v9 and v10 (StatCorp LP, 4905 Lakeway Drive, College Station, TX-77845, USA, 1984-2008 : www.stata.com).

Footnote

3. Orthogonal polynomial Poisson regression was used to test for trend in log(yearly totals).

5-6. P values in brackets have been adjusted for serial autocorrelation in the residuals up to and including lag 2 using the Newey-West variance estimator.

9-11 Ordinary least squares regression was used to test for linear trend in the square root of yearly totals. P values in brackets have been adjusted for serial autocorrelation in the residuals up to and including lag 2 using the Newey-West variance estimator.

13 A Poisson regression model was used. This model was based on log monthly deaths 1983-2007 and included step changes for the 1992 advertising campaign and the 1999 legislation, linear and quadratic time trends and a simple sinusoidal component (wavelength 12 months) to adjust for periodicity.

17 Ordinary least squares regression was used to test for linear trend in proportions. P value in brackets has been adjusted for serial autocorrelation in the residuals up to and including lag 2 using the Newey-West variance estimator.

FIGURE 1

Volatile Substance Abuse Deaths

Collection and Dissemination of Data

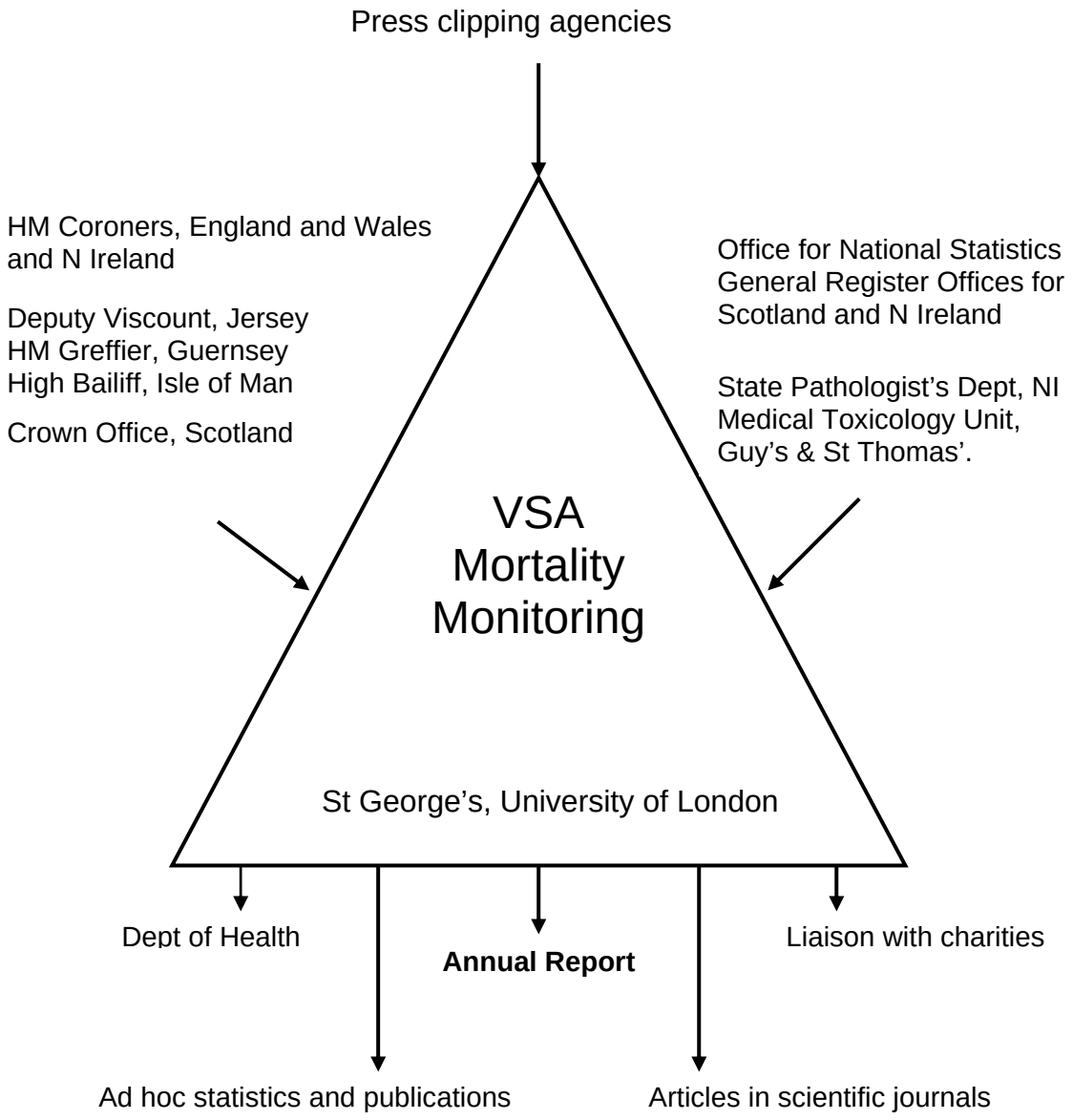

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FIGURE 2

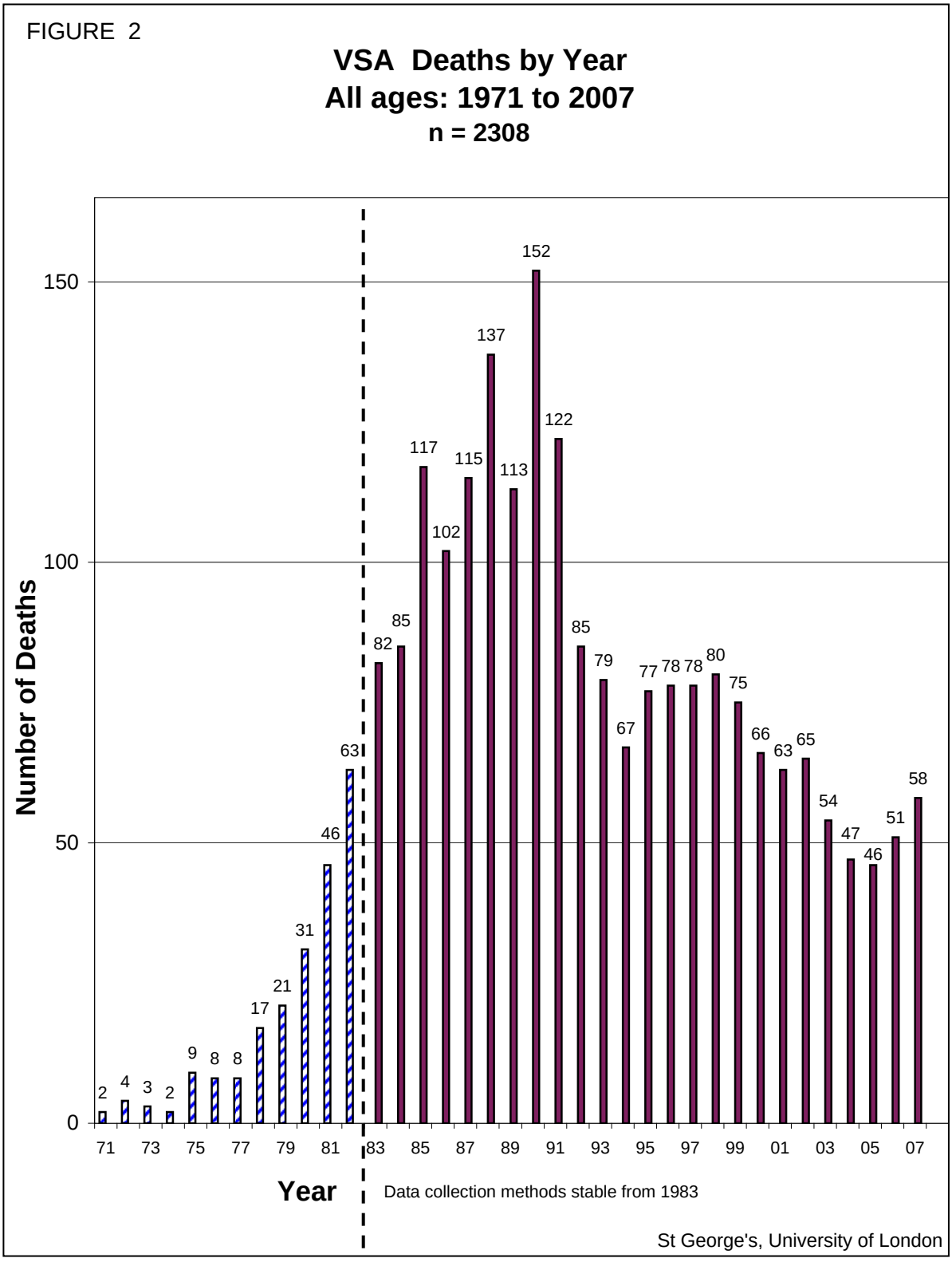
VSA Deaths by Year
All ages: 1971 to 2007
n = 2308
Number of Deaths
0
50
100
150
2 4 3 2 9 8 8 17 21 31 46 63 82 85 117 102 115 137 113 152 122 85 79 67 77 78 78 80 75 66 63 65 54 47 46 51 58
71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03 05 07
Year
Data collection methods stable from 1983
St George's, University of London

FIGURE 3

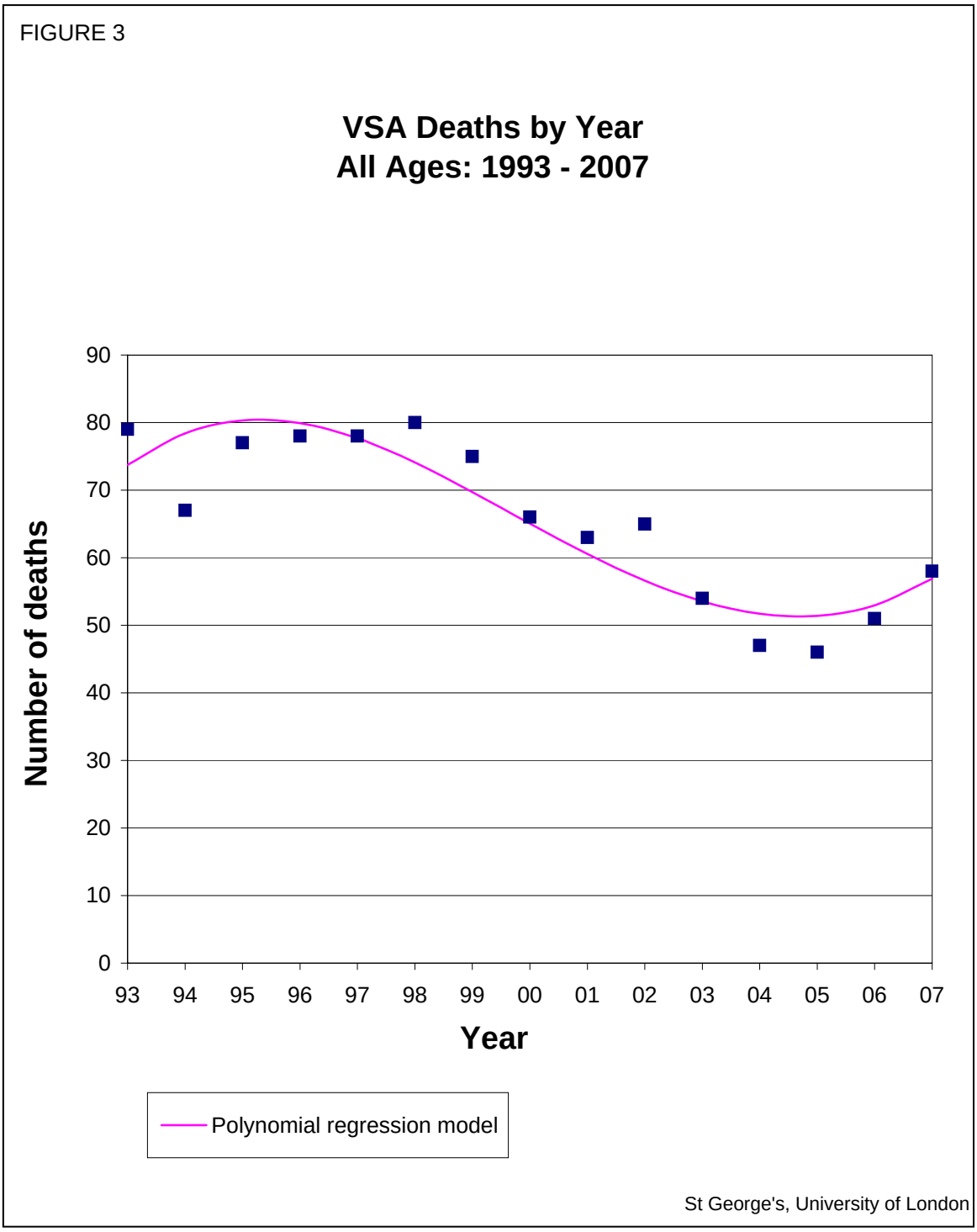
VSA Deaths by Year
All Ages: 1993 - 2007
Number of deaths
90
80
70
60
50
40
30
20
10
0
93
94
95
96
97
98
99
00
01
02
03
04
05
06
07
Year
Polynomial regression model
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TABLE 1

