Qualitative investigation of military surgical resuscitation teams: what are the drivers of success of a rapid response team?

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ABSTRACT

Objectives This qualitative study explores the characteristics of a specialised military medical rapid response team (MRRT), the surgical resuscitation team (SRT). Despite mixed evidence of efficacy, civilian MRRTs are widely employed, with significant variation in structure and function. Recent increased use of these teams to mitigate patient risk in challenging healthcare scenarios, such as global pandemics, mass casualty events and resource-constrained health systems, mandates a reconceptualisation of how civilian MRRTs are created, trained and used. Here, we study the core functions and foundational underpinnings of SRTs and discuss how civilian MRRTs might learn from their military counterparts.

Design Semistructured interview-based study using Descriptive Qualitative Research methodology and Thematic Analysis.

Setting Remote audio interviews conducted via Zoom.

Participants Participants included 15 members of the United States Special Operations Command SRTs, representing all medical specialties of the SRT as well as operational planners.

Results Adaptability was identified as a core function of SRTs and informed by four foundational underpinnings: mission variability, shared values and principles, interpersonal and organisational trust and highly effective teaming. Our findings provide three important insights for civilian MRRTs: (1) team member roles should not be defined by silos of professional specialisation, (2) trust is a key factor in the teaming process and (3) team principles and values result in and are reinforced by organisational trust.

Conclusion This study offers the first in-depth investigation of a unique military MRRT. Important insights that may offer benefit to civilian MRRT practices include enabling the breakdown of traditional division of labour, allowing for and promoting deep interpersonal and professional familiarity, and facilitating a cycle of positive reinforcement between teams and organisations. Future investigation of small team limitations, comparability to civilian MRRTs, and the team relationship to the larger organisation are needed to better understand how these teams function in a healthcare system and translate to civilian practice.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study offers the first qualitative analysis of US Special Operations Command Surgical Resuscitation Team (SRT) function and developmental characteristics, a specialised military medical rapid response team (MRRT) with many similarities to civilian teams.

⇒ The core function of adaptability with unique foundational underpinnings allows SRTs to meet highly variable mission needs. These findings may offer important lessons for civilian MRRTs.

⇒ Due to study design, in-depth exploration of the potential limits of SRT adaptability in relation to small team size or the potential burdens of training and deployment demands was not performed.

⇒ The findings offer novel investigation into the function of small interprofessional healthcare teams but require future study of the teams’ relationship to the larger healthcare system.

INTRODUCTION

Medical rapid response teams (MRRTs) intervene in the care of hospitalised patients with early signs of unexpected clinical deterioration.1 While MRRTs vary widely across hospital systems, these teams typically bring experienced healthcare providers to a patient’s bedside to assist the regular care team in stabilising the patient, making rapid diagnostic decisions, and facilitating escalation of care to prevent ‘failure to rescue’ events.2 Despite broad adoption, the role of MRRTs is often disputed because assessments of their effectiveness have generated mixed results.3–5 These mixed efficacy results likely reflect the heterogeneity of the MRRT structure and function, as described in a survey of over 100 U.S. hospitals.6 However, changing societal circumstances (eg, global pandemics, natural disasters, overfilled hospitals with reduced medical staffing and mass casualty events) have reshaped the nature of these debates, highlighting the need for
a reconceptualisation of the purpose of MRRTs. The debate no longer asks if MRRTs should be part of patient care; instead, the question is how they should be created and deployed. The study of specialised military MRRTs can provide insight into this issue because, in the military context, MRRTs have been designed, built, trained and tested to respond to unpredictable situations, such as those that are increasingly part of civilian life. By investigating military MRRTs, we can determine whether these teams hold lessons that can be usefully transferred or translated to benefit civilian MRRTs.

