

Information Papers

**MSBT 22/(1)
MSBT 22/(2)**

TRANSFUSION TRANSMISSION OF HCV INFECTION PRIOR TO ANTI-HCV TESTING OF BLOOD DONATIONS IN ENGLAND: RESULTS OF THE NATIONAL HCV LOOKBACK PROGRAMME

The summary of the paper is Information paper MSBT 22/(1) and the full version is MSBT 22/(2).

Would members please note that these papers have been submitted to BMJ and Transfusion respectively, but not yet accepted.

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MSBT 22/(1) – Information paper

The contribution of transfusion to HCV infection in England

The English National Blood Service HCV Lookback Collation Collaborators*

The contribution of transfusion to the burden of HCV infection in England

The HCV lookback programme in England has attempted to trace patients transfused prior to September 1991 with blood from donors who were found to be positive for hepatitis C antibodies (anti-HCV) after routine testing for anti-HCV was introduced in September 1991. The aim of this "lookback" was to diagnose patients with transfusion transmitted HCV who might benefit from care and treatment. We have used lookback data to estimate the total contribution of transfusion to HCV infection in England.

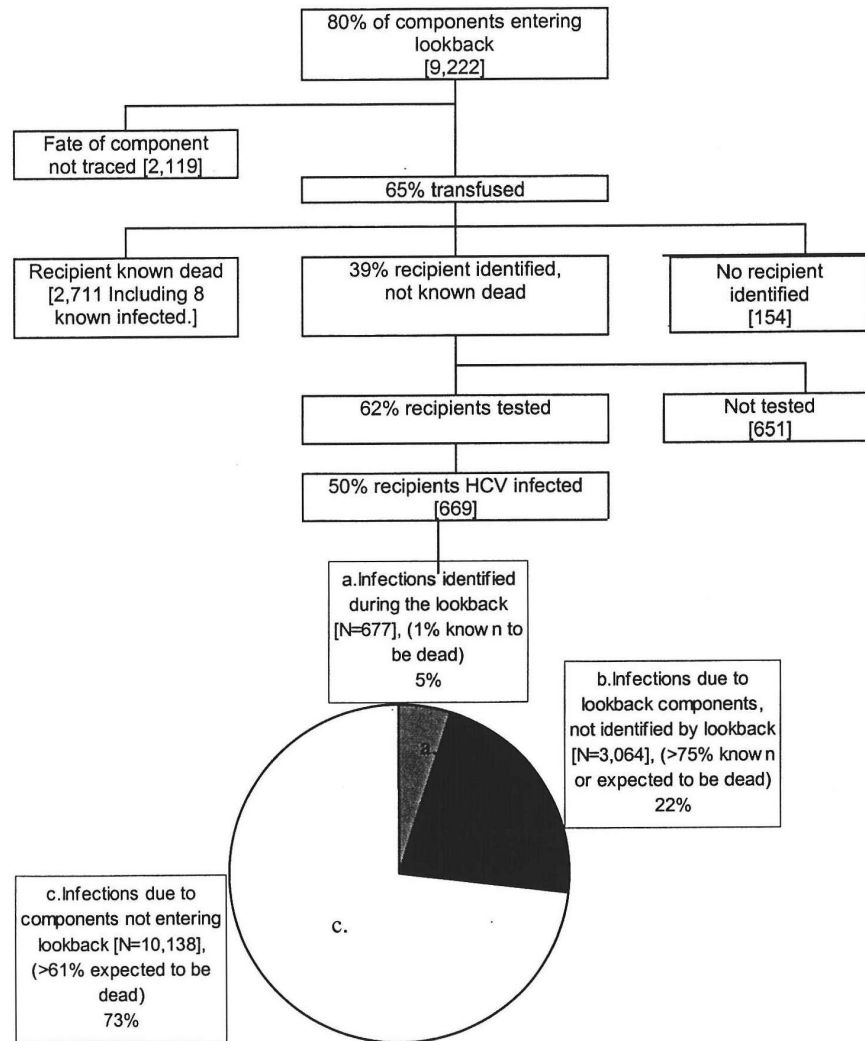
Methods and results

Information about all stages of the lookback process was collected for 80% of components entering the lookback from eight blood centres. Information about HCV tested recipients was collected from all centres¹. The outcomes of the lookback process, ending in the number of HCV infections diagnosed, are shown in the Figure.