Age Distribution of Deaths
1971-2005, 2006 and 2007

AGE	1971- 2005		2006		2007		TOTAL		CUMULATIVE	
	No.	%	No.	%	No.	%	No.	%	No.	%
7	2	*0.1*	0	*0.0*	0	*0.0*	2	*0.1*	2	*0.1*
9	2	*0.1*	0	*0.0*	0	*0.0*	2	*0.1*	4	*0.2*
10	4	*0.2*	0	*0.0*	0	*0.0*	4	*0.2*	8	*0.3*
11	9	*0.4*	0	*0.0*	0	*0.0*	9	*0.4*	17	*0.7*
12	32	*1.5*	0	*0.0*	0	*0.0*	32	*1.4*	49	*2.1*
13	72	*3.3*	0	*0.0*	0	*0.0*	72	*3.1*	121	*5.2*
14	187	*8.5*	1	*2.0*	0	*0.0*	188	*8.1*	309	*13.4*
15	277	*12.6*	3	*5.9*	0	*0.0*	280	*12.1*	589	*25.5*
16	272	*12.4*	1	*2.0*	4	*6.9*	277	*12.0*	866	*37.5*
17	216	*9.8*	2	*3.9*	3	*5.2*	221	*9.6*	1087	*47.1*
18	170	*7.7*	3	*5.9*	2	*3.4*	175	*7.6*	1262	*54.7*
19	115	*5.2*	1	*2.0*	1	*1.7*	117	*5.1*	1379	*59.7*
20-24	344	*15.6*	4	*7.8*	8	*13.8*	356	*15.4*	1735	*75.2*
25-34	291	*13.2*	17	*33.3*	15	*25.9*	323	*14.0*	2058	*89.2*
35-44	108	*4.9*	10	*19.6*	17	*29.3*	135	*5.8*	2193	*95.0*
45-54	55	*2.5*	6	*11.8*	5	*8.6*	66	*2.9*	2259	*97.9*
55-64	30	*1.4*	2	*3.9*	0	*0.0*	32	*1.4*	2291	*99.3*
65-74	10	*0.5*	1	*2.0*	1	*1.7*	12	*0.5*	2303	*99.8*
75 & over	3	*0.1*	0	*0.0*	2	*3.4*	5	*0.2*	2308	*100.0*
TOTAL	2199	*100.0*	51	*100.0*	58	*100.0*	2308	*100.0*		

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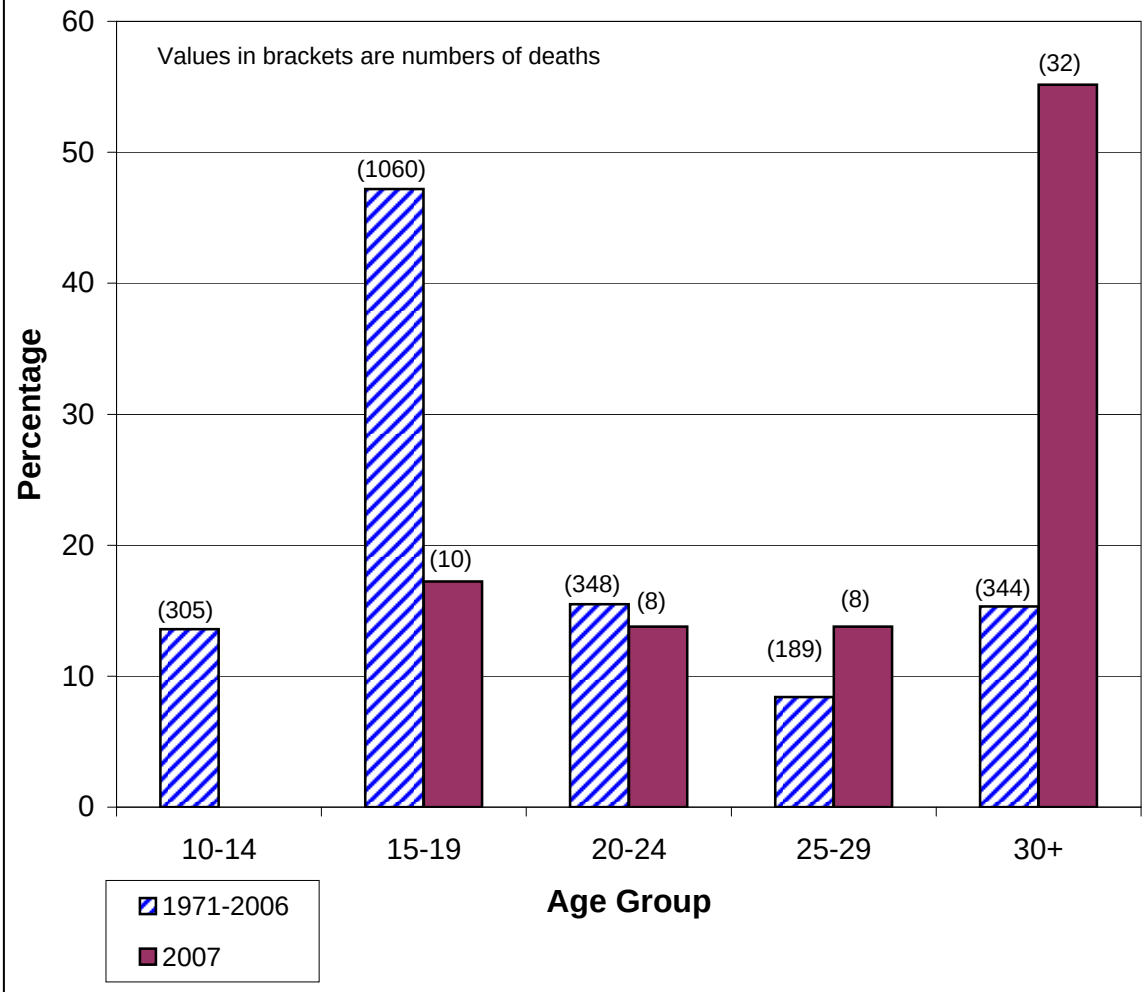
FIGURE 4

Age Distribution of Deaths 1971-2006 and 2007



Note: In 1971-2006, there were 4 deaths of children aged under 10 years and in 2007 there were no deaths in the 10-14 age group

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FIGURE 5

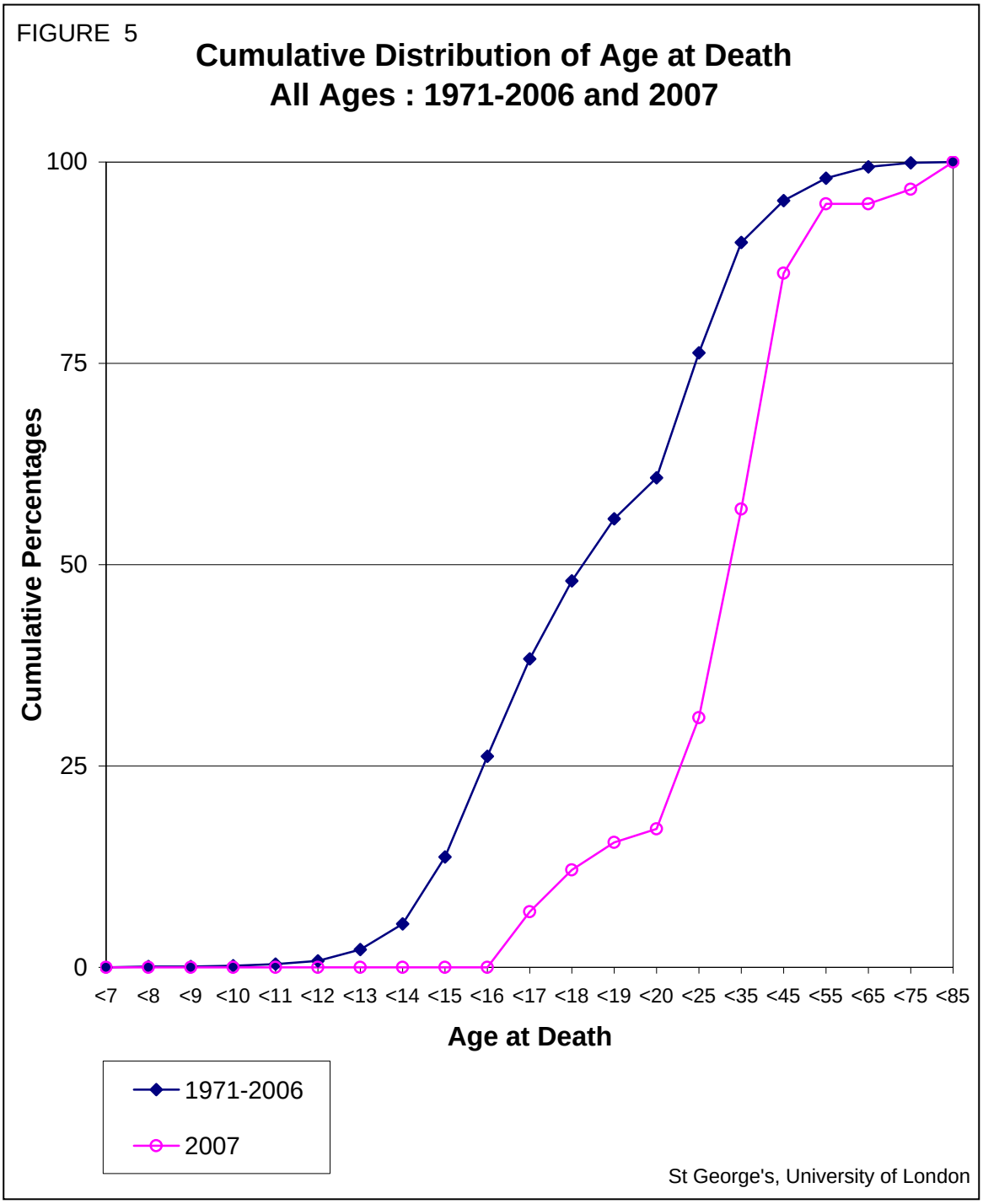
Cumulative Distribution of Age at Death
All Ages : 1971-2006 and 2007
Cumulative Percentages
100
75
50
25
0
<7 <8 <9 <10 <11 <12 <13 <14 <15 <16 <17 <18 <19 <20 <25 <35 <45 <55 <65 <75 <85
Age at Death
1971-2006
2007
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FIGURE 6

