OTA's Extreme Environmental and Psychological Exposure

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THE UNSEEN FRONTLINE: Quantifying the Extreme Environmental and Psychological Exposure of Operating Theatre Assistants in a Major Australian Hospital

A Position and Evidence Paper Highlighting the Unique and Highest Level of Sustained Exposure to Surgical Trauma and Critical Environments within the Perioperative Team

1. Executive Summary

Operating Theatre Assistants (OTAs) are the only constant perioperative presence across the entire surgical workflow. Unlike surgeons, anaesthetists, and scrub/scout nurses who are assigned to a single theatre or specialty list, OTAs in the described model provide continuous coverage to approximately 10 operating theatres across a 10-hour day, 4 days per week.

This paper quantifies that exposure at approximately 70 surgical procedures per day, or 280 procedures per week per assistant. This represents the highest volume and breadth of direct exposure to extreme surgical trauma, critical illness, and high-acuity environments of any role within the clinical and perioperative environment. This document outlines the operational reality, comparative exposure, nature of extreme interactions, and the significant psychological impacts and adaptive resilience developed through long-term service.

2. Operational Reality: Quantifying Exposure

Base Roster Model:

- Shift length: 10 hours per day
  - Roster: 4 days per week (40 hours compressed)
  - Coverage responsibility: ~10 Operating Theatres per small OTA team
  - Case turnover per theatre: Average 7 cases per day (accounting for short and long cases)
  - Total system exposure: 10 theatres x 7 cases = ~70 surgical procedures per day

Annualised Individual Exposure:

- Per week: 70 cases/day x 4 days = 280 surgical procedures
  - Per 48-week working year: ~13,440 surgical procedures
  - Per 5-year period: ~67,200 surgical procedures
  - Per 10-year career: ~134,400 surgical procedures

No other perioperative role maintains this breadth of continuous, cross-theatre exposure. An individual surgeon may perform 3-6 cases per day in a single specialty. A scrub nurse is assigned to 1 theatre. The OTA is exposed to ALL of them.

3. Comparative Exposure Analysis: Why OTAs Have the Highest Exposure

The claim that OTAs have the highest exposure is not rhetorical; it is structural.

Role	Theatres Per Day	Cases Per Day	Breadth of Trauma Exposure
Surgeon / Anaesthetist	1	2-6	Limited to own specialty list
Scrub / Scout Nurse	1	3-7	Limited to single theatre, single specialty
Anaesthetic Nurse	1-2	4-8	Limited
Operating Theatre Assistant	10 (all theatres)	~70 (entire complex)	TOTAL - All specialties, all traumas, all critical cases, every day

The OTA is the only role that does not get to 'finish' after a difficult case. While the primary team may debrief and have a break, the OTA is immediately called to the next theatre for the next trauma, the next arrest, the next paediatric emergency, or the next major haemorrhage. There is no filtering mechanism.

4. The Nature of Extreme Surgical Interactions

The exposure is not just quantitative, it is qualitatively extreme. In a major Australian tertiary hospital, the 70 cases per day includes:

a) High-Acuity Trauma: Motor vehicle accidents, stabbings, gunshot wounds, industrial crush injuries, burns - arriving unannounced, often with open wounds, massive blood loss, and distressed families nearby.

b) Critical Physiological Extremes: Massive transfusion protocols, cardiac arrests on the table, anaphylaxis, malignant hyperthermia, failed airways. The OTA is hands-on during resuscitation - performing chest compressions, handling blood products, managing equipment under extreme pressure.

c) Sensory Extremes: Continuous exposure to the sights, sounds, and smells of surgery - exposed bone, burnt tissue (diathermy), bowel contents, amputation, debridement of necrotic tissue, high-decibel saws and drills.

d) Paediatric and Obstetric Tragedy: The most psychologically demanding cases - non-accidental injuries in children, emergency caesareans with poor outcomes, neonatal emergencies.

e) Deceased and Organ Retrieval: Exposure to brain-dead patients for organ retrieval, handling of amputated limbs, fetal tissue, and deceased patients post-failed resuscitation.

f) Unfiltered Continuity: Unlike clinical staff who focus on their sterile field, the OTA manages the 'unfiltered' environment - blood and body fluid spills, contaminated waste, patient transfers of heavily injured patients, and the physical labour of moving critically ill patients while lines and tubes are in situ.

