Defining Military-Specific Knowledge Gaps in Primary Spontaneous Pneumothorax
A Consensus-Based Priority-Setting Analysis

Carolina Alvarez, MD[1], Timothy Veit, DO[1], John Kuckelman, DO[1], Mia DeBarros, MD[1]
[1]Department of Surgery, Madigan Army Medical Center, Tacoma, WA, USA

Background

Primary spontaneous pneumothorax (PSP) affects young, otherwise healthy individuals, including approximately 5 per 100,000 active-duty service members. Civilian guidelines address diagnosis and treatment but do not fully account for deployment, aviation or diving restrictions, prolonged evacuation, limited access to definitive care, surveillance before deployment, or return-to-duty requirements.

Objective

To gather expert consensus on priority clinical questions to inform military-specific guidance for the evaluation and management of primary spontaneous pneumothorax.

Materials and Methods

A military cardiothoracic surgery working group developed questions addressing diagnosis, management, and operational considerations. Participants rated whether each item should enter a formal consensus process.

Participants	14 military cardiothoracic surgeons, consultants, and trainees
Rating Scale	5-point Likert Survey
Primary Outcome	Agree or strongly agree that an item should enter formal consensus
High Agreement	At least 85% agree or strongly agree
Analysis	Item level prioritization and review of qualitative comments

Results

- 66% priority questions met the high-agreement threshold

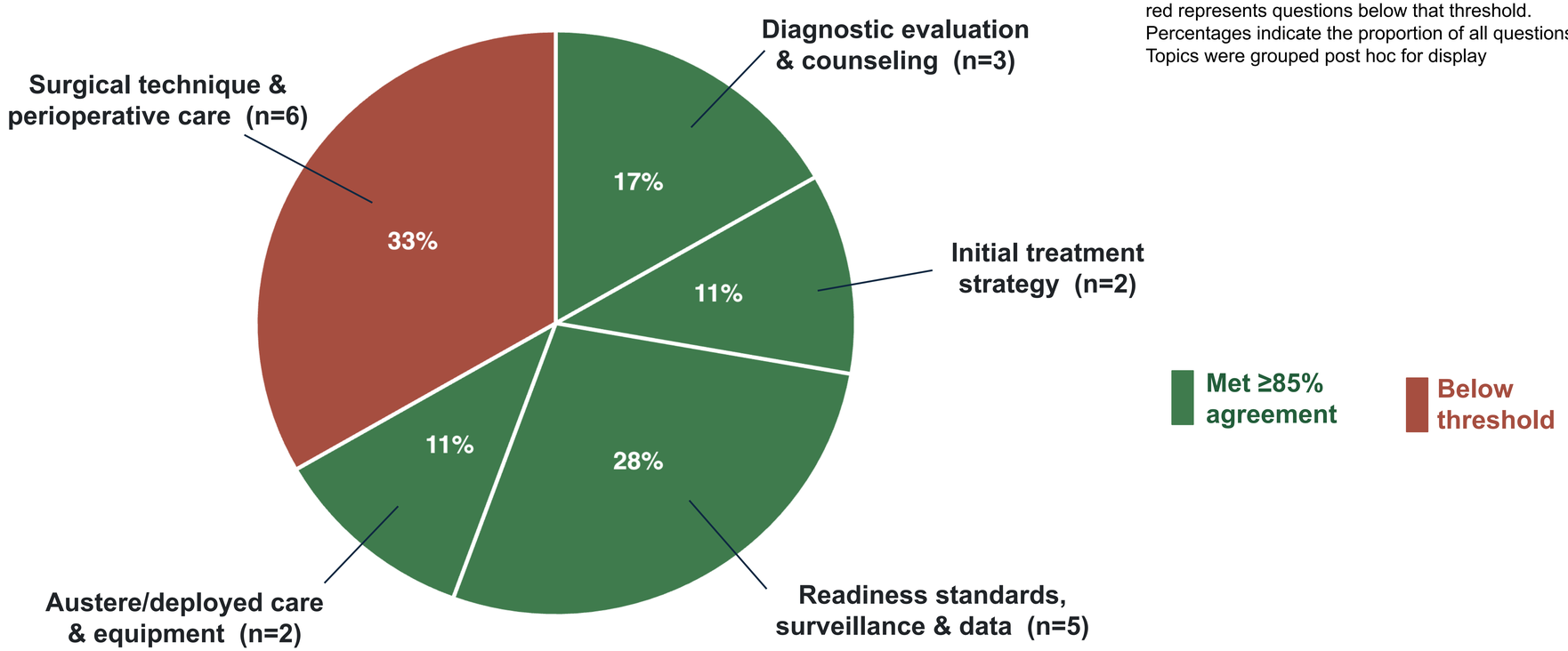

Figure 1. Distribution of 18 priority questions by topic and consensus status. Green segments represent questions ≥ 85% agreement threshold; red represents questions below that threshold. Percentages indicate the proportion of all questions. Topics were grouped post hoc for display

Military Operational Relevance

- Recurrence during deployment or in austere environments
- Prolonged evacuation and limited thoracic surgical capability
- Aviation, diving, sea-duty, and occupational restrictions
- Pre-deployment recurrence-risk assessment and surveillance
- Fitness standards and return-to-duty clearance

Discussion

- Consensus was strongest for questions addressing diagnostic evaluation, initial management, operational readiness, austere care, surveillance, and return-to-duty.
- Lower agreement in surgical and perioperative domains reflects practice variability, limited supporting evidence, and areas that may remain subject to surgeon discretion.
- These results prioritized questions for a formal Delphi process and military-specific PSP guidance.
- This priority-setting survey identifies areas requiring guidance but does not establish clinical recommendations.
- Findings should be interpreted in the context of small, specialty-specific expert sample.