Over 30 years ago, the U.S. military created the concept of Surgical Resuscitation Teams (SRT). Analogous to MRRTs, SRTs are mandated to provide prompt damage control surgery, resuscitation and critical care transport for injured and acutely ill patients. These small interdisciplinary healthcare teams are specifically selected, trained, resourced and employed to provide timely health risk mitigation under the most austere and challenging conditions (eg, in combat zones and natural disaster settings). The SRTs are composed of physician assistants, surgeons, emergency medicine physicians and nurse anaesthetists with critical care nursing background. When not performing military duties, these team members maintain independent clinical practice in both civilian and military hospitals. While team members share SRT foundational training experiences and some iterative training events, they are often called on in crisis situations to form ad-hoc teams with little preparation time or interpersonal familiarity.

Data on SRT performance have been collected since their inception, but have remained classified (ie, not to be publicly disseminated) until recently. In 2017, the first published paper on SRT efficacy described 12 years of after-action reports from casualty episodes of care. The analysis showed that SRTs were effectively used to provide mobile responses directly at the point of injury, perform as an independent surgical and resuscitative entity in a forward setting outside formal hospital contexts, facilitate casualty transport and augment existing medical treatment facilities. These capabilities resulted in an overall survival rate of 97.1%. While the study’s analysis focused on patient outcomes, the authors speculated on the factors that might impact SRTs’ success: the small size and role flexibility that facilitates speed of execution, a supporting organisation that grants autonomy, and a unique selection and training regimen that allows teams and individual members to maintain constant high levels of medical skill proficiency, logistical readiness and team function. Since SRTs are specifically designed to respond to a twofold challenge of unpredictability (ie, the emergent medical condition and unpredictable situational context), we suggest that SRTs may constitute a model that could usefully inform the conceptualisation of hospital-based MRRTs.

The purpose of this investigation was to study SRTs and discuss how civilian MRRTs might gain insight from their military counterparts. Specifically, this study asks: what is the core function and foundational underpinnings of SRTs?

METHODS

We used a Descriptive Qualitative Research approach to explore the perspectives of the people who experience the phenomenon (ie, the perspectives of SRT members about the function and underpinnings of SRTs); (2) develop an understanding of the phenomenon by describing it (ie, by identifying the recurrent themes used by SRT members to describe what makes these teams successful); and (3) generate insights into how to improve practice (ie, to offer insights for improving civilian MRRTs). Thus, the functionality of the descriptive qualitative approach aligned with our research goals. The study conduct and reporting were guided by and in compliance with all elements of the Consolidated Criteria for Reporting Qualitative Research. Patients and/or the public were not involved in the design, or conduct, or reporting or dissemination plans of this research.

Participants and recruitment

We purposefully sampled 15 members of the United States Special Operations Command SRTs. To examine a broad representation of medical specialties, we performed equitable sampling of team members across medical specialties as well as medical operations planners (ie, individuals responsible for planning and coordinating SRT missions). The participants were recruited using a standardised email and no members declined to participate. Only one author (MJE), bound by military and ethical obligations, was knowledgeable of participant identity.

Participants represented a range of SRT experience (2–12 years) and specialties (surgery, anaesthesia, emergency medicine, physician assistants and operational planners). All participants had deployed with SRTs at least once. All participants were men, with a mean age of 37±14 years, and had completed their specialty medical training.

Data collection

Semistructured interviews were used as the data collection method. Interviews were performed by one author (MJE) using an interview protocol piloted and revised by all study authors (see online supplemental file 1 for the interview guide). This research was conducted as a component of the lead author’s graduate studies in medical education with extensive support and collaboration by the research collaborators, all of whom are experts in qualitative research (SC, MS, LV). The interviewing author has no military authority over the voluntary participants. The interview questions prompted participant reflections about SRTs, including the composition of SRTs, the dynamics of teamwork within SRTs and the guiding principles of SRT work. The interviewing author personally recorded, transcribed and reviewed each interview, removing any personally identifiable information.
and redacting any sensitive (ie, classified) information. Interviews lasted 1–4 hours, owing to the semistructured format, and were conducted between June and August 2022 without repeated interviews.

