



## Statistical Expert Group - Key Findings

This summary of findings by the Statistical Expert Group on Infected Blood Inquiry has been prepared by the Inquiry Communications Team to assist journalists in their coverage of the Inquiry - though definitive statements should be based on the original reports.

The Expert Group has produced two reports for the Inquiry:

1. [Statistics Expert Group Report](#): giving the group's findings from their investigations into the number of infections from blood and blood products in the UK between 1970 and 1991, and the subsequent survival rate of those infected.
2. [Statistics Expert Group \(supplementary\) Report](#): a supplementary report from the Statistics Expert Group, answering additional questions raised during oral evidence, including about mortality directly attributable to blood-borne infections.

Blood transfusions were given for a variety of reasons, including during childbirth, following an accident, during surgery or connected with another medical procedure or condition. People with haemophilia were treated with British and American blood products.

The figures in the reports do not include people who were indirectly infected, i.e. through transmission from a person who was infected by blood or blood products; or affected, i.e. as parent, sibling, partner or child of a person who was infected by blood or blood products.

There is considerable uncertainty about the conclusions, which is expressed in a variety of forms. Numbers are rounded, and usually qualified an uncertainty interval representing a plausible range of values - this comes from formal statistical analysis, with the uncertainty reducing as the sample size increases, but necessarily based also on a number of assumptions about the reliability of the data. In addition, a judgement of 'Confidence' summarises the overall extent that the available data can answer the question of interest, on a scale Low; Low/Moderate; Moderate/High; High.

The Inquiry's independent experts estimated the numbers involved as follows.

## Total Infected 1970-2019

These figures are drawn from the [Statistics Expert Group's original Report](#).

<b>Infection</b>	<b>Total</b> (estimate with 95% uncertainty level where applicable)	<b>Confidence</b>
<b>HIV</b> - in people with bleeding disorders	around 1,250	Moderate/High
<b>HIV</b> - in transfusion recipients	80 to 100	Moderate
<b>Hepatitis C</b> - in people with bleeding disorders	3,650 - 6,250 ( <i>including 1,250 co-infected with HIV and HCV</i> )	Low/ Moderate
<b>Hepatitis C</b> - in transfusion recipients  Of whom, chronically infected ( <i>were they to have survived to 6 months post-transfusion</i> )  Of whom, chronically infected who survived to 10 years after transfusion  Of whom, chronically infected, and survived to the end of 2019	26,800 (21,300 - 38,800)  22,000 (17,300 - 31,900)  8,120 (6,330 - 11,900)  2,700 (2,050 - 3,910)	Moderate
<b>Variant Creutzfeldt-Jakob disease (vCJD) infections</b> - from blood and blood products	5	High

The figures for chronic Hepatitis C in transfusion recipients are based on a detailed statistical model of the stages from HCV-infectious donors to recipients becoming chronically HCV-infected following transfusion, and then survival until the end of 2019, taking into account the increased mortality risks associated with transfusion and with chronic HCV-infection. The experts note that the most likely value is near the central estimate, and that it is very unlikely that the true value is as high as the upper end of the interval, or as low as the lower end.

Females accounted for 64% (95% uncertainty interval: 58% to 69%) of the people chronically infected with HCV by transfusion who survived to the end of 2019.

The following table shows the estimated number of chronic HCV infections in the four nations (1970-1991). These figures are drawn from the [Statistics Expert Group's Report](#).

Nation	HCV infections in transfusion recipients (estimate with 95% uncertainty interval)
England	22,000 (17,500 - 32,300)
Scotland	2,740 ( 2,250 - 3,440)
Wales	1,320 (1,030 - 1,960)
Northern Ireland	730 ( 570 - 1,080)

It is not possible to estimate the numbers of **Hepatitis B Virus (HBV)** infections with reasonable accuracy.

## Deaths during 1970-2019 attributable to infected blood or blood products

These figures are drawn from the [Statistics Expert Group's Supplementary Report](#).

The estimates and intervals were based on analyses specified in the SEG Report, together with some further analysis, but necessarily included a substantial element of expert judgement concerning the impact of acknowledged limitations in the available data. The estimates can therefore be considered as consensus judgements of the experts.

A range of modelling options was considered, and the experts scored these according to the plausibility of their underlying assumptions. The final results were based on combining the different options proportionally to the aggregate score given by the experts to each. These estimates are shown below, together with the estimates from the first SEG report.

The experts therefore conclude that around **2,900 deaths** during 1970-2019 are attributable to infections from blood or blood products in the UK, although there is considerable uncertainty about this estimate. There are some changes from the estimates in the original SEG report, but these are not major given the inherent uncertainties.

<b>Deaths during 1970-2019 attributable to infected blood or blood products</b>			
<b>Group</b>	<b>Estimates</b>	<b>95% uncertainty interval</b>	<b>(Original Report)</b>
<b>HCV infections</b> - in transfusion recipients	1,640	550 to 3,440	1,820 (95% uncertainty 650-3,320)
<b>HIV infections</b> - in people with bleeding disorders	820	730 to 910	625 (around half of those infected)
<b>HCV infections</b> - in people with bleeding disorders	350	255 to 590	no estimate (UKHCDO 248)
<b>HIV infections</b> - in transfusion recipients	35	30 to 40	no estimate (85% died of those infected, cause unknown)
<b>Diagnosed vCJD or carriage of abnormal prion protein</b> - in recipients of vCJD-implicated blood transfusion or blood products	5	3 to 8	3
<b>Total</b>	<b>2,900</b>	<b>1,750 to 4,650</b>	

Definitions:

Uncertainty intervals arise when building complex models based on a set of assumptions, some involving judgement. Uncertainty about the inputs is propagated, using simulation methods, through the model to produce a range (usually 95%) of plausible values for the outputs.

## People who may be undiagnosed

These figures are drawn from the [Statistics Expert Group's Supplementary Report](#).

The Statistics Expert Group compared the age-sex bands for EBISS claimants in England against their statistical estimates for the number of people infected with Hepatitis C through transfusions and identified three groups who appear to be underrepresented:

- people born 1975-1984 who had a transfusion as a child (at best a quarter of the number estimated feature as claimants)
- people born 1965-1974 who had a transfusion (only a third of the number estimated feature as a claimant)
- women born 1945-1964 who had a transfusion around childbirth (just over half the number estimated feature as claimants)