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Narrative Review: Communication and Decision-Making Dynamics Between Nurses, Paramedics, and Special Forces Teams in High-Stress Situations

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Abstract

Background: Effective response to high-stress emergencies like mass casualty incidents relies on seamless collaboration among nurses, paramedics, and special forces medics. Their distinct professional cultures and protocols, if unaligned, can create dysfunctional dynamics that compromise outcomes.

Aim: This review synthesizes evidence (2010-2024) on communication, decision-making, and collaboration dynamics among these personnel in emergency scenarios, identifying barriers and facilitators to effective teamwork.

Methods: A comprehensive search across PubMed, CINAHL, PsycINFO, and military databases was conducted. Included qualitative studies, reviews, and simulations were thematically analyzed.

Results: Key themes include: contrasting professional paradigms (holistic vs. protocol-driven vs. mission-tactical); communication barriers under stress (jargon, overload); a shift to intuitive decision-making; and critical enablers like shared mental models and cross-training.

Conclusion: Genuine interoperability requires pre-event joint training, standardized communication (e.g., SBAR), and mutual role understanding. Investing in these "soft skills" is as vital as technical proficiency.

Keywords: Interdisciplinary Communication; Team Dynamics; High-Stress Medicine; Special Operations Forces; Paramedics

Introduction

The chaotic aftermath of a mass shooting, the rubble of a natural disaster, or the confined space of a hostile extraction—these are the crucibles of high-stress medical response. In these environments, where seconds dictate survival, the traditional boundaries of healthcare delivery dissolve. The response team is no longer a homogeneous unit but a rapidly assembled, ad-hoc coalition of professionals. Among the most critical members of this coalition are nurses, paramedics, and special operations forces (SOF) medical personnel (often 18D Special Forces Medical Sergeants, PJs, or SEAL Corpsmen). Each brings a unique and vital skillset, forged in different fires: the nurse in the structured chaos of the emergency department, the paramedic in the mobile uncertainty of the pre-hospital scene, and the SOF medic in the tactically constrained, resource-poor austere environment (Serou et al., 2022). While their shared goal is patient stabilization and survival, their pathways to that goal are shaped by profoundly different professional paradigms, communication lexicons, and decision-making architectures. When these distinct cultures converge under extreme pressure without prior integration, the result can be fatal friction: duplicated efforts, missed critical information, conflicting priorities, and ultimately, preventable loss of life (Aldrich, 2019).

This narrative review, synthesizing literature from 2010 to 2024, examines the complex interplay of communication and decision-making among these three critical provider groups in high-stress situations. It moves beyond technical skill comparisons to explore the human factors and socio-cultural elements that determine whether a multidisciplinary team will coalesce into a high-reliability organization

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or fragment under strain. The high-stress environment acts as an accelerant and amplifier of both strengths and weaknesses in team dynamics. Physiological stress responses—tunnel vision, auditory exclusion, degraded cognitive processing—directly impair the very faculties required for effective communication and nuanced decision-making (Lavoie et al., 2023; Albanesi et al., 2021). Understanding how these professions navigate this impairment, both individually and collectively, is essential for designing training, protocols, and systems that promote synergy rather than conflict. This review will first delineate the contrasting professional paradigms, then analyze communication patterns and breakdowns, explore decision-making models under duress, and finally, propose evidence-based strategies for building cohesive, high-performing interdisciplinary teams capable of operating effectively at the edge of chaos (O'Connor et al., 2023).

Contrasting Professional Paradigms: Culture, Training, and Operational Mindset

The foundation of interdisciplinary dynamics lies in the deeply ingrained professional identities and operational frameworks of each group. These "mental models" dictate how a problem is defined, what information is prioritized, and what actions are deemed appropriate, often without conscious thought.