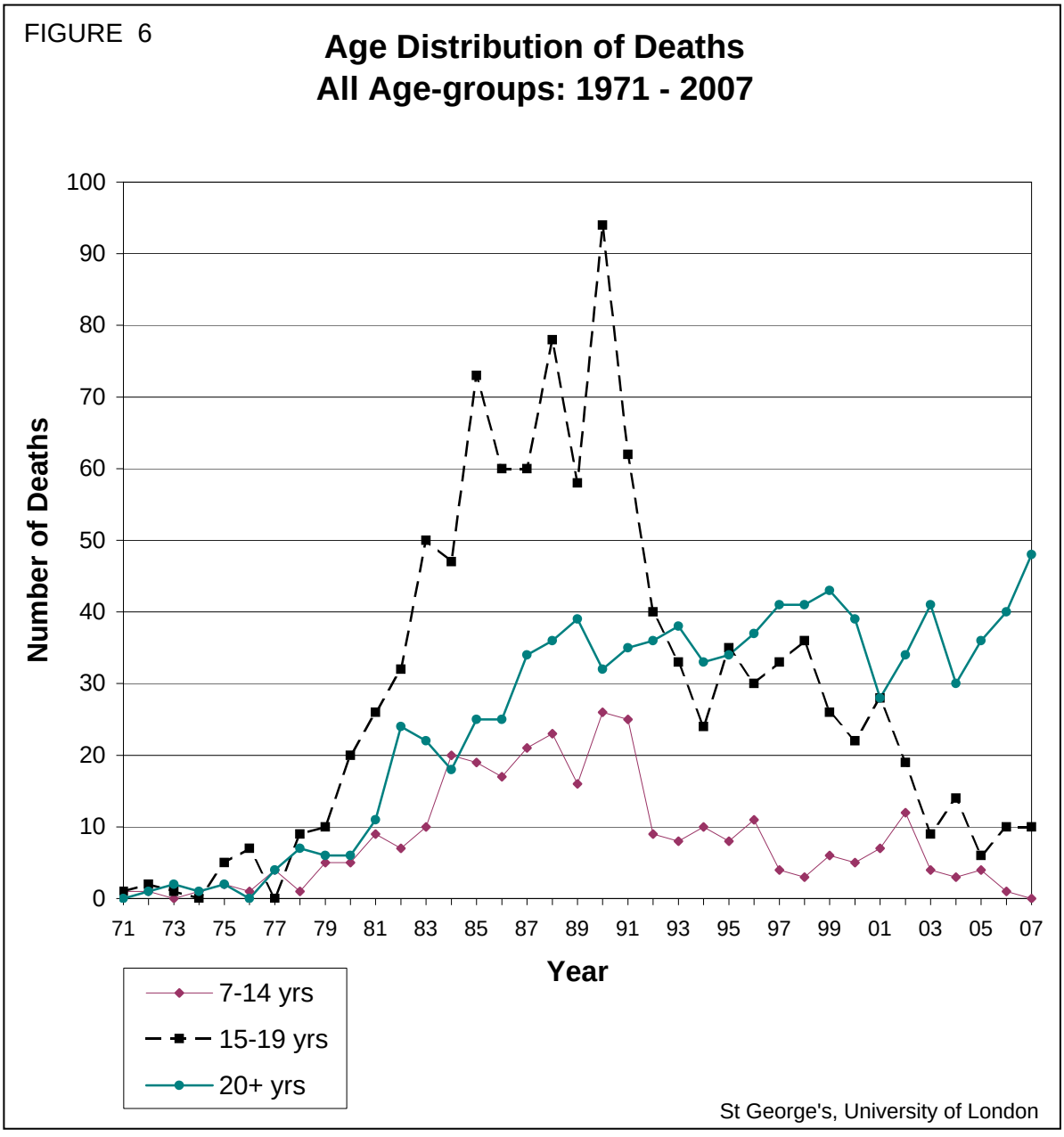
Age Distribution of Deaths
All Age-groups: 1971 - 2007
Number of Deaths
100
90
80
70
60
50
40
30
20
10
0
71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03 05 07
Year
7-14 yrs
15-19 yrs
20+ yrs
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TABLE 2

Sex Distribution of Deaths
1971- 1997 and each year to 2007

SEX	YEAR 71-97	98	99	00	01	02	03	04	05	06	07	TOTAL
Male	1481	69	67	54	49	49	39	38	35	38	48	1967
%	*87.0*	*86.3*	*89.3*	*81.8*	*77.8*	*75.4*	*72.2*	*80.9*	*76.1*	*74.5*	*82.8*	*85.2*
Female	*222*	11	8	12	14	16	15	9	11	13	10	341
%	*13.0*	*13.8*	*10.7*	*18.2*	*22.2*	*24.6*	*27.8*	*19.1*	*23.9*	*25.5*	*17.2*	*14.8*
TOTAL	1703	80	75	66	63	65	54	47	46	51	58	2308

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FIGURE 7

Sex Distribution of Deaths by Age 1983 - 2007

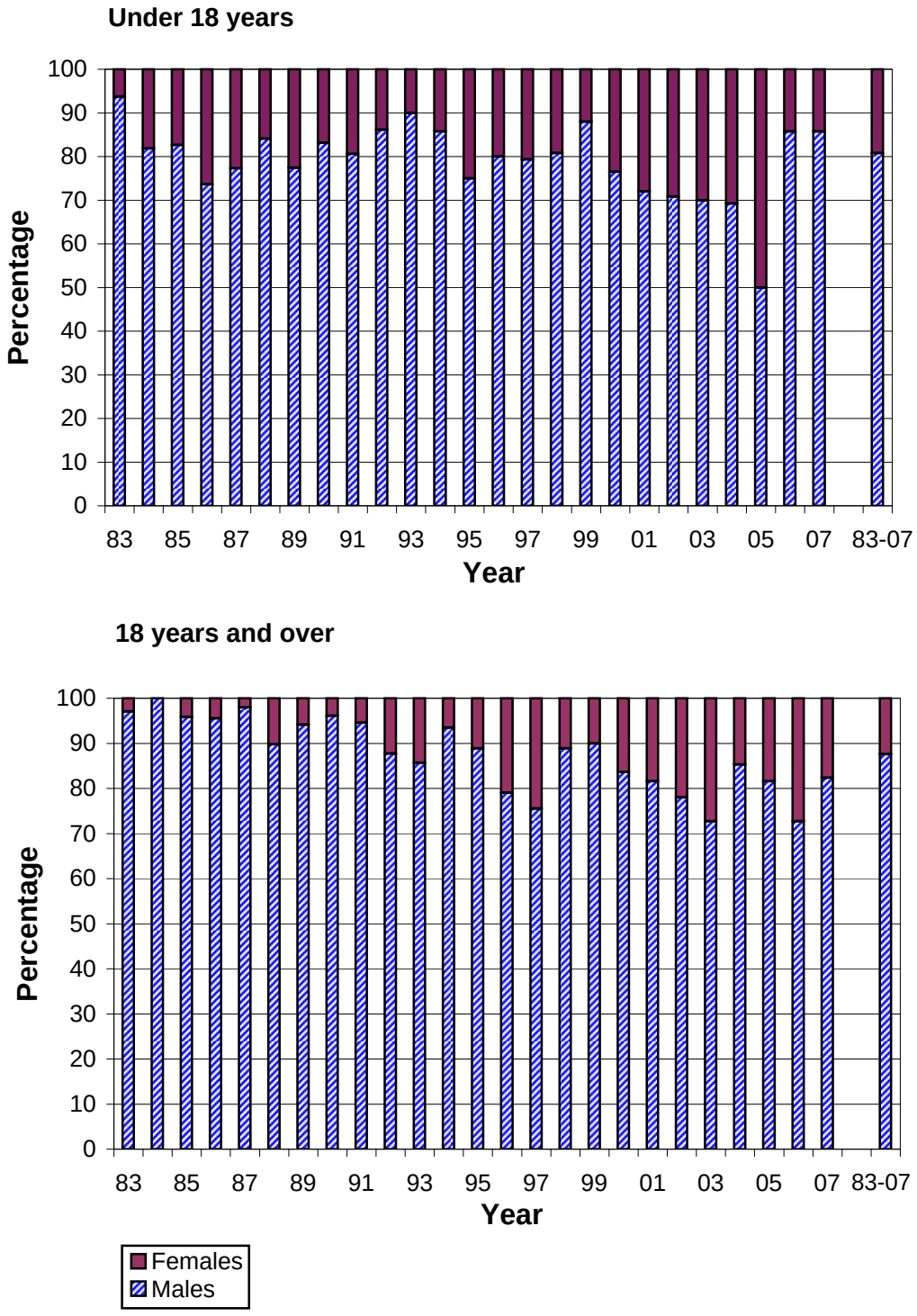

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FIGURE 8

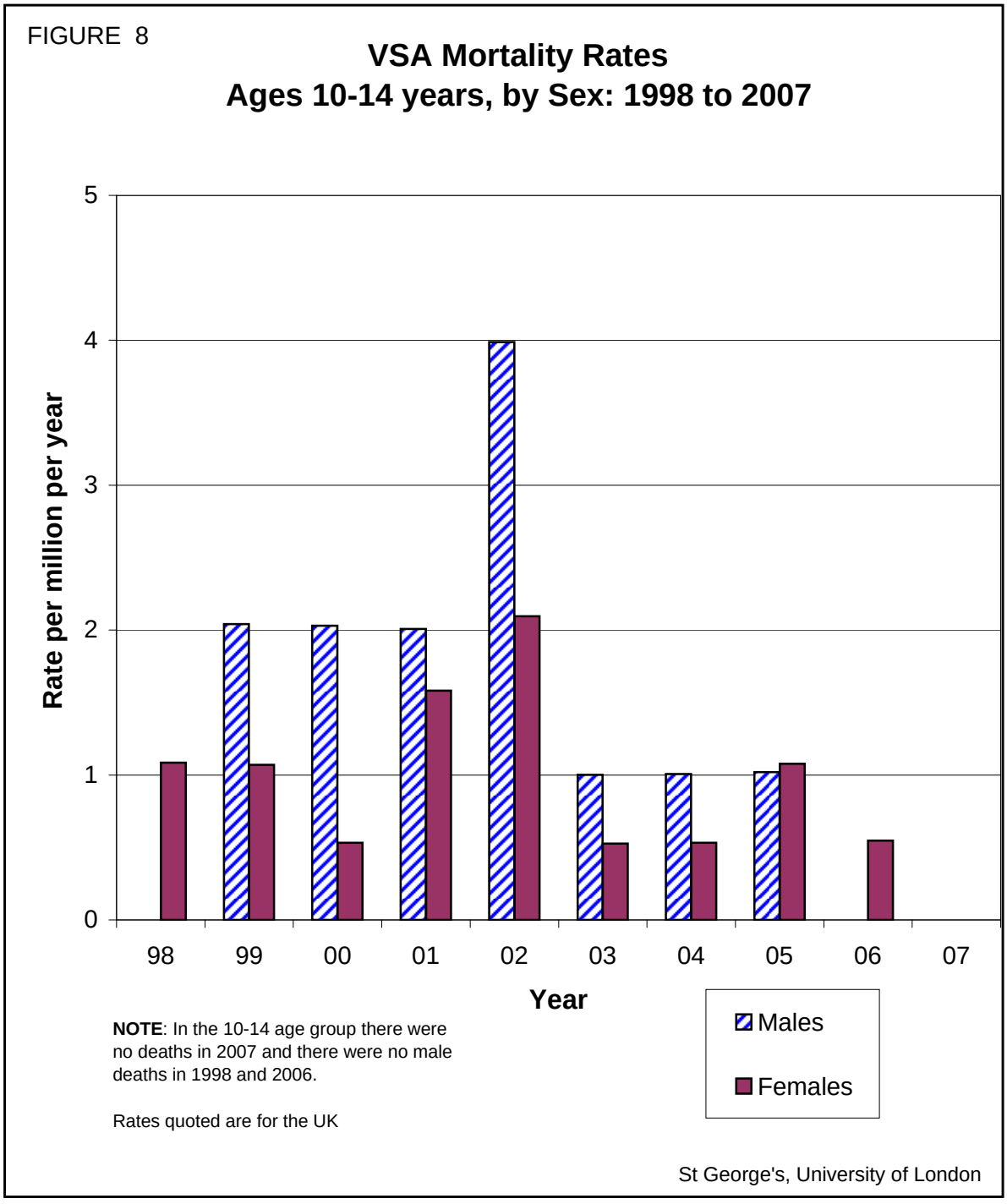
VSA Mortality Rates
Ages 10-14 years, by Sex: 1998 to 2007
Rate per million per year
0
1
2
3
4
5
98
99
00
01
02
03
04
05
06
07
Year
Males
Females
NOTE: In the 10-14 age group there were no deaths in 2007 and there were no male deaths in 1998 and 2006.
Rates quoted are for the UK
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FIGURE 9

