

Background

TTI due to viruses or parasites are very rare, and other sources of infection should be explored. A newly identified viral infection in a blood transfusion recipient with no other apparent risk may indicate a transfusion-transmission. Careful review of the markers and timing can rule out a TTI before a report is made to the UK Blood Services. The year of transfusion may be many years before the year in which the incident is investigated and/ or reported to SHOT due to the chronic nature, and possible late recognition of some viral infections.

A TTI investigation will only commence once the infection status of the recipient has been clarified. Note:

- HCV - Investigation of possible HCV TTI in individuals who are HCV polymerase chain reaction (PCR) negative but HCV antibody reactive, will not commence unless HCV antibody reactivity has been confirmed using two different assays, because of the possibility of non-specific antibody reactivity.
- CMV - Cytomegalovirus (CMV) seroconversion should be demonstrated by checking against pre-transfusion results, if available.
- Immunoglobulin therapy can lead to passive transfer of antibodies which may be confused with infection.

The risk of transfusion-transmitted HBV, HCV or HIV is extremely low in the UK ([JPAC Position Statement on Residual Risk - September 2024.pdf](#)).

- Lookback investigations are triggered by markers of infection newly identified in returning donors either;
 - Following the introduction of new test that detects a previously undetected infection (e.g. Hepatitis B anti-core screening, HAV and B19).
 - Post-donation information supplied by a donor, e.g. diagnosed with hepatitis.
 - Seroconversion of a returning donor detected on routine screening.
- Lookback investigations are initiated by the Blood Services and involve reviewing donor history, re-testing archive samples of previous donations where available, tracing components, and identifying and testing recipients.
- Investigations may be extended to all previous donations, depending on the implicated virus.
- Archive samples of donations kept by hospitals and the Blood Service help verify infection status, timing and source. In the blood services these are kept for a minimum of three years; therefore, investigations need to be reported as soon as possible although lookback will still commence without archive samples. There may be many donors to investigate, and the retrospective nature of this process may take time to conclude.
- Recipients identified are offered information, asked for consent for testing and followed up depending on the outcome of testing, usually via their medical practitioner.

Actions for a suspected non-bacterial TTI

- Seek advice from the local Blood Centre about how to report an incident, as soon as possible to ensure a thorough investigation.
- Consult the local microbiologist/virologist for advice and ensure to include clinical details of the patient and transfusion.
- Explore all possible risk exposures, to determine the patient's most likely source of infection. HEV is commonly transmitted by food for example. Further information and/or test results may be requested.
- Check records and test samples taken prior to the implicated transfusion(s) to check that the recipient was not infected prior to transfusion. Review subsequent donations to exclude the donor as a source of infection. Recall all other donors for specific testing for the marker in question.
- Genome amplification and possible genotyping may be used to match source and recipient in archive samples, where available.
- Negative test results from antibody assays in subsequent donations will usually be sufficient to eliminate the donors as a source of infection. In other cases, including HBV, additional tests and follow up samples may be needed from the donor.

Additional Reporting

- Ensure the incident is reported to SHOT ([Incident reporting - Serious Hazards of Transfusion](#)).
- Hospitals report to the MHRA and the local hospital Infection Prevention and Control team so that other possible sources of infection in the hospital can be investigated.
- Additional investigation may involve the local public health team or specialist public health laboratories.
- Clinical staff requesting an investigation into a possible TTI by the UK Blood Services should report as soon as practical to Serious Adverse Blood Reactions and Events (SABRE), this does not replace your local reporting arrangements.
- Update the report once the outcome of the UK Blood Services investigation is known.
- Cases of suspected transmission of infection should be reported even if not currently screened for by the Blood Services.

Procedures to report possible bacterial contamination may differ between UK Blood Services

- **England** - [Non bacterial infection - Hospitals and Science - NHSBT](#)
- **Northern Ireland** - contact medicalsupport@nibts.hscni.net, or NIBTS Bacteriology Laboratory on 0289 032 1414 extension 4606
- **Scotland** - [Adverse transfusion reactions | National Services Scotland](#)
- **Wales** - [Guideline on the Investigation and Management of ATR](#)