The Nursing Paradigm: Holistic, Patient-Centered, and Continuity-Focused

Registered nurses, particularly those from emergency, critical care, or flight nursing backgrounds, are trained in a model of comprehensive, patient-centered care. Their assessment is systematic and detailed, encompassing physiological, psychological, and social dimensions. Nursing practice emphasizes continuity, vigilance, advocacy, and the meticulous management of multiple concurrent processes (e.g., infusions, monitoring, documentation) within a *facility-based* environment where resources, though sometimes stretched, are generally predictable and support is proximate (Griffits et al., 2023). In a joint operation, a nurse may instinctively seek a more complete patient history, prioritize meticulous documentation for handoff, or advocate for a specific intervention based on in-hospital experience, which can be perceived as "slowing down" a time-critical field evacuation.

The Paramedic Paradigm

Paramedicine is rooted in the principles of scene safety, rapid primary survey, stabilization of immediate life-threats, and swift transport to definitive care—the "scoop and run" or "stay and play" decision calculus. Their domain is the *uncontrolled pre-hospital scene*, where they are the incident commander for medical operations. Decision-making is heavily guided by standardized protocols and algorithms (e.g., ACLS, PHTLS) designed for reliability under stress. Communication is typically concise and structured for radio transmission (Perona et al., 2019). When working with others, paramedics may prioritize decisive, protocol-based action and clear transfer of care, potentially viewing extended on-scene diagnostics or discussions as hazardous delays.

The Special Forces Medic Paradigm

The SOF medic operates under a tripartite mandate where patient care is often the third priority, after mission success and tactical security. Their training emphasizes extreme resource limitation, prolonged field care (PFC), where evacuation may be delayed for hours or days, and autonomous decision-making far from medical oversight. Their interventions are often definitive, not just stabilizing (e.g., surgical airways, advanced analgesia, antibiotic initiation). Their communication is integrated into tactical radio discipline, using brevity codes and operating with a high degree of trust in small, tightly knit teams (Jenkins et al., 2016). A SOF medic might prioritize a "tactical patient pack-up" for movement under fire over a detailed secondary survey, or make a resource-allocation decision that seems utilitarian or harsh by conventional medical standards (Table 1). Figure 1 illustrates the communication flows between nurses, paramedics, and special forces medics during high-stress scenarios. Arrows represent bidirectional and unidirectional information exchange, with annotated barriers and facilitators.

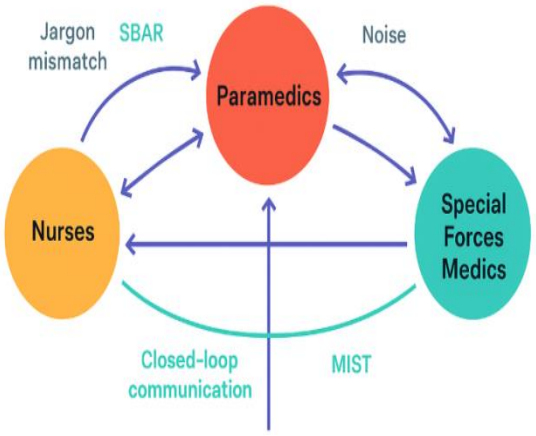

Figure 1: Interdisciplinary Communication Pathways in High-Stress Medical Environments

Communication Dynamics Under Stress

In high-stress situations, effective communication is the circulatory system of a team, essential for delivering the vital oxygen of information. However, acute stress acts as a potent vasoconstrictor, systematically diminishing the flow and fidelity of this critical exchange. To design effective countermeasures, a clear understanding of the specific communication barriers is paramount.

Table 1: Contrasting Professional Paradigms in High-Stress Medical Response

Domain	Nurse (ED/Critical Care)	Paramedic (Pre-Hospital EMS)	Special Forces Medic (Austere/Tactical)
Primary Environment	Controlled(ish) facility, fixed resources.	Uncontrolled scene, mobile resources.	Hostile/denied environment, severely limited resources.
Core Decision Driver	Comprehensive patient assessment, continuity of care.	Scene safety, protocol application, rapid transport.	**Mission > Tactical > Patient**; prolonged field care capability.
Communication Style	Detailed, for handoff and legal record. Often nurse-to-nurse or nurse-to-physician.	Concise, structured for radio (e.g., MIST report). Scene command oriented.	Brevity codes, integrated into tactical net. High implicit trust within unit.
Typical Stressors	High acuity, high volume, multitasking, institutional pressures.	Unpredictable scenes, environmental dangers, solo or paired practice.	Direct threat, isolation, extreme resource constraints, ethical dilemmas of combat care.
View of Time	Cyclical (patient journey through department).	Linear and compressed ("golden hour," on-scene time).	Variable and extended (evacuation timeline uncertain, may hold patient for long periods).

