Worked example of SHOT UPTAKE model of competency assessment

The below competency worksheet was adapted from an example kindly provided by Liverpool Clinical Laboratories. This has been tailored to give a working example in line with the UPTAKE model of competency assessment first shown in the 2019 Annual SHOT Report and accessible here. The model was created as SHOT reports showed evidence of gaps in knowledge, incomplete training and insufficient competency assessments. Competency assessments should facilitate 2-way discussions that provide an opportunity to learn and seek input from staff being trained.

This example is an illustration to show how the model can be applied within assessments and should not be used as a recommended competency template. Please use this worked example as a resource to review your local competency assessments and ensure all areas of the UPTAKE model are incorporated. Each element of the UPTAKE model is shown in figure 1, and is colour coded with the relevant elements in the worked example.

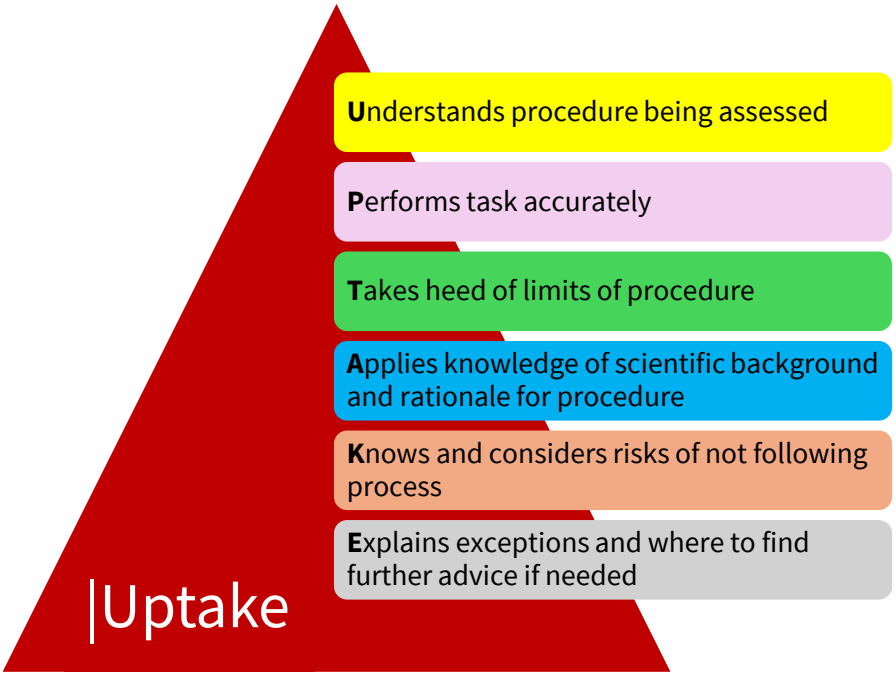
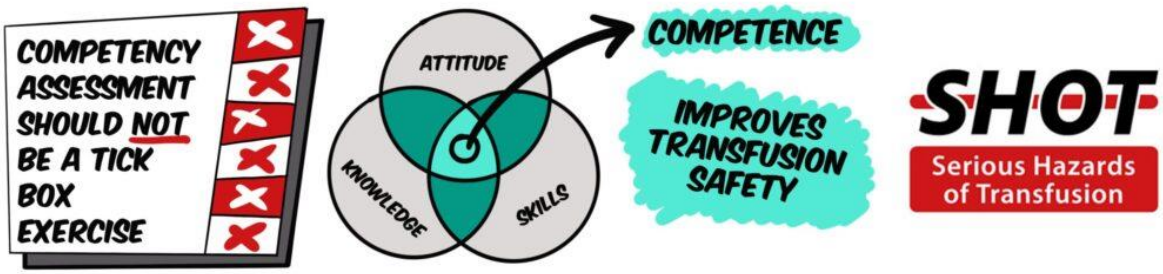


Figure 1: UPTAKE Competency Assessment - Serious Hazards of Transfusion



The SHOT team would like to acknowledge the team at Liverpool Clinical Laboratories for sharing an example and helping draft this document.

Key: **U**nderstands procedure, **P**erforms task accurately, **T**akes heed of limits of procedure, **A**pplies knowledge of scientific background and rationale, **K**nows and considers risks of not following process, **E**xplains exceptions and where to find further advice if needed

Direct Antiglobulin Test (DAT)

The Direct Antiglobulin Test (DAT) is performed to demonstrate *in vivo* sensitisation of a patient's red cells, with immunoglobulins and/or complement. A DAT is used to determine if haemolysis of an immune or non-immune aetiology.

Question 1: What is the principle of the Direct Antiglobulin Test?

Question 2: What are the limitations of the test?

Exercise: Using the table below state the interpretation of results and any further actions you would take for the result of the manual DAT.

Saline Column	IgG Column	Interpretation	Further action
–	+		
–	–		
+	–		
+	+		

Question 3: List the potential causes of a positive DAT.

Question 4: What is the significance of a positive DAT in respect to red blood cell transfusion? How would a positive DAT impact the issue of blood?

Question 5: What would the impact on the patient be if a DAT was not performed accurately?

Question 6: A mixed field result is seen in your DAT well and the patient requires urgent transfusion, where would you find further advice on this and what are the routes to escalate to make blood available urgently?

Exercise: The type of haemolysis can be determined by the identify the mono-specificity of DAT. In the table below state the most likely causes of haemolysis from the immunoglobulin or complement stated.

Type of Haemolysis	Immunoglobulin/ Complement Red Blood cells are coated
	Cells coated with IgG (or IgG and C3d). Majority of cases primarily IgG, optimally binds at 37°C
	Cells coated with C3d (or IgM only or IgM + Complement) optimally binds at 4°C
	IgG +/- C3d

Question 7: Does a negative DAT mean that red cells have not antibody coating them?

Please now agree a time and date with your training officer for your practical assessment.

	Pass/Fail	Date	Re- Assessment Pass/Fail/N/A	Date	Date of further training	Repeat assessment Pass/Fail/ N/A	Date
Theory							
Practical							

Date signed as competent		**Assessed by**	
Date for next routine assessment			