Guidelines for the Blood Transfusion Services

9.8: Investigation of suspected bacterial contamination of blood components

http://www.transfusionguidelines.org/red-book/chapter-9-microbiology-tests-for-donors-and-donations-general-specifications-for-laboratory-test-procedures/9-8-investigation-of-suspected-bacterial-contamination-of-blood-components

9.8: Investigation of suspected bacterial contamination of blood components

Suspected cases of bacterial contamination of blood components may be notified by reports from the hospital of a significant transfusion reaction or, following a severe reaction, the identification of bacteria either within the pack or in a patient's blood culture.

A record of the original notification, clinical details and investigations carried out by the hospital must be made by the Blood Centre. The pack remains must be sealed and transported as soon as possible to a specialist bacteriology laboratory along with any bacterial isolates subsequently recovered from the patient' s blood. If the patient has died without blood samples being obtained after the transfusion, it may be necessary for a post-mortem blood sample to be collected.

The contents of the pack, or if empty, a 20 mL sterile wash out of the pack, must be sampled in the laboratory taking care to minimise the introduction of contaminants. A Gram stain may be informative, but the sample must be cultured for bacteria (aerobic and anaerobic) and fungi using a system permissive for the growth of these microorganisms. If cultures prove negative, no further action/investigation is necessary.

Where bacterial contamination is indicated, action must be taken to safeguard the safety of the blood supply by recalling all other components from the same donation(s) and these must be subjected to bacterial investigation. The possible source of contamination needs to be investigated in consultation with a specialist microbiologist and appropriate swabs and other samples from the donor obtained for culture. If isolates of the same species are obtained from the pack and donor these must be submitted for molecular typing to establish the strain identity and possible route of transmission. Further decisions about the use of subsequent donations from the donor will depend on the circumstances and the type of contamination. An assessment must be carried out on a case-by-case basis to determine the risk of bacterial contamination through the use of further blood donations from the donor, and appropriate action taken.