Barriers to Effective Communication

Multiple, often compounding, obstacles arise under duress. Information overload and filtering are primary challenges, where the sheer volume of sensory inputs—noise, multiple casualties, overlapping radio traffic—overwhelms cognitive processing capacity. This forces individuals to subconsciously filter information through their professional paradigm; a nurse may prioritize patient lung sounds over tactical radio chatter, while a special operations forces (SOF) medic might screen out detailed nursing assessments to monitor for threat updates (Ashcroft et al., 2021). The physical environment itself presents a barrier through a degraded auditory environment and technology failure. High ambient noise from sirens, machinery, or gunfire impairs speech reception, while reliance on radios introduces critical points of failure, including dead batteries, poor signal, and incompatible systems between civilian and military networks (Biswas et al., 2022; Kuckelman et al., 2018).

Even when messages are transmitted and received, conflicting jargon and lexicons can render them unintelligible. Each profession operates with its own shorthand—nurses use terms like "q15min neuro checks," paramedics transmit standardized "MIST" reports (Mechanism, Injuries, Signs, Treatment), and SOF medics employ TCCC guidelines and tactical brevity codes. Without a shared glossary, critical meaning is lost (Flin & Maran, 2004; Innocenti et al., 2022). Furthermore, hierarchical and cultural inhibitions, often described as a steep "authority gradient," can silence crucial voices. The strong traditional hierarchies in both military and medical settings may prevent a junior paramedic from questioning a SOF team leader's decision or stop a nurse from challenging a physician's remote order (O'Daniel & Rosenstein, 2008; Etherington et al., 2019). Underpinning these issues is often a fundamental lack of shared situational awareness, where team members operate from entirely different mental pictures of the event. For example, a nurse in a receiving hospital, unaware of an ongoing tactical threat delaying evacuation, may misinterpret the field team's actions, leading to frustration and misaligned priorities (Endsley, 2020; Zhang et al., 2023).

Facilitators of Effective Communication

To overcome these barriers, evidence-based facilitators must be deliberately implemented. The adoption of structured communication tools provides a common framework to bridge lexical gaps. Mnemonically driven protocols like the SBAR (Situation, Background, Assessment, Recommendation) framework standardize handoffs between paramedics and nurses, while the pre-hospital MIST report ensures concise trauma updates are effectively given and received (Guasconi et al., 2022). Closed-loop communication introduces a disciplined verification step: the sender initiates a message, the receiver acknowledges and repeats back the core information, and the sender confirms accuracy. This practice is a critical bulwark against miscommunication in chaotic environments and is a staple of high-reliability fields like aviation and tactical teams (Brinck & Tanggaard, 2016).

Building bridges between professional cultures is another powerful strategy, often achieved through the role of the liaison or embedded clinician. Integrating a nurse or paramedic with cross-training in tactical medicine (e.g., TECC) into a SOF support role, or having a SOF medic rotate in a civilian trauma center, creates an invaluable "translator" who facilitates mutual understanding and smoother integration during joint operations (Schauer et al., 2023). Finally, proactive pre-briefs to establish shared mental models are vital. Conducted before a planned operation or disaster response shift, these briefs explicitly define roles, communication protocols, priority care goals, and key decision

points, thereby aligning expectations and reducing on-scene ambiguity (Abildgren et al., 2022).

Decision-Making in the Cauldron: From Analysis to Intuition

Decision-making under extreme stress undergoes a fundamental transformation, deviating sharply from the calm, analytical models emphasized in training. As time pressure and risk escalate, experts transition towards more intuitive, pattern-matching approaches to maintain functionality.