**Data analysis**

Thematic analysis was used for data analysis because of the flexibility offered by this approach in exploring participants’ perspectives on the function and foundational underpinnings of SRTs. Quirkos (V.2.5.3, Edinburgh, UK, 2023; https://www.quirkos.com) qualitative analysis software was used by all team members during analysis. Using a reflexive and inductive approach, data analysis started with MJE coding five transcripts to develop an initial coding scheme. This coding scheme was applied independently by members of the research team (MJE, SC, LV) to another five transcripts. Once the research team members were familiar with the data and coding scheme, they discussed and refined the code scheme. MJE then applied the refined coding scheme to the entire dataset, meeting frequently with SC, MS and LV to identify construct themes, discuss the relationships between themes and derive categories that grouped similar themes. These discussions continued until a consensus was reached, resulting in a final thematic framework that encapsulated the findings of the study. As a measure of rigour, we shared our findings with six SRT members who voiced unanimous agreement with the conclusions of the research team.

**RESULTS**

SRT members identified **adaptability** as the core function driving the patient care delivered by these teams. The foundational underpinnings enabling adaptability include consistent themes: mission variability, shared values and principles, interpersonal and organisational trust and highly effective teaming (table 1). In the following results, we describe the core function and these themes, offering illustrative data excerpts.

**SRT core function: adaptability**

Study participants explained that adaptability was essential—at the individual, team and organisational levels—for SRT functioning, given the missions these teams were deployed to accomplish. When deployed, SRTs provide the highest quality medical care possible in unpredictable and sometimes hostile circumstances. As one participant described, these teams provide patient care ‘under extreme stress’ with missions that included, for example, “damage control surgery, damage control resuscitation, and critical care transport in a prolonged environment with minimal support.” (4) The protracted and ambiguous nature of deployment requires each SRT member, the SRT itself, and the military as a broad organisation to embrace and exhibit the ability to adapt as needed to solve problems, provide mutual support and complete the mission. In other words, SRT adaptability involved “doing whatever it takes to get the job done and being willing to work with whatever you have” (12) because “we don’t know what we’re going to be asked to do, we don’t know when we’re going to be asked to do that, and we don’t know where we’re going to be asked to do it.” (13)

Participants understood that all SRTs comprised clinicians specifically selected for their adaptability capacity. According to one participant, selection involves “put[ting] them [SRT candidates] in stressful scenarios and have them execute their job and they either adapt or they don’t.” (11) In so doing, from the moment candidates start competing for SRT membership, the organisation requires all SRT clinicians to demonstrate an extraordinary capacity to adapt in the performance of their professional medical skills. As one participant described:

You have to come to the table as an individual and be adaptable to just about any situation that you’re thrown into. And then you put five people together that all have that same personality characteristic and they’re gonna figure it out. (11)

The importance of adaptability extends beyond patient care. It also involves adapting to stressors related to time-sensitive events, limited logistical resources, challenging environmental conditions, changing interpersonal dynamics and potential physical threats to patients and team members. SRTs are often parachuted (literally) into hostile environments where they carry on their persons the only medical resources they will have available to perform life-saving surgery in the dirt of a foreign country, while under enemy fire. Under such stress, harnessing adaptability was described as a survival skill. As SRT members described, team members adjust to each other, recognise and respect each other’s needs and individual personalities because “the team is so small you have to maybe give up some of your own personal freedoms of movement to do things as a team.” (8)

