

Proposal for a National Competency Framework for teaching TIVA/TCI

Adult TIVA/TCI Competency Framework

Trainee's Name:

Knowledge Required

Pharmacokinetics		How Assessed	Assessors Signature	Date completed
	Review the basic principles of 3 compartment models including concepts of rate constants and how their application allows effect-site targeting, and the principle of context sensitive half-time,	CbD		
	Explain the concept of drug synergy and show how this influences the administration of propofol in the presence of remifentanil.	CbD		
	Discuss the key principles of the Marsh, Schnider and Minto models including the variables used to calculate both the central compartment volume, and the rate constants of particular importance to each model.	CbD		
	Explain the differences between plasma and effect-site targeted models and why these differences require variations in the bolus doses of drug.	CbD		
Pharmacodynamics				
	Demonstrate an understanding of the pharmacodynamic effects of propofol and remifentanil and why these may vary with sex and age.	CbD		

Equipment		How Assessed	Assessors Signature	Date completed
	Demonstrate an understanding of the key components of an ideal TIVA giving set (anti-siphon valves, anti-reflux/one-way valves, dedicated one piece Siamese lines) and be able to discuss recommendations from the Safe Anaesthesia Liaison Group on this topic.	CbD		
	Discuss the NICE EEG guidance document and demonstrate an understanding of how a processed EEG device works, how to interpret the data provided, and limitations in interpretation of the information provided.	CbD		
	Discuss the action to be taken in the event of pump failure and/or loss of pump programming, including the risks and benefits of re-starting administration of TCIs in this circumstance.	CbD		
	Discuss the benefits and drawbacks of TIVA vs. vapour anaesthesia including a review of the outcomes from NAP5 in respect of TIVA.	CbD		
<i>Skills Required</i>				
Practical TIVA		How Assessed	Assessors Signature	Date Assessed
	Be able to prepare drugs for the administration of TIVA/TCI and demonstrate knowledge of why accurate drug concentrations are vital to safe practice.	A-CEX +/- DOPS		
	Be able to programme a pharmacokinetic pump for delivery of target-controlled infusions using both Schnider & Marsh adult propofol models, and the Minto remifentanil model, explaining why limitations to patient demographics may be imposed by the device software.	A-CEX +/- DOPS		
	Demonstrate safe and effective use of a processed EEG device, including application of transducer(s) and sensible interpretation of the data provided.	A-CEX		
	Demonstrate safe administration and monitoring of TIVA including intravenous access issues and planning of effective post-operative pain management.	A-CEX		

TIVA Cases		Assessors Signature	Observations (e.g. EEG device used, issues)	Date Completed
Apply the above principles for the safe delivery of TIVA over a range of surgical cases and with a variable level of supervision				
Surgical procedure, patient's age and sex				
Consultant Led Cases	1.			
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
	10.			

Surgical procedure, patient's age and sex		Assessors Signature	Observations (e.g. EEG device used, issues)	Date Completed
Trainee Led cases with close Consultant supervision	1.			
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
	10.			

Review of anaesthetic charts for 5 solo TIVA cases		Assessors Signature	Notes	Date Completed
Surgical procedure, patient's age and sex				
	1.			
	2.			
	3.			
	4.			
	5.			
Trainee's Name		Assessors Signature	Date Completed	
Trainee signed off as competent with adult TIVA/TCI practice:				

Completion Notes

1. As with existing college modules, one WBPA can cover multiple domains. It is expected that one CbD can cover the bulk of the pharmacology in this curriculum and one CbD for the equipment domains.
2. Practical TIVA should ideally be covered in at least two WBPAs
3. Logging of consultant led cases does not need to wait until completion of the core domains, but these should be completed before the trainee starts more independent practice
4. Documentation of the TIVA cases should include whether EEG monitoring devices were used, any issues during the case and level of supervision the trainee had during the case/requires for future cases.