The number of HCV infections transmitted by lookback components but not identified by the lookback was estimated by extrapolating from the 80% of components tracked and by assuming that the observed proportions of components transfused, recipients alive, and recipients found to be infected also applied to the components for which the lookback process did not lead to recipient testing. The resulting estimate was 3,064 HCV infections, of which 1,700 (55%) are known and 585 (19%) are expected to have died.

The number of HCV infections transmitted during the 1980s by components from donors who were not subsequently tested for anti-HCV (and therefore not entered into lookback) was estimated by assuming that the prevalence of anti-HCV observed during the first four months of donor testing (0.066%) existed throughout the 1980's. (Components entering lookback were estimated to account for 32% of the estimated total number of components from infected donors.) We worked on the assumption that the number of components transfused per donation, the proportions of recipients alive and found to be infected in the lookback also applied to components that did not enter lookback. The resulting estimate was an additional 10,138 HCV infections of which 6,212 (61%) are expected to have died (Figure).

Figure: Outcomes of HCV lookback in England.



**Estimated total transfusion transmitted HCV infections
England 01/01/1980-01/09/1991
[N=13,879; <5,373 alive in 1995]**

$$b. = (((((2,119 \times 1.25) \times 0.65) + (154 \times 1.25)) \times 0.39) + (651 \times 1.25)) \times 0.53 = \text{living} + (2,711 \times 1.25) + (((2,119 \times 1.25) \times 0.65) \times 0.61) + ((154 \times 1.25) \times 0.61)) \times 0.50 = \text{dead}$$

$$c. [((((25,864,035 \times 0.00066) \times (\text{components transfused/components entering lookback})) \times (1-0.32)) \times 0.50)]$$

Comment

We find that the HCV lookback has identified 5% (677) of the estimated number of HCV infections transmitted by transfusion since 01/01/1980, which probably represents 12% of infected recipients who survived to 1995. It has been estimated that there are between 200,000 and 400,000 infected individuals living in the UK²: if so, transfusion appears to account for under 3%.

Transfusion was reported as the source for 128 (4.3%) laboratory reports of HCV infection in England and Wales (1992-1996)³.

Of the infections identified by the lookback, 10% had already been diagnosed. The proportion of infections not identified by the lookback that have already been diagnosed may be lower if individuals not identified by the lookback are less likely to be in contact with health services, or higher if individuals not tested during the lookback were more likely to be known anti-HCV positives.

Other analyses of data from the lookback¹ imply that estimates of the proportions of unidentified infections that have died based on frequency of "known dead" recipients will be conservative, and our estimate of living transfusion transmitted infections (in 1995) is therefore a maximum estimate. Also, there will be some (approximately 1%) multiply transfused recipients who received more than one of these "infections".

We may have underestimated or overestimated the infections transmitted in the 1980s by using the prevalence of infection at the start of testing without accounting for selective removal of infected donors during the 1980s, or accumulation of prevalence over time. This uncertainty, and others, prohibit including earlier years. If recipients infected during the 1970s and 1960s were similar to the identified lookback recipients (transfused during 1980s), their average age at the start of 1995 would be 74 and 84 years respectively.

Only 2 transfusion transmitted HCV infections have been reported from anti-HCV tested components during the past five years⁴ (up to end 1999), and the risk of infection by transfusion is being reduced further by nucleic acid testing. Transfusion transmission of HCV in UK is therefore largely a thing of the past, although the extent of continuing secondary transmission has not been established, and investigation of the burden of disease amongst infected recipients is ongoing⁵.

word count = 680 (author guidelines state 600 max)

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* The English National Blood Service HCV Lookback Collation Collaborators: Dr N Anderson (NBS - Bristol), Dr C Chapman (NBS - Newcastle), Dr A Dike (NBS - Oxford), Dr G Gabra (NBS - Birmingham), Dr A Herborn (NBS - Southampton), Dr P Hewitt (NBS - North London), Dr C Llewelyn and Dr E Caffrey (NBS - East Anglia), Dr A Gorman (NBS - Brentwood), Dr N Hewson and Dr B Jones (NBS - Trent), Dr E Love (NBS - Manchester), Dr V Martlew (NBS - Mersey and North Wales), Dr A Townley (NBS - Leeds), Dr A Robinson (NBA), Ms K Soldan (NBA & Public Health Laboratory Service Communicable Disease Surveillance Centre), Dr H Harris (PHLS CDSC), Dr M Ramsay (PHLS CDSC).

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