Not only was adaptability at the individual and team levels identified as critical for SRT success, but the same was believed about the supporting organisation. The arm of the military organisation housing these teams gave SRT members “the ability to go problem-solve and the equipment and the support needed.” (12) The sense that the organisation trusted the team fueled SRTs’ trust in the organisation. SRTs felt empowered to complete their missions as they saw fit without significant top-down pressure. The organisation created an environment participants labelled as ‘administratively permissive…no one is telling you exactly what to do…it’s broadly: “here’s some mission, go do it.” (2) The organisation’s adaptability was recognised as essential for enabling teams to respond to the unpredictable mission requirements and conditions that the SRTs faced. As one participant noted: “Everybody is here for the team when they go out the door, doing whatever is necessary for success. That’s a constant, but everyone adapts to make it happen.” (7)
Participants explained that SRTs shared a common, overarching purpose: providing the highest quality medical care to acutely ill and/or injured patients. But how that purpose would be manifested on each mission varied greatly. This unpredictable nature of SRT’s work, as one participant explained, “…it you’ve done one mission, then you’ve done one mission, and the next one will be different…” “…you know you could set up in a bunker, you could set up in an abandoned warehouse, who knows, but you better be ready…”

### Theme 1: mission variability

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<tr>
<th>Characteristic</th>
<th>Definition</th>
<th>Data excerpt</th>
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<tr>
<td>Variability</td>
<td>SRT are tasked to respond to unpredictable missions. Teams must continuously</td>
<td>“…it you’ve done one mission, then you’ve done one mission, and the next one will be different…”</td>
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<td>problem-solve and are persistently preparing and improving for the</td>
<td>“…you know you could set up in a bunker, you could set up in an abandoned warehouse, who knows, but</td>
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<td>unpredictable.</td>
<td>you better be ready…”</td>
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### Theme 2: shared values and principles

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<th>Characteristic</th>
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<tr>
<td>Humility</td>
<td>SRT members demonstrate self-awareness and personal insight beyond recognising</td>
<td>“…having a level of humility where you can trust other people. It’s easy because of that (humility), it’s easy to trust that the person next to me knows what they’re doing…”</td>
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<td>Healthy conflict</td>
<td>Friction resulting from constant interaction, diversity of opinion and experience, and universal motivation to achieve mission success.</td>
<td>“…there is something to be said about facilitating that friction that drives success and the problem solving. I don’t think you get that at other units…you don’t get the same experience or same interaction or dynamic…we make it a level playing field.”</td>
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<td>Failure not an option</td>
<td>Relentless pursuit of mission success regardless of challenges, circumstances or possibly risk to self.</td>
<td>“It’s like there is no scenario in which failure is even remotely in your thought…” “…we will do whatever it takes…”</td>
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<td>Sense of duty</td>
<td>Many SRT patients are well known to the team members with prior binding and social relation. Deep connection among team members to the mission and motivation to do whatever is takes. Underlying driving sense of duty and responsibility.</td>
<td>“There’s a passion for casualty care that borders on compulsive, it’s a deeply personal thing. I think a lot of the successful members and teams have either been through prior deployments with SRTs or have had significant catastrophic losses that they’ve taken almost personally, and I think that they identify the job as taking care of their tribe.”</td>
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### Theme 3: interpersonal and organisational trust

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<th>Characteristic</th>
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<td>Team trust</td>
<td>Interpersonal trust and faith in and among team members, known to each other and their families. Teams form lasting bonds through shared experience that transcend time and missions.</td>
<td>“I think it’s kind of like the Crucible that people go through, the gates which they were forced to do, so you know there’s like this rite of passage and everyone that’s gone through this and somehow proved their technical skill and their ability to adapt, or just frankly their ability to deal with pressure. I feel like that kind of bond is one facet of good team members, there’s like an instant trust.”</td>
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<td>Organisational trust</td>
<td>Empowers SRTs to solve problems on their own terms. Organisational trust generates high expectations of team and individual performance, driving a contagious dedication to success.</td>
<td>“…in the broadest way there is frankly permission from the parent (organization) to solve problems in a spectrum of ways that allows you to draw on your talent pool and experience…”</td>
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### Theme 4: highly effective teaming