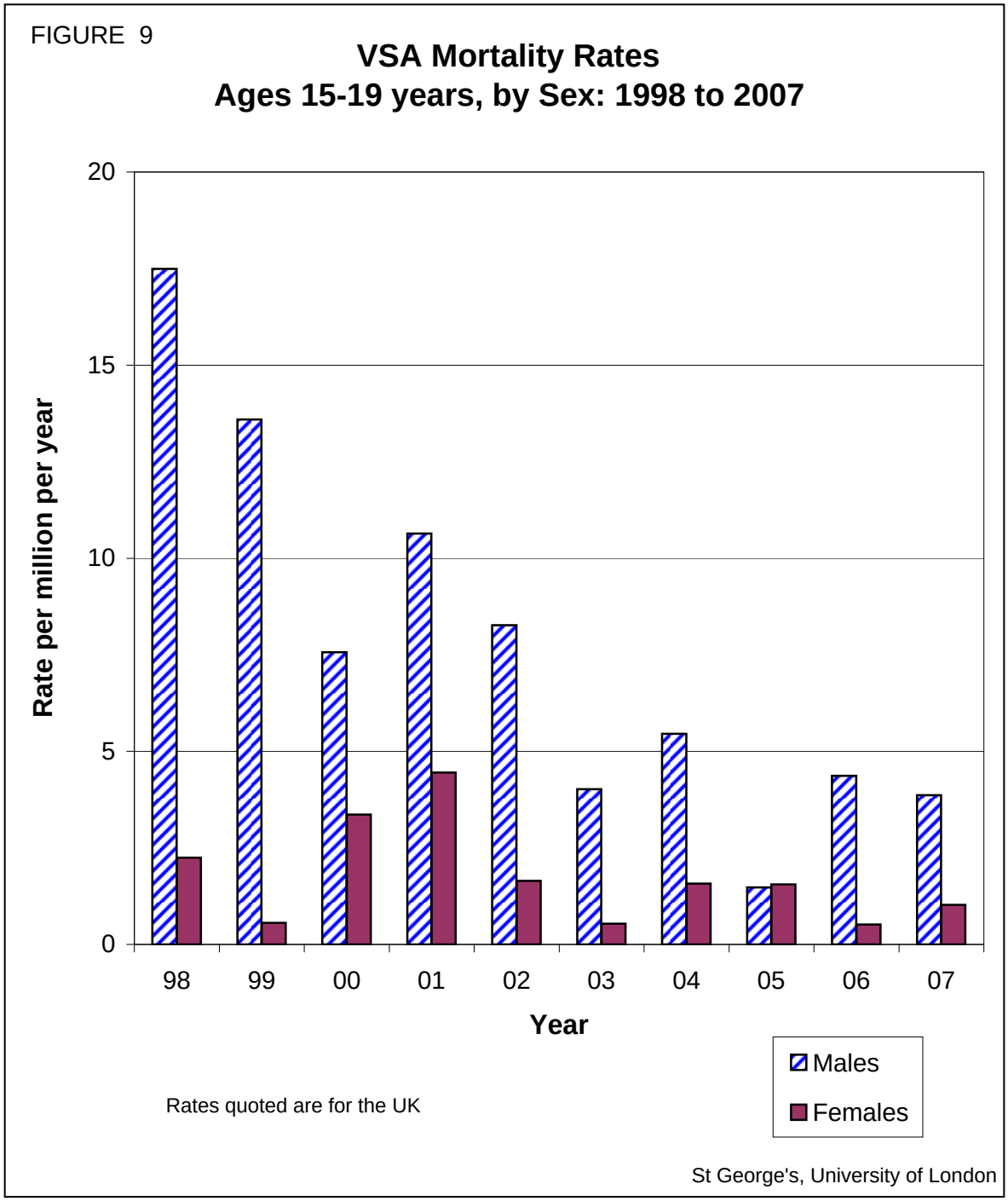
VSA Mortality Rates
Ages 15-19 years, by Sex: 1998 to 2007
Rate per million per year
20
15
10
5
0
98
99
00
01
02
03
04
05
06
07
Year
Males
Females
Rates quoted are for the UK
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TABLE 3

Numbers of Deaths in UK in 2007 for Age Groups 10-14 and 15-19 years
All Causes, Transport Accidents, Drug Misuse and VSA

CAUSE OF DEATH	Ages 10-14		Ages 15-19	
	No.	*% of all cause deaths*	No.	*% of all cause deaths*
All causes*				
Male	270	*56.0*	979	*69.8*
Female	212	*44.0*	423	*30.2*
TOTAL	482	*100.0*	1402	*100.0*
Transport Accidents*				
Male	48	*17.8*	337	*34.4*
Female	19	*9.0*	106	*25.1*
TOTAL	67	*13.9*	443	*31.6*
Drug misuse-related*				
TOTAL	2	*0.4*	61	*4.4*
Volatile Substance Abuse				
Male	0	*0.0*	8	*0.8*
Female	0	*0.0*	2	*0.5*
TOTAL	0	*0.0*	10	*0.7*

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** Deaths registered in 2007*

Sources of data for deaths from all causes, from transport accidents and from drug misuse:

England and Wales:	Office for National Statistics
Scotland:	General Register Office for Scotland
Northern Ireland:	Northern Ireland Statistics and Research Agency

TABLE 4

Number of VSA Deaths by Government Office Region (England) and Country: 1971-1997 and each year to 2007

REGION or COUNTRY	YEAR											
	71-97	98	99	00	01	02	03	04	05	06	07	TOTAL
ENGLAND:												
North East	105	7	7	3	3	6	4	1	2	2	3	143
North West	222	16	6	10	4	4	5	6	1	3	2	279
Yorkshire/Humber	164	4	5	5	10	7	4	6	4	4	5	218
East Midlands	105	10	6	5	9	5	3	7	6	4	6	166
West Midlands	150	6	7	7	5	10	5	3	3	5	7	208
East	108	5	4	7	5	2	4	4	4	5	5	153
London	209	6	7	4	6	2	8	6	8	4	5	265
South East	173	7	4	7	4	10	8	5	7	5	7	237
South West	98	3	8	4	3	5	1	3	1	2	3	131
TOTAL ENGLAND	1334	64	54	52	49	51	42	41	36	34	43	1800
WALES	68	3	7	1	1	5	1	4	1	5	2	98
SCOTLAND	232	10	8	9	9	8	6	1	4	9	10	306
N.IRELAND	61	3	6	2	4	1	5	1	5	3	3	94
CHANNEL ISLANDS	6	0	0	1	0	0	0	0	0	0	0	7
ISLE OF MAN	2	0	0	1	0	0	0	0	0	0	0	3
TOTAL UK	1703	80	75	66	63	65	54	47	46	51	58	2308

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TABLE 5

Standardised Mortality Ratios for Government Office Region (England) and Country, adjusted for Age and Sex: 1998 - 2007

REGION or COUNTRY	Deaths Observed	Deaths Expected	SMR	95% confidence interval
ENGLAND:				
North East	38	25.6	149	105 to 204
North West	57	68.6	83	63 to 108
Yorkshire & the Humber	54	51.0	106	79 to 138
East Midlands	61	42.6	143	110 to 184
West Midlands	58	53.6	108	82 to 140
East	45	53.4	84	61 to 113
London	56	82.7	68	51 to 88
South East	64	80.1	80	62 to 102
South West	33	47.8	69	48 to 97
TOTAL ENGLAND	466	505.3	92	84 to 101
WALES	30	28.6	105	71 to 150
SCOTLAND	74	50.6	146	115 to 184
NORTHERN IRELAND	33	18.5	178	123 to 250
WHOLE OF UK*	603	603	100	

Crude Mortality Rates per million population per year	Males	Females	Both
	1.70	0.39	1.01

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**Channel Isles and Isle of Man are not included*

Sources of population data (Average of census updated mid-year estimates for 2002 and 2003):

England and Wales:	Office for National Statistics
Scotland:	General Register Office for Scotland
Northern Ireland:	Northern Ireland Statistics and Research Agency

Note: Expected deaths may not add up exactly due to rounding

FIGURE 10

Standardised Mortality Ratios for Government Office Region(England) and Country All Ages: 1998 - 2007

