Background:

It is a HTA requirement for hospitals to return an adverse event form to the cell processing laboratory to document any infusion adverse events or reactions that take place (or lack thereof) during all cellular therapy transplants.

The form 'HPC and T cell products Infusion Adverse Incident Report' is sent with every transplant and is to be returned via e mail within 24 hours of infusion.
There is space on the form to record any adverse reactions that occurred, and also class them as 'mild', 'moderate' or 'severe'.

In addition to reporting severe reactions to the HTA, this information helps NHSBT ensure the quality of the product it provides and also assists in the investigation of any further complications, such as delayed or failed engraftments.

However, mild infusion reactions are common and not unexpected, due to the antigens infused into the recipient (in allogeneic transplantation) and the effects of the cryoprotectant (DMSO).

Purpose:

This document gives examples of 'mild', 'moderate, and 'severe' reaction classifications and also recommends how NHSBT manages the reporting regarding infusion side-effects.
For all reported moderate and severe events/reactions, NHSBT uses FRM7091- Patient Adverse Event Investigation Form to evaluate possible causes and whether further investigation is required.
Upon further investigation, more patient information may be required from the hospital to ascertain the root cause of the reaction.

Please also include any practical issues that occur on the form, such as:

- Problem with line access which causes delay in product infusion.
- Incomplete product infusion – can be due to various reasons including blocked giving set, line access issues.
- Secondary bag has a hole but product bag inside is fine.
- Product bag compromised.
- Problem during thawing – water bath problem, clumping of product.
- Product thawed but infusion not completed within 15 minutes.
- Dryshipper logger error or not working.

If there is any delay in patient engraftment, then these issues can be taken into account.

Please contact your local CMT laboratory if you have any queries.

Classification of infusion reaction occurring within 24 hours	NHSBT Action
Mild infusion reaction: This can include any of the following examples: • Changes in the pulse rate that do not require specialist treatment and lasts for less than 4 hours. • Rigors. • Changes in blood pressure which requires no treatment or treatment with no more than fluid infusion (low BP) or oral medication (high BP). • Drop in oxygen saturation that may or may not require simple oxygen therapy and lasts for no more than 2 hours. • Rise in the temperature up to 2ºC which do not require antibiotic treatment and subsides within 4 hours. Any of the above must not stop completion of the infusion.	Mild reactions are logged in our LIMS system, Hematos. These are reviewed monthly at Senior Management Team meetings.
Moderate infusion reaction: This includes any reaction that does not fit with the mild or severe reaction. • Allergic reaction (urticaria or skin rash) which subsides within 8 hours with or without treatment (antihistamine +/- steroid). • Nausea and vomiting lasting for less than 6 hours with or without treatment.	Moderate reactions are logged in our LIMS system, Hematos. An incident report is raised in the QMS, categorised as 'other'.
Severe infusion reaction: These include the following examples: • Any reaction that necessitates stopping the infusion and hence wasting of some of the graft component. • Any allergic reaction that requires the use of adrenaline or inotropic medication (severe angioedema). • Reactions that require transfer to intensive care. • Reactions that require radiological intervention such as x-rays or scans. • Reactions that require a second opinion from a different speciality (neurology, anaesthesia etc). • A reaction that causes significant organ damage, such as acute kidney injury, major rise in liver enzymes, features of encephalitis, lung symptoms such as TRALI, coagulopathy. • Significant haemolysis demonstrated by need for transfusion, drop in haemoglobin by more than 30g. • Any delayed transfusion reaction. • Suspicion of infection which requires blood cultures (viral and parasitic infection also require robust reporting but these are usually detected at a later stage and not usually reported during infusion). • Patient death.	Severe reactions are logged in our LIMS system Hematos An incident report is raised in the QMS, categorised as 'Major' Severe reactions are reported to the HTA.