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<td>Constant training</td>
<td>Teams and team members embrace a culture of constant self-directed training and improvement. This is not a requirement but a shared value among members.</td>
<td>“…this sort of perpetual kind of culture of improvement within the organization…” “…we prepare, and we prepare, and we prepare…”</td>
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<td>Continual interpersonal interaction</td>
<td>SRT members interact both formally and informally using verbal and non-verbal means regularly. Through clinical, research, training and social contexts, members continuously interact.</td>
<td>“…the cognitive agility is born out of a lot of time and thought; not to be confused with, oh we’ll just kind of figure it out in the moment…”</td>
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<td>Team as skillset, not roles</td>
<td>SRTs embrace diversity of skills, strengths and capabilities over traditional roles bound by professional expertise and responsibilities.</td>
<td>“We have expert teams or the ability to like build the team that you need or harness the team on the fly to tackle really you know, wicked problems.”</td>
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SRT, surgical resuscitation team.
participant explained, created ‘a different mindset’ for the team members:

People know something is gonna be crazy. That’s your constant. Whereas so much of [civilian] healthcare is removing unpredictability… we have this expectation that if you’ve done one mission, then you’ve done one mission, and the next one will be different. (8)

Preparing for this variability requires constant training. As one participant explained, “when the moment is upon you, you succeed by having done the preparation. You don’t rise to the occasion; you fall to your training.” (2) When comparing the SRT with other interprofessional healthcare teams they had worked on, participants speculated that SRTs’ training mindset was unique: “Too often regular medical units [and MRRTs] don’t have that focus” on regular training exercises. (6) Participants indicated that mission variability demands mastery of their basic clinical skills and ability to execute them as a team. They cautioned that SRTs’ ability to harness adaptability should not be equated with spontaneity:

The wrong interpretation of adaptability is that it means we don’t plan, we don’t train, because who knows what’s going to happen and we’re just gonna figure it out at the time. In my mind, the word adaptability means you have a very fundamental understanding of your problem set [the mission], you’re functionally excellent in your core tasks…and that platform allows you—in any environment—to kind of go this way or go that way. (2)

The heavy emphasis on routine team training permits the SRTs to embrace the uncertainty of their missions: “Nobody came here being the best at this job in the environments we work in…they just do it over and over and over again until it’s almost like second nature.” (13) In this way, the persistent variability of the missions SRTs face and the strong reliance on training to compensate for this was described as a fundamental requirement driving the importance of SRT and team member’s adaptability.

**Theme 2: shared values and principles**

Participants identified themselves as part of a team and organisation with exceptionally high standards and capabilities—that is, “The model for the organization is: no fail missions.” (4) In other words, participants realised that “failure” is just not an option and you’ll do everything you can do and some things that you never thought you could do” to achieve the mission. (8) As such, SRT membership was characterised by high levels of motivation and a service-oriented mindset. Participants recognised that the constant training and deployment cycles took a toll on them personally, noting a “moral injury associated with what we do.” (8) However, these costs were balanced not by monetary advantage, reward or recognition but by a deep sense of belonging. As one member described it, “we just have a deeper sense of duty…I felt like I was a part of the team that had invested in me.” (4)

Additionally, SRTs are based on a ‘flat organizational’ principle. Participants were aware that military rank and hierarchy existed for legal and administrative purposes, but the ‘flat organization’ principle destabilised these traditional structures to anchor leadership in expertise. As one participant described it, “I really think the flatness of the organization helps in that you’ll see people step up and [support an idea or colleague] and then enable it and there’s not a lot of concern about who gets the credit or concern with permission.” (7) This was described as promoting equality among members:

You may have a junior PA that is empowered to speak candidly against very senior trauma surgeons, which is not a dynamic you might see elsewhere. You may have an administrator that pushes back and says, “I don’t treat any patients, but I think your assessment or plan is garbage”. (7)

This equity across team members was a constant reminder that “if one person fails, everything may fall apart.” (9)

Overall, participants agreed that having the organisation and team share the same values and principles was what provided meaning, purpose and agency to SRTs to adapt as necessary for mission success.