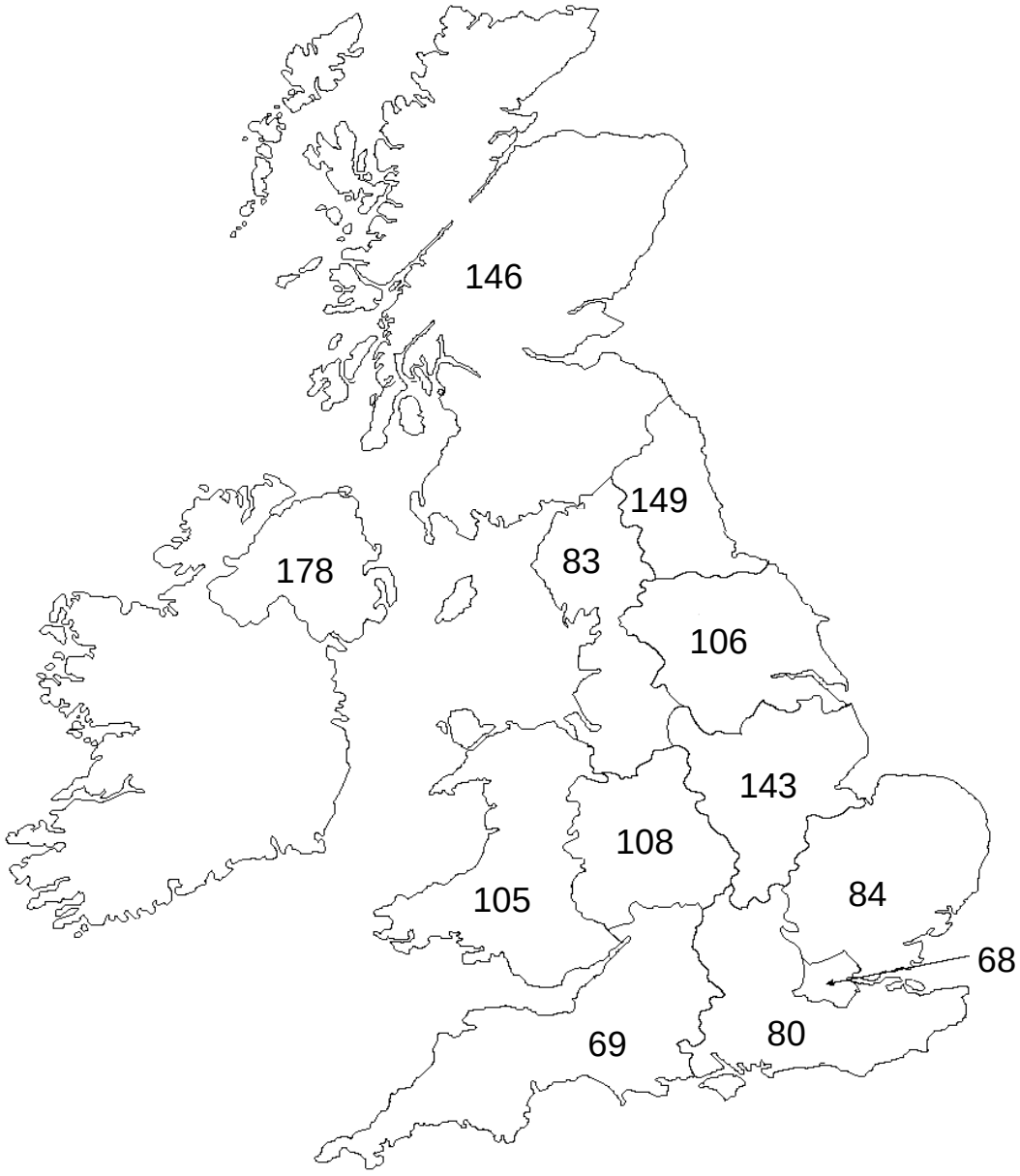

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TABLE 6

Substances Abused
All ages: 1971-1997 and each year to 2007
n=2419

SUBSTANCE		YEAR 71-97	98	99	00	01	02	03	04	05	06	07	TOTAL
GAS FUELS	No.	737	58	50	38	47	46	38	33	29	28	42	1146
	%	*40.9*	*69.9*	*66.7*	*56.7*	*72.3*	*70.8*	*69.1*	*68.8*	*63.0*	*54.9*	*67.7*	*47.4*
AEROSOLS	No.	336	9	10	13	13	10	6	5	8	7	6	423
	%	*18.6*	*10.8*	*13.3*	*19.4*	*20.0*	*15.4*	*10.9*	*10.4*	*17.4*	*13.7*	*9.7*	*17.5*
GLUES	No.	316	7	5	7	4	3	4	5	2	1	1	355
	%	*17.5*	*8.4*	*6.7*	*10.4*	*6.2*	*4.6*	*7.3*	*10.4*	*4.3*	*2.0*	*1.6*	*14.7*
FIRE EXTINGUISHER	No.	57	0	1	0	0	0	0	0	0	0	0	58
	%	*3.2*	*0.0*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*2.4*
OTHER	No.	345	8	9	8	1	6	7	5	7	15	12	423
	%	*19.1*	*9.6*	*12.0*	*11.9*	*1.5*	*9.2*	*12.7*	*10.4*	*15.2*	*29.4*	*19.4*	*17.5*
NOT KNOWN	No.	11	1	0	1	0	0	0	0	0	0	1	14
	%	*0.6*	*1.2*	*0.0*	*1.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.6*	*0.6*
TOTAL	No.	1802	83	75	67	65	65	55	48	46	51	62	2419
	%	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

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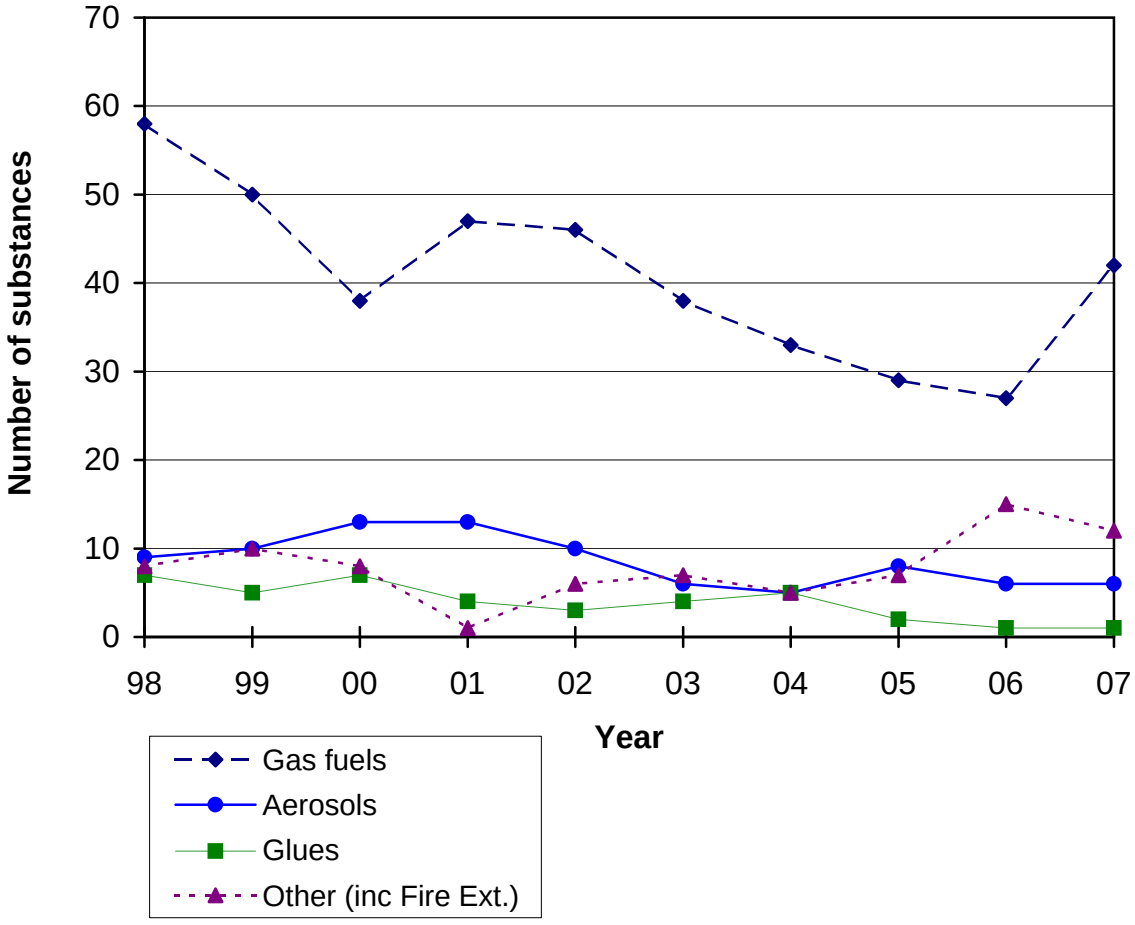
Note: All substances associated with a death are included in this table, so numbers of substances are greater than numbers of deaths.

FIGURE 11

Substances Associated with Fatal Abuse
All Ages: 1998 - 2007
n=612



Note: All substances associated with a death are included in this table, so numbers of substances may be greater than numbers of deaths.

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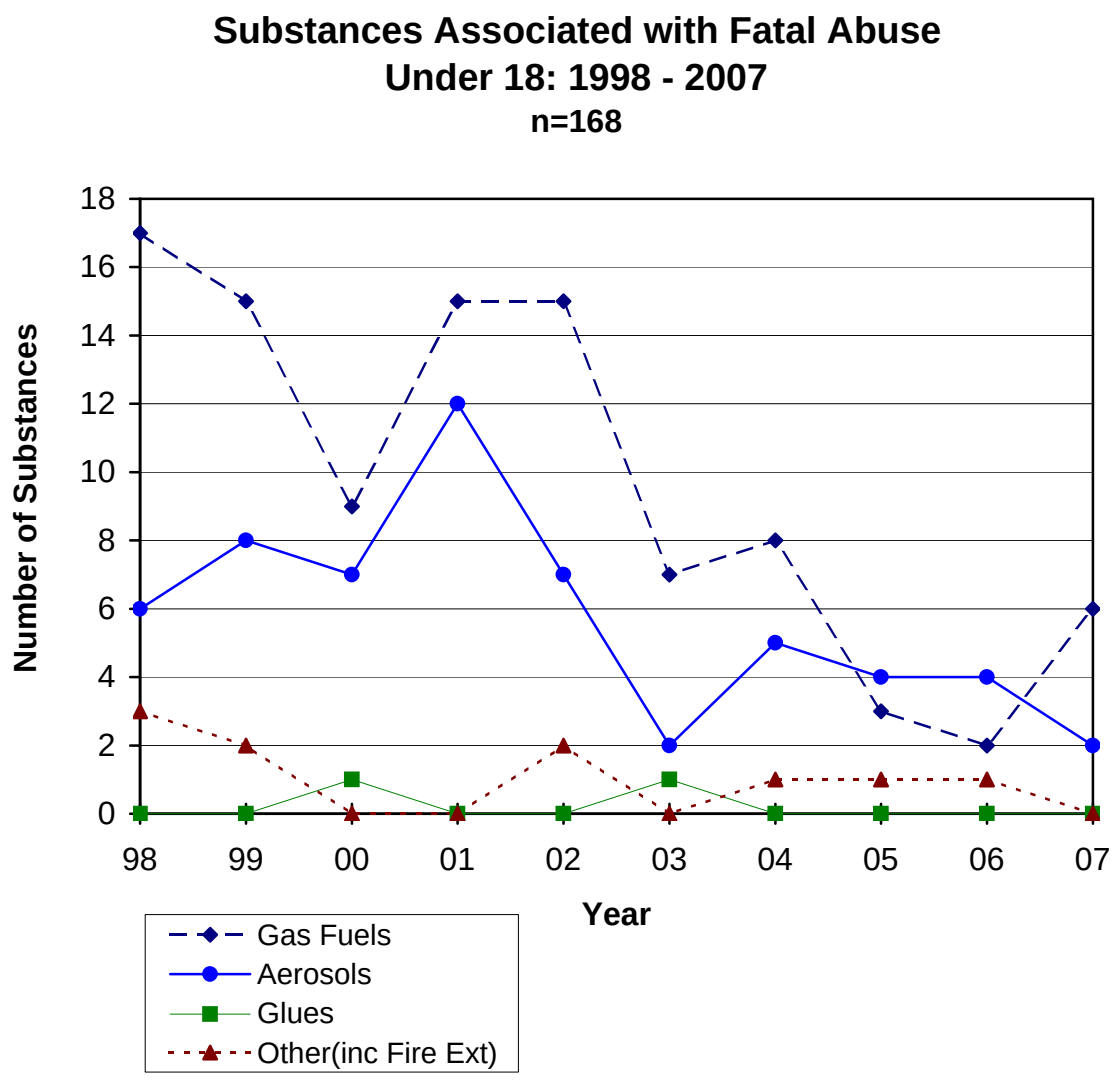
FIGURE 12



Note: All substances associated with a death are included in this table, so numbers of substances may be greater than numbers of deaths.