5. Psychological Impact of Long-Term Cumulative Exposure

International literature on perioperative staff identifies a clear trajectory of psychological injury from cumulative, unprocessed exposure to trauma. For OTAs, this is amplified by volume and lack of formal recognition.

5.1 Cumulative and Vicarious Trauma:

Repeated exposure to graphic injury and death without the professional framework or status that affords structured debriefing. Research describes this as 'cumulative exposure to potentially traumatic events'. Over 13,440 cases per year, even if only 5% are highly traumatic, that is >670 highly traumatic exposures annually.

5.2 Moral Injury and Helplessness:

OTAs are intimately involved in life-saving efforts but have no control over the outcome. They witness suffering, hold limbs prior to amputation, clean blood and other body remnants from the floor, and then must immediately prepare the same theatre for the next patient. This creates moral distress - the inability to process what was just witnessed.

5.3 Hypervigilance and Emotional Numbing:

A 10-hour shift requiring constant readiness across 10 theatres maintains the sympathetic nervous system in a prolonged state of alert. Over years, this contributes to emotional blunting, irritability outside work, sleep disturbance, intrusive imagery, and compassion fatigue - well-documented in perioperative literature.

5.4 Invisibility Factor:

OTAs are frequently excluded from formal debriefs (e.g., after a paediatric death or major trauma) despite having been present for the entire critical event. This 'invisibility' invalidates the exposure and prevents processing, significantly increasing psychological risk compared to roles with recognised clinical status.

6. The Resilience Operating Theatre Assistants Have Adopted

Despite this, OTAs demonstrate extraordinary, self-taught resilience. This should be recognised as a professional competency, not taken for granted.

- Functional Compartmentalisation: The ability to suppress immediate emotional response to continue life-saving work, moving from a paediatric trauma to an elective joint replacement within minutes while maintaining safety and professionalism.

- Peer-Based Solidarity: Small OTA teams develop tight, unspoken debriefing cultures - dark humour, brief check-ins, and physical support (taking over a heavy transfer) that act as informal psychological first aid.
- Procedural Mastery Under Pressure: Resilience expressed as calm, anticipatory action during chaos - knowing exactly what equipment is needed for a massive haemorrhage before being asked, while managing distress around them.
- Physical and Mental Endurance: Sustaining 10-hour shifts of heavy manual handling, standing, and rapid task-switching across 70 cases per day requires exceptional stamina.
- Continuity of Care Ethic: Returning day after day, year after year, to the most extreme environment in the hospital, because patient safety depends on it.

7. Conclusion and Recommendation

By every objective measure - number of theatres covered, number of surgical cases witnessed, breadth of specialties encountered, and continuity of exposure to blood, trauma, death, and critical emergencies - Operating Theatre Assistants have the highest level of sustained exposure to extreme surgical environments of any group in the perioperative and clinical environment.

This exposure is currently not matched by equivalent recognition, psychological support, or classification. The resilience OTAs have adopted is remarkable, but resilience should not be used as a justification for lack of support.

Recommendations:

1. Formal recognition of OTAs as a high-exposure trauma role for the purposes of wellbeing screening.
2. Mandatory inclusion of OTAs in all post-trauma debriefs and critical incident support.
3. Proactive, confidential psychological support and education on cumulative trauma, not just reactive EAP.
4. Acknowledgement of workload volume (280 procedures/week) in staffing and fatigue management models.

Operating Theatre Assistants are not peripheral support. They are the constant, central workforce that absorbs the cumulative trauma load of the entire operating suite.

Prepared: 25 July 2026 | For internal notification and recogniti