

## Background

- Transfusion-transmitted bacterial infections are rare; the last confirmed transmission from a platelet transfusion was reported in 2015, and the last confirmed transmission from a red cell unit was in 2009.
- A reaction in a recipient during a platelet transfusion may be due to bacteria in the platelet pack since platelets are stored at room temperature, increasing the chance of bacterial growth.
- Platelet components are screened for bacteria and issued as 'negative to date' however it is possible that some bacteria may not have multiplied sufficiently to trigger detection on screening prior to issue. If detection occurs during the platelet shelf life a recall will be issued. It has been noted that *Staphylococcus aureus* may be more difficult to detect which possibly due to biofilm formation.
- Bacterial transmissions may also occur via red cells, which are not screened for bacteria.
- Regular visual inspection of packs is crucial to minimise risk of bacterial TTI as it can alert staff to signs of bacterial growth, see images below with visually obvious growth.



- An apheresis donation is made by a single donor and may be split into several platelet packs.
- A pooled platelet pack is currently made from the whole blood donations from four donors whose donations are also used to make red cell packs.
- Associated packs may be produced from the same donation which have been issued to different hospitals; who will be unaware of the potential problem, and clumps may not appear in the associated pack.
- Visually abnormal packs should be reported to the relevant blood service as soon as possible to enable recall of associated packs.

## Actions for hospital staff for a suspected bacterial TTI

- Patients with confirmed bacterial TTI generally become unwell very rapidly, often during transfusion. The current British Society for Haematology's guidance recommends hospitals advise patients to report any symptoms that occur within 24 hours of transfusion (Soutar, et al., 2023).
- Investigate any suspected bacterial TTI and report promptly to the blood service to ensure that other components can be recalled preventing further harm.
- Take blood cultures from the recipient as soon as possible and contact Hospitals Services for the duty consultant details to advise the blood culture results if known and details of event.

- Retain suspected contaminated packs, even if near empty, for possible return to the Blood Service as the residue can be cultured for investigating.
- If sampling packs locally for bacterial testing, use ports rather than breaching the pack to minimise environmental contamination of the pack.
- Return implicated packs(s) with giving set still attached to Hospital Services as soon as possible after the event.
- Seek advice from the local Blood Centre about how to report an incident.

## Additional Reporting

- Hospital staff requesting an investigation into a possible TTI should report as soon as practical to Serious Adverse Blood Reactions and Events (SABRE), this does not replace your local reporting arrangements.
- Report to SHOT ([Incident reporting - Serious Hazards of Transfusion](#)) and the MHRA as an Acute Transfusion Reaction (ATR) if necessary, even if a TTI is excluded.
- Update the report once the outcome of the UK Blood Services investigation is known.
- Advice on clinical management and investigation of serious adverse reactions can be obtained from the hospital consultant responsible for blood transfusion and the British Committee for Standards in Haematology (BCSH) guideline on investigation and management of acute transfusion reactions (Soutar, et al., 2023).

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

- **England** - [Bacterial contamination - Hospitals and Science - NHSBT](#)
- **Northern Ireland** – contact [medicalsupport@nibts.hscni.net](mailto: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](#)

Soutar, R. et al., 2023. Guidelines on the investigation and management of acute transfusion reactions. British Journal of Haematology, 201(5), pp. 832-844. doi: <https://doi.org/10.1111/bjh.18789>