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TABLE 7

Primary Substances Abused
All Ages: each year 1998 to 2007
n=605

SUBSTANCE		YEAR 98	99	00	01	02	03	04	05	06	07	TOTAL
GAS FUELS	No.	57	50	38	46	46	38	33	29	28	41	406
	%	*71.3*	*66.7*	*57.6*	*73.0*	*70.8*	*70.4*	*70.2*	*63.0*	*54.9*	*70.7*	*67.1*
AEROSOLS	No.	8	10	13	12	10	5	4	8	7	5	82
	%	*10.0*	*13.3*	*19.7*	*19.0*	*15.4*	*9.3*	*8.5*	*17.4*	*13.7*	*8.6*	*13.6*
GLUES	No.	7	5	6	4	3	4	5	2	1	0	37
	%	*8.8*	*6.7*	*9.1*	*6.3*	*4.6*	*7.4*	*10.6*	*4.3*	*2.0*	*0.0*	*6.1*
FIRE EXTINGUISHER	No.	0	1	0	0	0	0	0	0	0	0	1
	%	*0.0*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.2*
OTHER	No.	7	9	8	1	6	7	5	7	15	11	76
	%	*8.8*	*12.0*	*12.1*	*1.6*	*9.2*	*13.0*	*10.6*	*15.2*	*29.4*	*19.0*	*12.6*
NOT KNOWN	No.	1	0	1	0	0	0	0	0	0	1	3
	%	*1.3*	*0.0*	*1.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.7*	*0.5*
TOTAL	No.	80	75	66	63	65	54	47	46	51	58	605

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TABLE 8

Product Abused by Substance: 1971 - 2007
n = 2419

PRODUCT	No.	% of Substance Group	% of all Substances
GAS FUELS			
Lighter fuel	930	*81.2*	*38.4*
Butane gas cans	42	*3.7*	*1.7*
Domestic gas (bottled)	111	*9.7*	*4.6*
Propane gas cylinder	36	*3.1*	*1.5*
Acetylene	3	*0.3*	*0.1*
Unspecified butane	24	*2.1*	*1.0*
TOTAL for GAS FUELS	1146	*100.0*	*47.4*
AEROSOLS			
Deodorant / Antiperspirant	195	*46.1*	*8.1*
Pain relief spray	63	*14.9*	*2.6*
Air freshener	53	*12.5*	*2.2*
Hair spray	30	*7.1*	*1.2*
Cleaning fluids	17	*4.0*	*0.7*
Insect spray	8	*1.9*	*0.3*
Paint spray	8	*1.9*	*0.3*
Aerosol glue	2	*0.5*	*0.1*
Other aerosols	47	*11.1*	*1.9*
TOTAL for AEROSOLS	423	*100.0*	*17.5*
GLUES			
Contact adhesives	167	*47.0*	*6.9*
Bicycle tyre repair glue	10	*2.8*	*0.4*
Model glue	3	*0.8*	*0.1*
Other glues	175	*49.3*	*7.2*
TOTAL for GLUES	355	*100.0*	*14.7*
OTHER			
Typewriter correction fluid	113	*26.7*	*4.7*
Chloroform	38	*9.0*	*1.6*
Dry cleaning fluids/plaster remover	38	*9.0*	*1.6*
Petrol	38	*9.0*	*1.6*
Paint thinners/brush cleaner	15	*3.5*	*0.6*
Domestic cleaning fluids	16	*3.8*	*0.7*
Industrial solvents/degreasers	16	*3.8*	*0.7*
Anaesthetic agents	48	*11.3*	*2.0*
Carbon tetrachloride	11	*2.6*	*0.5*
Paint strippers	6	*1.4*	*0.2*
Alkyl nitrites	16	*3.8*	*0.7*
Refrigerant gases	5	*1.2*	*0.2*
Brake cleaner	3	*0.7*	*0.1*
Ether	6	*1.4*	*0.2*
Benzene	1	*0.2*	*0.0*
Petroleum spirits (excl. petrol)	2	*0.5*	*0.1*
Miscellaneous products	51	*12.1*	*2.1*
TOTAL for OTHER	423	*100.0*	*17.5*
Fire Extinguishers	58	*100.0*	*2.4*
Substance not known	14	*100.0*	*0.6*

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TABLE 9

Product Abused by Substance: 2007
n = 62

PRODUCT	No.	% of Substance Group	% of all Substances
GAS FUELS			
Lighter fuel	29	*69.0*	*46.8*
Butane gas cans	6	*14.3*	*9.7*
Domestic gas (bottled)	2	*4.8*	*3.2*
Propane gas cylinder	5	*11.9*	*8.1*
Unspecified butane	0	*0.0*	*0.0*
TOTAL for GAS FUELS	42	*100.0*	*67.7*
AEROSOLS			
Deodorant / Antiperspirant	5	*83.3*	*8.1*
Air freshener	0	*0.0*	*0.0*
Hair Spray	0	*0.0*	*0.0*
Insect spray	1	*16.7*	*1.6*
TOTAL for AEROSOLS	6	*100.0*	*9.7*
GLUES			
Contact adhesives	0	*0.0*	*0.0*
Unspecified glues	1	*100.0*	*1.6*
TOTAL for GLUES	1	*100.0*	*1.6*
OTHER			
Chloroform	3	*25.0*	*4.8*
Anaesthetic agents:			
Nitrous Oxide	3	*25.0*	*4.8*
Isoflurane	1	*8.3*	*1.6*
Alkyl nitrites	2	*16.7*	*3.2*
Petrol	1	*8.3*	*1.6*
Miscellaneous	2	*16.7*	*3.2*
TOTAL for OTHER	12	*100.0*	*19.4*
Substance not known	1		*1.6*

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Note: All substances associated with a death are included in this table, so the number of products is greater than the number of deaths

TABLE 10

Deaths Associated with Cigarette Lighter Refills*
1971-1997 and each year to 2007
n = 923

Under 18 years

	Year											
Age/Sex	**71-97**	**98**	**99**	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**TOTAL**
Male	305	13	15	7	12	13	4	6	1	2	2	380
Female	56	3	0	1	3	2	2	2	1	0	1	71
Total	**361**	**16**	**15**	**8**	**15**	**15**	**6**	**8**	**2**	**2**	**3**	**451**
%	*39.0*	*61.5*	*60.0*	*47.1*	*60.0*	*62.5*	*60.0*	*61.5*	*25.0*	*28.6*	*42.9*	*41.5*
All VSA Deaths	925	26	25	17	25	24	10	13	8	7	7	1087

The Cigarette Lighter Refill (Safety) Regulations came into effect in October 1999

18 years and over

	Year											
Age/Sex	**71-97**	**98**	**99**	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**TOTAL**
Male	216	23	25	19	17	16	17	14	11	12	16	386
Female	32	4	3	6	7	6	6	3	3	8	8	86
Total	**248**	**27**	**28**	**25**	**24**	**22**	**23**	**17**	**14**	**20**	**24**	**472**
%	*31.9*	*-3.2*	*57.1*	*61.0*	*52.2*	*55.0*	*76.7*	*45.9*	*42.4*	*46.5*	*47.1*	*38.7*
All VSA Deaths	778	-845	49	41	46	40	30	37	33	43	51	1221

All Ages

	Year											
Age/Sex	**71-97**	**98**	**99**	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**TOTAL**
Male	521	36	40	26	29	29	21	20	12	14	18	766
Female	88	7	3	7	10	8	8	5	4	8	9	157
Total	**609**	**43**	**43**	**33**	**39**	**37**	**29**	**25**	**16**	**22**	**27**	**923**
%	*35.8*	*53.8*	*57.3*	*50.0*	*61.9*	*56.9*	*53.7*	*53.2*	*34.8*	*43.1*	*46.6*	*40.0*
All VSA Deaths	1703	80	75	66	63	65	54	47	46	51	58	2308

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* Deaths associated with disposable cigarette lighters are not included in this table.

TABLE 11

Methods of Administration of Primary Substances 1971- 2005, 2006 and 2007

METHOD	1971- 2005		2006		2007		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Directly into mouth	700	*31.8*	27	*52.9*	31	*53.4*	758	*32.8*
Sniffed from container	158	*7.2*	2	*3.9*	3	*5.2*	163	*7.1*
Sniffed from cloth or sleeve	215	*9.8*	4	*7.8*	2	*3.4*	221	*9.6*
Sniffed from plastic bag	297	*13.5*	1	*2.0*	0	*0.0*	298	*12.9*
Plastic bag over head	260	*11.8*	13	*25.5*	15	*25.9*	288	*12.5*
Mask or padding over face	61	*2.8*	3	*5.9*	6	*10.3*	70	*3.0*
Other	24	*1.1*	0	*0.0*	0	*0.0*	24	*1.0*
Not known	484	*22.0*	1	*2.0*	1	*1.7*	486	*21.1*
TOTAL	2199	*100.0*	51	*100.0*	58	*100.0*	2308	*100.0*

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TABLE 12

Methods of Administration for each Substance Group 1971- 2005, 2006 and 2007

METHOD	1971- 2005		2006		2007		TOTAL	
	No.	%	No.	%	No.	%	No.	%
GAS FUELS								
Directly into mouth	630	*59.4*	22	*78.6*	30	*73.2*	682	*60.4*
Sniffed from container	31	*2.9*	0	*0.0*	0	*0.0*	31	*2.7*
Sniffed from cloth or sleeve	13	*1.2*	0	*0.0*	1	*2.4*	14	*1.2*
Sniffed from plastic bag	42	*4.0*	0	*0.0*	0	*0.0*	42	*3.7*
Plastic bag over head	120	*11.3*	5	*17.9*	10	*24.4*	135	*12.0*
Mask or padding over face	22	*2.1*	1	*3.6*	0	*0.0*	23	*2.0*
Other	10	*0.9*	0	*0.0*	0	*0.0*	10	*0.9*
Not known	192	*18.1*	0	*0.0*	0	*0.0*	192	*17.0*
TOTAL for GAS FUELS	1060	*100.0*	28	*100.0*	41	*100.0*	1129	*100.0*
AEROSOLS								
Directly into mouth	46	*12.3*	4	*57.1*	1	*20.0*	51	*13.2*
Sniffed from container	15	*4.0*	0	*0.0*	0	*0.0*	15	*3.9*
Sniffed from cloth or sleeve	97	*25.9*	2	*28.6*	1	*20.0*	100	*25.9*
Sniffed from plastic bag	68	*18.2*	1	*14.3*	0	*0.0*	69	*17.9*
Plastic bag over head	40	*10.7*	0	*0.0*	3	*60.0*	43	*11.1*
Mask or padding over face	10	*2.7*	0	*0.0*	0	*0.0*	10	*2.6*
Other	2	*0.5*	0	*0.0*	0	*0.0*	2	*0.5*
Not known	96	*25.7*	0	*0.0*	0	*0.0*	96	*24.9*
TOTAL for AEROSOLS	374	*100.0*	7	*100.0*	5	*100.0*	386	*100.0*
GLUES								
Directly into mouth	7	*2.1*	0	*0.0*	0	*0.0*	7	*2.1*
Sniffed from container	21	*6.4*	0	*0.0*	0	*0.0*	21	*6.4*
Sniffed from cloth or sleeve	3	*0.9*	0	*0.0*	0	*0.0*	3	*0.9*
Sniffed from plastic bag	149	*45.6*	0	*0.0*	0	*0.0*	149	*45.4*
Plastic bag over head	52	*15.9*	0	*0.0*	0	*0.0*	52	*15.9*
Mask or padding over face	7	*2.1*	0	*0.0*	0	*0.0*	7	*2.1*
Other	1	*0.3*	0	*0.0*	0	*0.0*	1	*0.3*
Not known	87	*26.6*	1	*100.0*	0	*0.0*	88	*26.8*
TOTAL for GLUES	327	*100.0*	1	*100.0*	0		328	*100.0*
OTHER *								
Directly into mouth	17	*3.9*	1	*6.7*	0	*0.0*	18	*3.9*
Sniffed from container	91	*20.8*	2	*13.3*	3	*25.0*	96	*20.6*
Sniffed from cloth or sleeve	102	*23.3*	2	*13.3*	0	*0.0*	104	*22.4*
Sniffed from plastic bag	38	*8.7*	0	*0.0*	0	*0.0*	38	*8.2*
Plastic bag over head	48	*11.0*	8	*53.3*	2	*16.7*	58	*12.5*
Mask or padding over face	22	*5.0*	2	*13.3*	6	*50.0*	30	*6.5*
Other	11	*2.5*	0	*0.0*	0	*0.0*	11	*2.4*
Not known	109	*24.9*	0	*0.0*	1	*8.3*	110	*23.7*
TOTAL for OTHER	438	*100.0*	15	*100.0*	12	*100.0*	465	*100.0*

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* "OTHER" includes fire extinguishers and substance not known

