



RSI Risk Assessment

This tool is intended to help identify RSI risk factors and contributing factors if they arise during the procedure. All procedures have some risk for an RSI.

Table 1. Risk Factors Associated with RSI Risk^{1-5, *, **}

High Risk¹

- Incorrect count¹
 - The researchers do not specify if they mean the outcome of the final count.
- Unexpected intraoperative factors¹
 - an unanticipated change in procedure,
 - equipment malfunction, or
 - other complication that would not be reasonably expected during the procedure (eg, bowel resection during cholecystectomy, vascular repair during colon resection).¹
- More than one surgical team¹
 - Judson et al² found a statistically significant correlation between number personnel in the procedures and the risk of a miscount.

Intermediate Risk

- No count performed¹
 - Due to inability or emergency procedures¹
- More than one procedure¹
- Long procedural duration¹
 - The longer the procedure, the risk of RSI increases. However, the procedural duration that increases RSI risk is unclear.¹
 - Judson et al² found that procedures longer than 5 hours were statistically more likely to have a miscount.

Study	Procedural Duration of RSI Group in Hours	Procedural Duration of Control Group in Hours	Significant Difference between Groups?
Stawicki et al ³	3.47 ± 2.49 Range 0.98 - 5.96	2.51 ± 1.74 Range 0.77 - 4.25	Yes
Gawande et al ⁴	3.03 ± 2.54 Range 0.49 - 5.57	2.89 ± 2.53 Range 0.36 - 5.42	No
Lincourt et al ⁵	3.47 ± 2.18 Range 1.29 - 5.65	2.85 ± 1.60 Range 1.25 - 4.45	No

- Blood loss > 500 mL¹
 - Expected or unexpected¹

*Moffatt-Bruce et al¹ proposed a risk stratification scheme in their study that this tool is based on. Because the data used to create the scheme was pooled from studies by Stawicki et al³, Gawande et al⁴, and Lincourt et al⁵ the information is limited. The researchers state that the risk stratification scheme is purely hypothetical and has not been validated.¹

**Moffatt-Bruce¹ did not find body mass index, emergency procedures, changes in personnel, or procedures performed after 5pm and before 7pm to be at an increased risk for an RSI. Additionally, the presence of a surgical trainee was not found to be protective of an RSI.¹

Table 2. Contributing Factors Associated with RSIs⁶⁻⁸

Category	Description
Human Factors	Peer review/credentialing of medical staff Inadequate orientation, in-service education, competencies Supervision of personnel or residents Staffing levels Action not consistent with organizational expectations Other (eg, distraction, fatigue, drift)
Leadership	Lack of or inadequate policies and procedures Failure to follow policies and procedures Organizational culture (failure to enforce accountability) Ineffective resource allocation Directing departments/services Nursing leadership Medical Staff-Other Other
Communication Breakdown	With physician, administration, among personnel, or with patient/family Oral communication Written/electronic communication Other
Operative Care	Inadequate operative care planning Inadequate patient monitoring Other (eg, rushing to complete task)
Assessment	Inadequate assessment Inadequate patient observation Scope or timing of reassessment Care decisions Other (eg, x-ray required and not completed)
Physical Environment	Equipment management (eg, correct size not available) Emergency Management Other (eg, room too small for procedure)
Information Management	Technical systems Incomplete medical records Availability of information Medical records Patient Identification Other
Care Planning/ Continuum of Care	Continuity of care Discharge/transfer of patient Adequacy of plans Collaboration Other
Other	Performance improvement issues Anesthesia care planning Patient education Patient rights Medication ordering

Early research on RSIs focused on identifying patient and procedural risk factors.³⁻⁵ When these risk factors occur they could increase the likelihood of contributing factors to occur as well. For instance, RSIs may occur more frequently during stressful situations such as when an unexpected change in the procedure occurs, not because of the situation itself but because of the impact these conditions have on communication and human factors (eg, teamwork, mindfulness). Therefore, interdisciplinary interventions that focus on improving the system culture and human factors may help decrease the risk of RSIs. Focusing on modifiable interventions that target improvement of human factors or the system culture to prevent RSIs is important because many of the risk factors identified by early research were not modifiable.

REFERENCES

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