Models of Decision-Making Under Duress

The classical analytical model—characterized by conscious, systematic information gathering, option generation, and deliberative weighing of pros and cons—becomes impractical and too slow in a genuine crisis (Hine et al., 2018). In its place, experienced providers often employ the Recognition-Primed Decision (RPD) model. This model describes how experts rapidly recognize a situation as typical based on prior experience (pattern matching), mentally simulate a single, seemingly workable course of action, and implement it immediately. A SOF medic instantly decompressing a tension pneumothorax upon recognition of the signs, or a paramedic declaring a "load and go" trauma patient based on mechanism, are examples of RPD in action (Klein, 2015).

However, the stressful environment can also induce maladaptive cognitive states. Stress-induced cognitive tunneling occurs when duress causes a provider to fixate on a single piece of information or task to the exclusion of other critical data. For instance, a clinician might become hyper-focused on securing intravenous access while completely missing a patient's deteriorating respiratory status (Ghodsi Astan et al., 2022). The most effective defense against such individual cognitive narrowing is the collective capacity of the team. In high-functioning units, decision-making occurs through distributed cognition. Here, cognitive labor is shared and parallel: the paramedic manages the airway, the nurse obtains vascular access, and the SOF medic conducts secondary surveys while monitoring the tactical perimeter. The "decision" to treat emerges from this coordinated effort, with leadership's role being to integrate these distributed streams of cognition into a coherent, unified treatment plan (Wakeman & Langham Jr, 2018).

The interplay between these models is fluid and context-dependent. A team might seamlessly employ rapid RPD for an immediate life-threatening intervention ("This is a tension pneumothorax, decompress now") but then shift to a more deliberate, team-based analytical discussion for a complex ethical or resource-allocation dilemma ("We have one unit of whole blood and two critical patients"). This adaptive flexibility is the hallmark of expert team performance in the cauldron of crisis. Figure 2 compares how each profession transitions from analytical to intuitive (RPD-based) decision-making under acute stress.

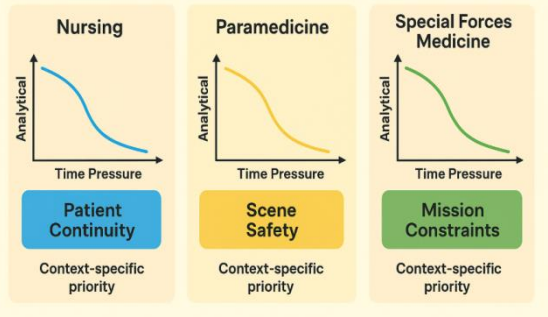

Figure 2: Comparative Decision-Making Models: Nursing, Paramedicine, and Special Forces Medicine

Strategies for Integration and Training

Achieving genuine interoperability for seamless collaboration in high-stress environments demands deliberate, pre-event investment. It is a strategic imperative that one cannot rely on improvisation or goodwill during a crisis. The cornerstone of this effort is joint, high-fidelity, multi-disciplinary simulation. Effective simulations must transcend basic medical skill drills to authentically replicate the environmental noise, psychological pressure, and communication breakdowns of real-world scenarios. By incorporating ambiguous information, severe resource constraints, deliberate technology failures, and injects that force teams to negotiate roles and share leadership, these exercises build the adaptive capacity required for actual crises (Snavely, 2018). Crucially, the post-simulation debrief, often enhanced by video-assisted review, must shift focus from individual technical performance to analyzing team communication patterns, clarifying role boundaries, and fostering shared situational awareness (Fernandez et al., 2021).

Complementing simulation is the deep cultural understanding fostered through structured cross-training and exchange programs. Formal initiatives, such as having nurses and paramedics complete Tactical Combat Casualty Care (TCCC) courses or embedding special operations forces (SOF) medics in Level I civilian trauma centers, serve to demystify each profession's operational realities. These exchanges build profound mutual respect by providing firsthand insight into respective capabilities, constraints, and decision-making frameworks, thereby establishing a bedrock of trust that is invaluable during joint operations (Strauss et al., 2021). To minimize cognitive load and procedural friction at the point of care, the development and use of common protocols and equipment kits are essential. Aligning clinical guidelines—for instance, adopting TCCC principles as a universal baseline for hemorrhage control—and standardizing critical equipment like tourniquet models, chest seals, and intraosseous devices ensures that any provider can

effectively use another's resources without confusion or delay (Butler, 2017).