**Theme 3: interpersonal and organisational trust**

Trust was described as the element binding SRTs together. At the individual and team levels, the participants indicated that trust between members was an essential foundational starting point for team cohesion. The SRT selection process provided a shared experience through which interpersonal trust was initiated. During selection, SRT candidates are rigorously vetted in high-fidelity simulation contexts. Being selected fostered trust between team members:

it’s kind of like the Crucible that people go through…there’s this rite of passage and everyone that’s gone through this has somehow proven their technical skill and ability to adapt, or just frankly their ability to deal with pressure. I feel like that common bond is one facet of good team members. There’s like an instant trust. (7)

Participants referred to the close proximity in which they lived during deployments and training as a further catalyst of trust. When SRTs are deployed, they share living quarters. The constant interaction infused the need to be authentic and to learn to live with each other’s flaws:

When you’re completely immersed with these people you don’t get a chance to hide your wort’s from them…or theirs from you, so problems that may rise to the surface just have to be confronted…We issue an extreme amount of grace to people and…at the end of the day, when you extend grace to someone in those hard times, those people appreciate it and will...
in turn extend it [grace] to you and that's what makes it a little different. (3)

Rigorous selection processes coupled with close living arrangements laid the foundation for the trust that SRT’s rely on.

**Theme 4: highly effective teaming**

When asked what working together—that is, teaming—looks like, participants described SRT-specific interactions that fostered teaming. As this participant elaborated,

> there’s a friendship within the [SRT] tribe that while we are all work friends… we have [SRT-related] conversations even in our leisure… if you get a group of us in a room together, we’re gonna talk about future events, current events, past events—all [SRT] related. Then how to improve the process and what we do. It just happens. It’s not forced. (6)

These constant interactions create bonds between SRT members as collaborators and often as friends. Team members had a familiarity that extended between specialties and professions, including both medical and non-medical personnel, another advantage afforded by the ‘flat organization’ principle. The informal interactions were also used deliberately for cross-training—that is, where team members taught each other skills across professional repertoires—which supported “some degree of confidence across the board [and] you really appreciate what the other person is capable of doing.” (9) Cross-training was described as essential for enabling the swapping of roles or tasks when necessary. For instance,

> [a] service, member was undergoing multiple rounds of CPR and the gentleman performing CPR, which was some of the finest CPR I’ve ever seen, was our radio guy. Who—by definition—is not medical. It’s how we train him up. But his ability to engage instead of back away, frees the hands of others. (3)

Deep familiarity among members enabled them to perform critical roles when needed, even outside their typical scope of practice. In general, participants explained that SRT teaming hinged on having team members who understood the importance of making division of labour flexible through cross-training.

**DISCUSSION**

In this study, we examined uniquely purpose-built military MRRTs. Similar to civilian MRRTs, the military SRTs were created to provide high-quality, timely stabilisation of acutely ill and injured patients, and to facilitate the efficient movement of patients within the healthcare system. The SRTs, composed of medical specialties found in various civilian MRRT models, function in both deliberately formed teams and in ad-hoc fashion, often with little preparation or member familiarity. When not in a mission, team members practice in both civilian and military healthcare settings giving them a truly unique perspective of team function and performance in both contexts. However, unlike their civilian colleagues, SRTs harness a unique core function and underpinning principles to perform their work outside the walls of the hospital, often in austere contexts. We identified the characteristic of adaptability as the core function of these teams and of the larger supporting organisation. The consistent variability and unpredictability of mission and patient need drive the demand for adaptability of SRTs. To fulfill this demand, SRTs anchor their teaming on shared values and principles and a deeply ingrained sense of trust to realise team and organisational cohesion. This enables SRTs to employ whatever actions are necessary to accomplish their mission, knowing that the larger organisation will support them.