TABLE 13

Principal Mechanism of Death
All ages: Each year 1998-2007

MECHANISM		YEAR 98	99	00	01	02	03	04	05	06	07	TOTAL
DIRECT TOXIC EFFECTS	No.	55	51	40	48	44	43	32	30	38	44	425
	%	*68.8*	*68.0*	*60.6*	*76.2*	*67.7*	*79.6*	*68.1*	*65.2*	*74.5*	*75.9*	*70.2*
INHALATION of VOMIT	No.	7	8	6	10	9	6	5	3	1	2	57
	%	*8.8*	*10.7*	*9.1*	*15.9*	*13.8*	*11.1*	*10.6*	*6.5*	*2.0*	*3.4*	*9.4*
ASPHYXIA mainly plastic bag	No.	5	6	8	2	6	2	9	8	11	10	67
	%	*6.3*	*8.0*	*12.1*	*3.2*	*9.2*	*3.7*	*19.1*	*17.4*	*21.6*	*17.2*	*11.1*
TRAUMA	No.	8	6	9	3	3	1	1	4	1	1	37
	%	*10.0*	*8.0*	*13.6*	*4.8*	*4.6*	*1.9*	*2.1*	*8.7*	*2.0*	*1.7*	*6.1*
OTHER	No.	1	0	1	0	0	0	0	1	0	1	4
	%	*1.3*	*0.0*	*1.5*	*0.0*	*0.0*	*0.0*	*0.0*	*2.2*	*0.0*	*1.7*	*0.7*
NOT KNOWN	No.	4	4	2	0	3	2	0	0	0	0	15
	%	*5.0*	*5.3*	*3.0*	*0.0*	*4.6*	*3.7*	*0.0*	*0.0*	*0.0*	*0.0*	*2.5*
TOTAL	No.	80	75	66	63	65	54	47	46	51	58	605
	%	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

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FIGURE 13

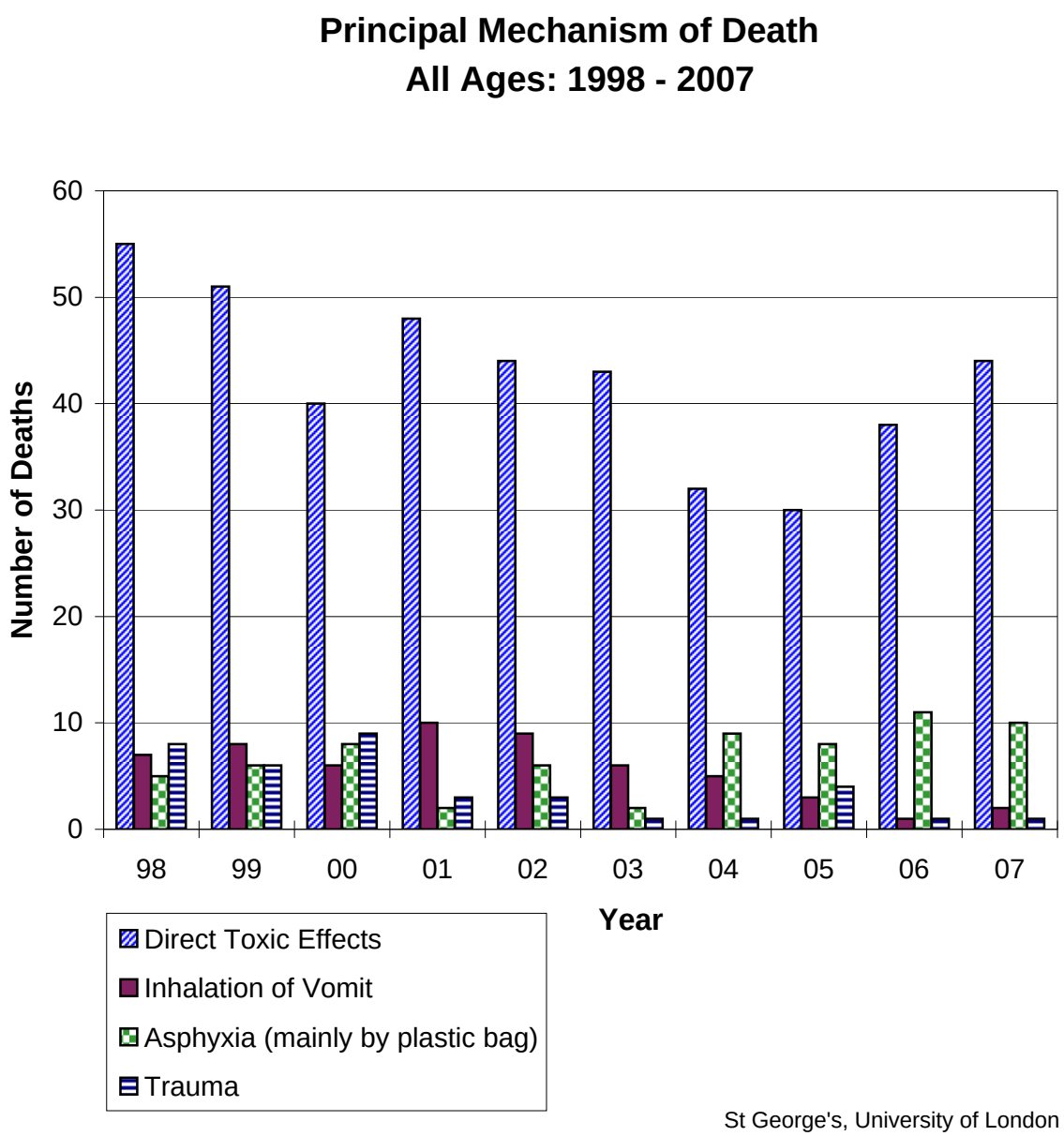
Principal Mechanism of Death
All Ages: 1998 - 2007
Number of Deaths
60
50
40
30
20
10
0
98
99
00
01
02
03
04
05
06
07
Year
Direct Toxic Effects
Inhalation of Vomit
Asphyxia (mainly by plastic bag)
Trauma
St George's, University of London

FIGURE 14

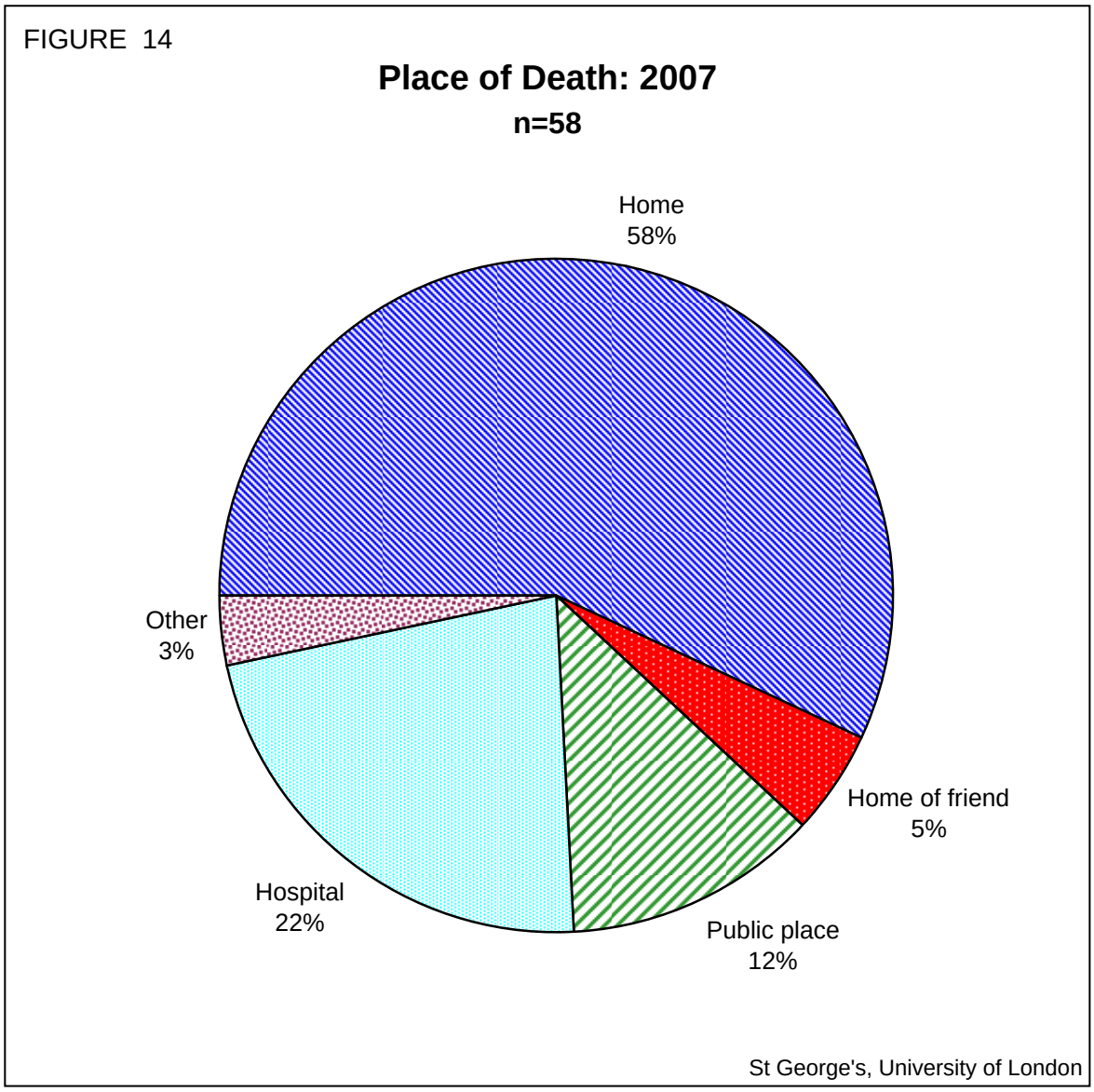
Place of Death: 2007
n=58
Home
58%
Other
3%
Hospital
22%
Public place
12%
Home of friend
5%
St George's, University of London

FIGURE 15

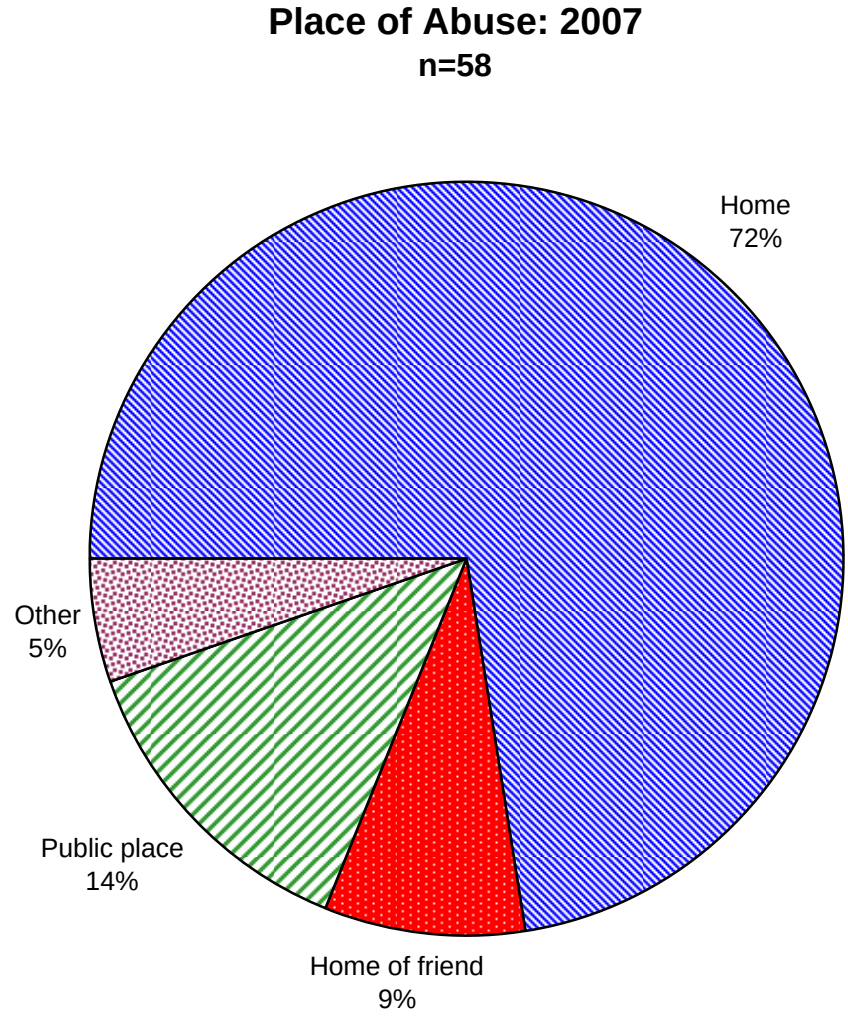
Place of Abuse: 2007
n=58
Home
72%
Other
5%
Public place
14%
Home of friend
9%
St George's, University of London

