

Updating and Evaluating Adherence to Standard Operating Procedures in the Retinoblastoma Examination Under Anaesthetic

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Introduction and Purpose

- Retinoblastoma affects children whose care depends on Examination Under Anesthesia (EUA) in order to fully evaluate the retina and treat multifocal tumors.
- Vulnerable patient population includes newborns.
- Disruptions within the operating room (OR) extend time under anaesthetic.
- Disruptions may be caused by:
 - technological malfunction
 - miscommunication
 - procedural errors
- To optimize retinoblastoma care, SickKids has created 27 different Standard Operating Procedures (SOP).

Methods

- We evaluated the EUA SOP before, after, and at 2-year follow-up audit.
- Two observers^{1,2} measured adherence to key steps within the EUA SOP using the checklist.
- EUA duration and disruptions were measured before and after SOP implementation (2019).
- EUA SOP was revised May 2021 with input from surgeons, fellows, and nurses on relevancy and efficiency of each step.
- An audit was conducted from June to July 2021 of 20 EUA procedures measuring adherence to checklist.
- e-Learning modules were updated to promote importance of SOP to new personnel.
- The EUA checklist was updated:
 - Out of date steps were removed
 - New protocols considering COVID-19 were added

Results

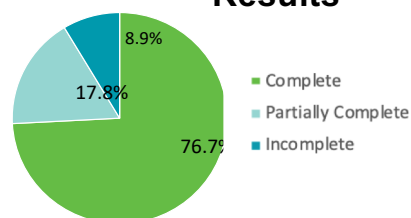


Fig. 1 EUA Checklist Completion Jan-July 2021

- Three major changes were made to the EUA checklist after consulting RB Team
- 2019:**
 - Adherence to major steps in the EUA **increased by 20%** (see Table 1 for p-values) post SOP implementation.
 - Disruption frequency significantly **decreased by 33.2% (p=0.026)** post SOP implementation.
- In the 2021 audit:**
 - Adherence to major steps of the EUA reached 100%.
 - Disruption rate **decreased to 5% (1/20), (p=0.032) compared to 2019.**

Conclusions

- Optimized efficiency and reduced disruptions
- A process to regularly update the SOP will ensure their functionality and benefit
- A place to record disruptions within the EUA checklist will allow for:
 - accurate analysis of delays
 - reflection to prevent recurrence
- eLearn will help staff follow SOP

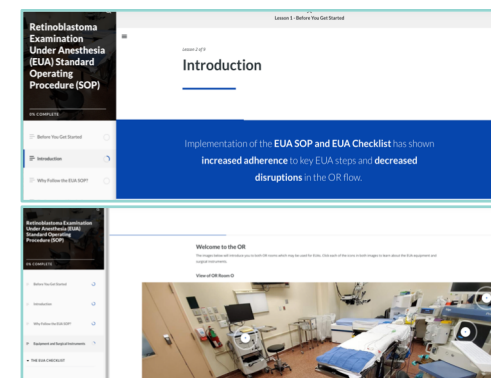


Fig. 2 Updated SOP e-Learning Module

Checklist Variable	Implementation of SOP (2019) ¹		P-value	Audit (2021) ²	*significant p-value comparing adherence to EUA checklist variables pre- and post-SOP implementation in 2019
	Pre	Post			
Review eCC ^{RB} database before EUA	5/17	16/22	*0.007	20/20	
Review RetCam images before EUA	14/18	22/22	*0.02	20/20	
10 min notice of EUA completion to anesthesia	3/21	19/23	*0.0001	20/20	
Update eCC ^{RB}	17/22	23/23	*0.015	20/20	

Table. 1 Adherence to Major EUA Steps following SOP Implementation

Disruptions	Implementation of SOP (2019) ¹		P-value	Audit (2021) ²	P-value	*significant p-value comparing number of disruptions pre- and post-SOP implementation in 2019
	Pre	Post				
Total	14/22	7/23	*0.026	1/20	**0.032	**significant p-value comparing number of total disruptions in 2019 to 2021
Equipment	8/22	4/23	-	0/20	-	
Miscommunication	6/22	4/23	-	1/20	-	
Procedural	0/22	0/23	-	0/20	-	

Table. 2 Rate of Operating Room Disruptions following SOP Implementation

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