Observation Tool: Surgical flow interruptions / Workflow interruptions in Operating Rooms

Please note that this is an adapted and translated tool that was published prior by Healey, Sevdalis, Undre and colleagues. Further information on this original tool can be found elsewhere (Healey, Sevdalis et al. 2006, Sevdalis, Healey et al. 2007, Sevdalis, Undre et al. 2013).

Further information concerning this tool and our study results can be found in the literature (for further information see Antoniadis, Passauer-Baierl et al. 2014, Weigl, Antoniadis et al. 2014)

Objective

An observational tool to identify intra-operative workflow interruptions in Operating Rooms (ORs).

Purpose

This observational tool enables coding of **(1)** predefined categories of interruptions and distracting events, and **(2)** the ratings for the extent the interruption event interferes with OR team functioning

(1) Workflow interruptions and disruptions

Working definition for observation in the OR

- Intra-operative interruptions and disruptions are defined as events during the surgical procedure that potentially distract the OR team or individual OR member from a primary task or interrupt their task
- We consider intra-operative interruption as an intrusion of an unplanned and unscheduled task or event, potentially causing a discontinuation of tasks, a noticeable break, or task switch behavior (e.g., answering a phone call during hand washing; surgeon responding to a nurse's question during suturing).
- [Specifically, two conditions need to be fulfilled: the current task (primary task) is suspended to perform an unplanned task (secondary task), resulting in discontinuous task performance; thus an interruption means that an observable event or obstacle in goal-directed behavior occurs, that hinders work performance, and attention resources have to be allocated to the break-in event]

Sources of intra-operative interruptions

Category		*Intra-op interruption*	*Explanation / Examples …*
People entering/ exiting the OR	1	People entering/exiting	.. other persons who do not belong to the OR team enter the room
phone-/beeper calls-/radio-related distraction;	2	Phone / Beeper	.. telephone or beeper call and subsequent responding
	3	Radio	… noisy radio
Case irrelevant communication (CIC):	4	CIC by Surgeon	… Surgeons talking loudly about issues that are not related to the current care
	5	CIC by Anesthetists	… (identical; applies to Anesthesia Sub-Team)
	6	CIC by Nurse	.. (identical; applies to Nursing Sub-Team)
	7	CIC by External personnel	… e.g., loud conversation among OR visitors
Equipment and Environment	8	Equipment failures	.. missing or non-functioning instruments or equipment
	9	Work environment	.. related to the work environment in the OR (e.g., diathermy pedals at the wrong place)
	10	Movement in front/ behind monitors	(if applicable) … e.g., surgeons view on laparascopic monitors is obstructed (similar for C-Arm Monitor)
Procedural	11	Procedural	.. interruptions or distractions intrinsic to surgical work, e.g., surgeon teaches students or awaits test results

(2) Severity of intra-operative interruptions: Interference with team functioning

Each observed interruption is rated for its severity on a 9-point scale, see also below (Healey, Sevdalis et al. 2006). Scale points 1–3 refer to observed distraction or interruption to a single member of the OR team (typically of a circulator), whereas in higher scale points two or more OR team members are affected by the distraction.

Level	*Observable effect to team-member or entire team functioning (for assessor to rate)*
1	potentially distracting source (e.g. beeper call but no one responds to it)
2	interference noticed by floating personnel (e.g. beeper call is noticed by the circulating nurses but not dealt with)
3	floating member attends to non-case distraction (e.g. the floating nurse responds to the beeper call)
4	single team member momentarily distracted from the task (e.g. anesthesiologist orients away from the focal tasks of documentation to a beeper call while continuing with the documentation)
5	team member pauses current task (e.g. surgeon pauses laparoscopy to view surgical instruments tray to select the equipment available while retaining control of instruments inserted in patient's abdomen)
6	team member attends to distraction (e.g. anesthesiologist responds to queries about the next case).
7	team distracted momentarily
8	team attends to distraction
9	Operation flow disrupted: This is the highest scale point, which refers to events when the whole surgical team is interrupted and needs to attend to the break-in event (e.g. equipment failure that stops the surgical procedure or the OR manager enters the room and discusses the case list with the entire team)

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References

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Observation sheet		*Intra-operative interruptions and disruptions*											*Source (Reason)*	*Recipient*	*Distraction Level*	*Notes*
	Time	People entering/ exiting	Phone / Beeper	Radio	CIC by Surgeon	CIC by Anesthetists	CIC by Nurse	CIC by External personnel	Equipment failures	Work environment	Movement	Procedural				
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Example

Observation sheet		***Intra-operative interruptions and disruptions***											***Source (Reason)***	***Recipient***	***Distraction Level***	***Notes***
	Time	**People entering/ exiting**	**Phone / Beeper**	**Radio**	**CIC by Surgeon**	**CIC by Anesthetists**	**CIC by Nurse**	**CIC by External personnel**	**Equipment failures**	**Work environment**	**Movement**	**Procedural**				
1	8:25:04		X										Beeper call	Rotating nurse	3	
2	8:34:12								X				Suction is not working	Surgeon	8	Scrub nurse fixes connection for 2min
3	8:43:12	X											Head surgeon enters		1	only checks status and leaves immediately
4	…															
5																
6																