FIGURE 16

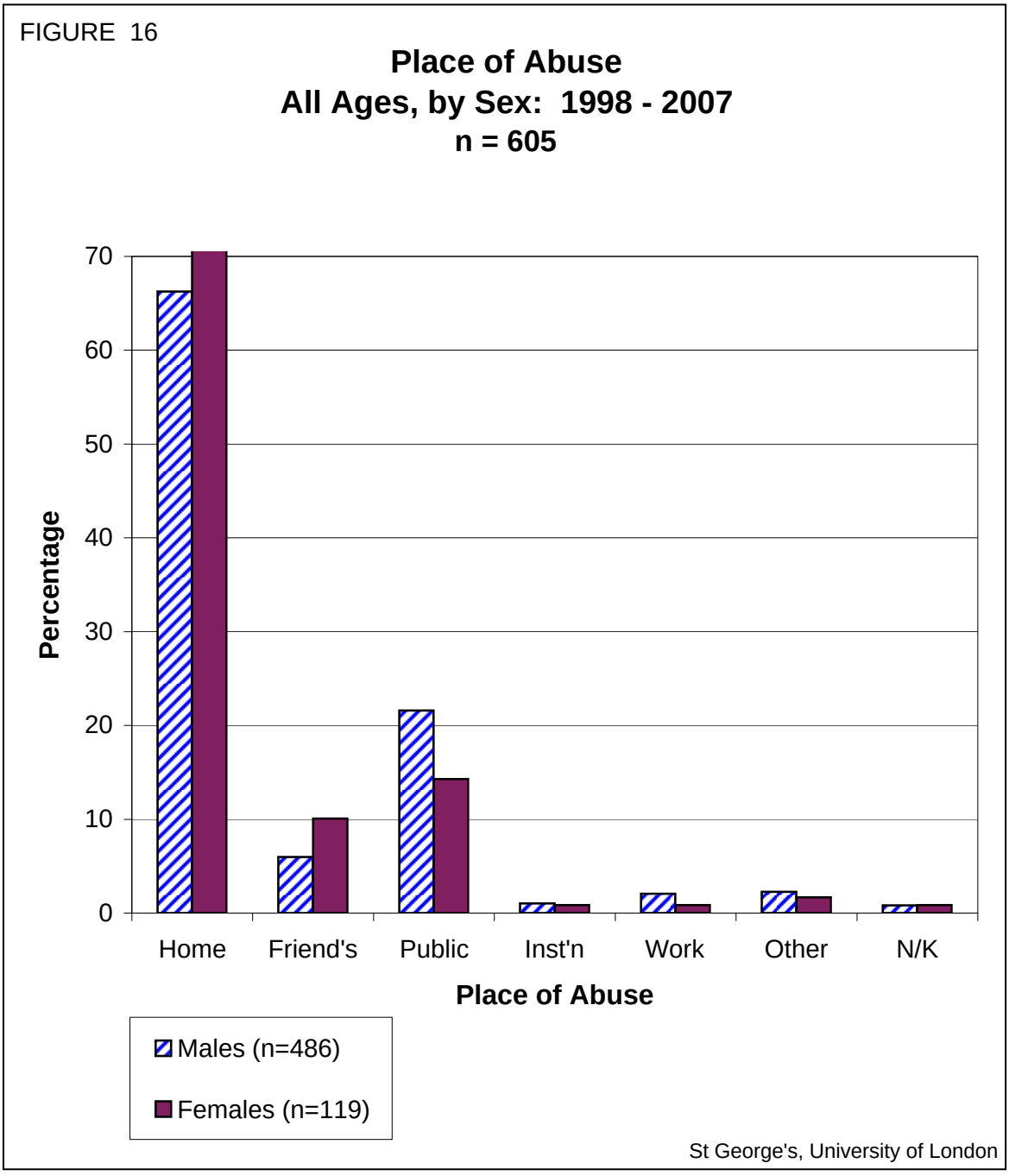
Place of Abuse
All Ages, by Sex: 1998 - 2007
n = 605
Percentage
70
60
50
40
30
20
10
0
Home
Friend's
Public
Inst'n
Work
Other
N/K
Place of Abuse
Males (n=486)
Females (n=119)
St George's, University of London

FIGURE 17

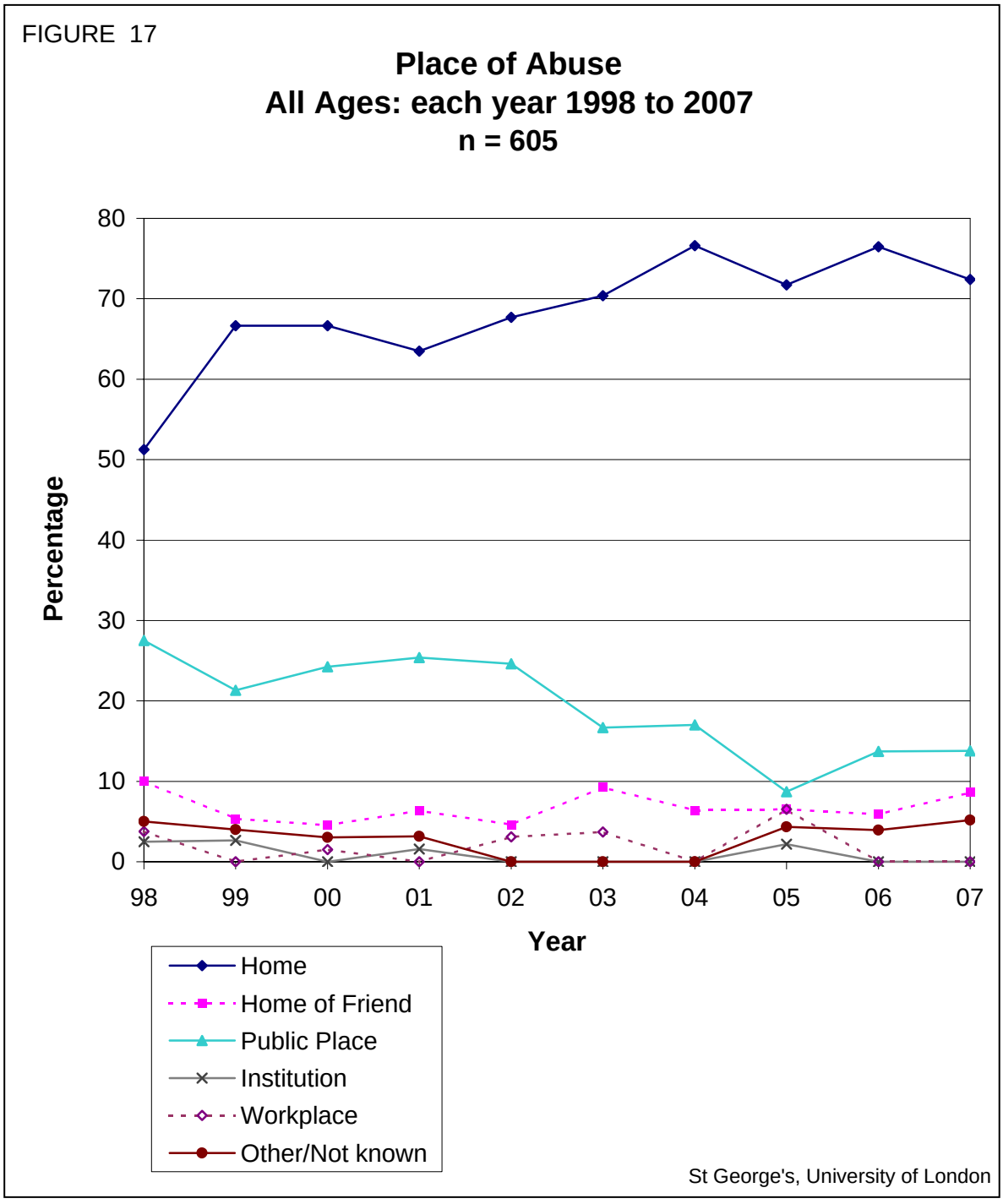
Place of Abuse
All Ages: each year 1998 to 2007
n = 605
Percentage
80
70
60
50
40
30
20
10
0
98
99
00
01
02
03
04
05
06
07
Year
Home
Home of Friend
Public Place
Institution
Workplace
Other/Not known
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TABLE 14

Place of Abuse by Age-groups
1998 - 2007

AGE GROUP		Home	Home of Friend	Public Place	Institution/ Workplace	Other/ Not Known	Total No	Total %
Under 10	No.	1	0	1	0	0	2	*0.3*
	%	*50.0*	*0.0*	*50.0*	*0.0*	*0.0*		
10 - 14	No.	18	3	21	0	1	43	*7.1*
	%	*41.9*	*7.0*	*48.8*	*0.0*	*2.3*		
15 - 19	No.	95	20	51	9	5	180	*29.8*
	%	*52.8*	*11.1*	*28.3*	*5.0*	*2.8*		
20 - 24	No.	66	8	12	1	3	90	*14.9*
	%	*73.3*	*8.9*	*13.3*	*1.1*	*3.3*		
25 - 44	No.	176	9	34	4	7	230	*38.0*
	%	*76.5*	*3.9*	*14.8*	*1.7*	*3.0*		
45 +	No.	51	1	3	3	2	60	*9.9*
	%	*85.0*	*1.7*	*5.0*	*5.0*	*3.3*		
TOTAL	No.	407	41	122	17	18	605	*100.0*
	%	*67.3*	*6.8*	*20.2*	*2.8*	*3.0*		
Under 18	No	76	17	61	5	3	162	*26.8*
	%	*46.9*	*10.5*	*37.7*	*3.1*	*1.9*		
18 and over	No	331	24	61	12	15	443	*73.2*
	%	*74.7*	*5.4*	*13.8*	*2.7*	*3.4*		

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TABLE 15

Number of Suicides Associated with a Volatile Substance 1983 - 2007

YEAR	Male	Female	Total	% of VSA Deaths	Median age at death
1983	5	0	5	6.1	18
1984	3	0	3	3.5	40
1985	3	0	3	2.6	18
1986	7	1	8	7.8	20
1987	2	0	2	1.7	18
1988	1	0	1	0.7	55
1989	3	0	3	2.7	37
1990	1	0	1	0.7	23
1991	5	0	5	4.1	20
1992	5	1	6	7.1	23
1993	4	0	4	5.1	27
1994	1	0	1	1.5	27
1995	7	0	7	9.1	28
1996	4	2	6	7.7	35
1997	5	1	6	7.7	30
1998	3	0	3	3.8	34
1999	6	0	6	8.0	56
2000	3	0	3	4.5	38
2001	4	0	4	6.3	42
2002	4	2	6	9.2	48
2003	3	1	4	7.4	45
2004	3	0	3	6.4	53
2005	6	3	9	19.6	36
2006	8	2	10	19.6	42
2007	9	0	9	15.5	46
Total Suicides	105	13	118	5.6	34

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FIGURE 18 **Age and Sex Distribution of Suicides 1983 - 2007 n = 118**