Underpinning all these structural strategies is the critical need to foster psychological safety and flatten hierarchical barriers. Leadership at every level must actively solicit input from all team members, regardless of rank or professional affiliation, by culturally endorsing phrases that invite collaboration, such as “I need a check” or “See something, say something.” Furthermore, conducting blameless after-action reviews that focus on systemic improvement rather than individual fault is essential for creating an environment where learning and candid feedback can thrive (Edmondson, 2019). Finally, targeted technological solutions are required to overcome persistent communication gaps. This includes investing in interoperable hardware that can bridge military and civilian radio networks, as well as implementing shared digital platforms for real-time situational awareness, such as common operational mapping and patient tracking systems, to maintain a cohesive mental model across geographically dispersed team elements (Martin et al., 2018).

Table 2: Strategies for Optimizing Interdisciplinary Team Performance

Strategy	Targeted Challenge	Specific Actions	Expected Outcome
Cross-Paradigm Education	Mutual misunderstanding, stereotyping.	- Nurses/Paramedics take the TCCC course. - SOF Medics do clinical rotations in civilian trauma ED. - Joint seminars on respective protocols and constraints.	Increased mutual respect, accurate mental models of others' capabilities, and reduced "us vs. them" mentality.
Structured Communication Protocols	Jargon confusion, incomplete handoffs, radio clutter.	- Adopt SBAR for all clinical handoffs, regardless of setting. - Enforce closed-loop communication for critical orders/info. - Agree on common brevity terms for priority messages.	Reduced errors, faster transfer of essential information, and clearer shared situational awareness.
High-Fidelity Interdisciplinary Simulation	Lack of shared experience, unfamiliar roles, and stress inoculation.	- Design scenarios requiring resource negotiation & role fluidity. - Introduce communication breakdowns (radio failure, noise). - Conduct rigorous debriefs focusing on process, not just outcome.	Developed tacit understanding, stress-hardened communication patterns, and established non-verbal cues.
Pre-Event Briefing & Role Clarification	Role ambiguity, conflicting priorities.	- Mandatory brief for all joint operations outlining: Chain of command, communication plan, medical priorities (e.g., MARCH vs. ABCDE), evacuation plan.	Aligned expectations, empowered decision-making within framework, reduced on-scene negotiation.
Leadership Emphasis on Psychological Safety	Hierarchical silencing, fear of speaking up.	- Leaders model vulnerability by asking for checks. - Enforce "no blame" post-event analysis. - Reward team members for voicing concerns.	Earlier error interception, utilization of full team expertise, and enhanced adaptive capacity.

Conclusion and Future Directions

The dynamic interface between nurses, paramedics, and special forces medical teams represents a critical frontier in high-stress medicine. The evidence is clear: technical medical skill, while necessary, is insufficient for success in these complex, multi-actor domains. The decisive factors often lie in the "soft" sciences of human factors, communication, and team cognition. Dysfunction arises not from a lack of commitment, but from unexamined differences in professional culture, communication methods, and decision-making logic that are magnified by the physiology of acute stress.

Moving forward, a paradigm shift is required. Training and preparedness must evolve from a siloed focus on individual or single-profession unit readiness to a dedicated pursuit of *interoperability*. This requires sustained investment in the strategies outlined: immersive joint simulation that replicates true stress and complexity; systematic cross-training that builds empathy and understanding; the formalization of communication bridges like SBAR; and leadership committed to fostering psychologically safe, adaptive teams.

Future research should employ more sophisticated methodologies, such as network

analysis of communication patterns during simulated mass casualty events, or longitudinal studies of teams that undergo sustained interoperability training. The goal is to move from describing the problem to quantifying the solutions, providing an evidence base for the resource allocation this training demands. In an era of increasing complex threats and disasters, the ability of these diverse professionals to communicate seamlessly and decide effectively as one team is not just an operational advantage—it is a moral imperative for the patients whose lives depend on their unified action.

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