The characteristics of the SRTs reported in this study align with themes identified in the existing literature of interprofessional teams across professions. As in our research, Eduardo Salas and colleagues identified adaptability as one of the essential components of successful teamwork. According to Salas, adaptability requires that team members maintain a common situational awareness, the ability to alter team member roles and tasks, and provide mutual support in complex and uncertain conditions. Our study clearly demonstrates how SRTs build and harness a culture of adaptability to meet the mission uncertainty. As described, SRTs can be employed in both deliberate and ad hoc teams. The importance of adaptability for ad hoc medical teams facing crisis events, particularly with changes in team membership that frequently occur in both civilian MRRTs and SRTs due to shifting operational requirements, has been well described in medical teams by Bedwell et al and Burtscher et al. Regardless of the context, from prehospital care to augmenting existing medical facilities during crisis events, SRT members identified adaptability as the most important capability of the team and its members, underpinned by interpersonal and organisation trust.

The significance of trust is well described in the literature of teams. Salas described a culture of mutual trust as an essential coordinating mechanism for effective teams, enabling members to function interdependently. SRT members routinely identified the importance of mutual trust between members and teams. Contemporary discussions of trust in healthcare education often focus on the concept of entrustability, or trust between supervisor and learners to safely perform a medical treatment or procedure. However, the trust described in this study is different from entrustability in that it seems to arise from a deeper interpersonal level beyond simple task performance or certifications. The trust between members of SRTs is shaped by a shared rigorous training foundation and experience. The members described trust arising from their shared training experience as key to preserving team function in the setting of fluid team membership, challenging environments and in the interchangeability of member roles. This deeper trust enables team function even when members are unfamiliar with each other, a risk identified in civilian ad-hoc MRRTs by Leach and Mayo.
One of the most important findings of this study is the intimate connection of the SRTs to a larger organisation. Members consistently highlighted the unique importance of trust between the team and the higher organisation, and a permissive organisational environment that empowered SRTs to accomplish the mission, as the team determines most appropriate. Interestingly, few studies have evaluated the significance of MRRTs’ relationship to a larger healthcare organisation. In a scoping review of trust in healthcare teams, higher level trust between civilian medical teams and their organisation was primarily confined to the organisational provision of protocols to guide team practice, supporting information technology and availability of institution-specific knowledge. These findings suggest a limited understanding of the relationship between MRRTs and their healthcare organisation. In a recent commentary on the topic of high reliability in healthcare organisations, Myers and Suttcliffe suggest that a complex relationship between individuals, teams and organisations is the true foundation of resilient performance in healthcare: the ability to handle stress and unexpected crisis with a commitment to learning to enable future performance. The data presented herein suggest the SRTs embody many examples of the highly resilient teams of a larger high reliability organisation. The mutual trust described between members, SRT teams and the larger organisation is a key characteristic of high reliability organisations as described by Baker et al. Thus, our findings may provide an example of a unique high-reliability military MRRT model with a need for future study to determine the significance of the team–organisation relationship and the function of the cycle of positive reinforcement between individual teams, their members and the larger organisation.

In summary, as civilian MRRTs face unpredictable circumstances in the changing healthcare landscape, SRTs offer valuable insights for consideration. First, SRT team member roles are not defined by silos of professional specialisation. Instead, mission variability drives adaptability. The situation—not professional scope of practice policies—dictates how the team distributes the work necessary to accomplish the goal. Second, in SRTs, a two-pronged approach to trust drives resilient teaming. Interpersonal and organisation trust are intertwined in a manner that allows team members to autonomously rearrange their skills and expertise in real time. Extensive cross-training facilitates immediate on-demand teaming and enhances the development of this two-pronged approach to trust. Finally, the SRT team’s principles and values are reinforced by an organisation that fosters and perpetuates a cycle of positive reinforcement, allowing SRTs to thrive regardless of setting.

We acknowledge that the insights and future research suggestions we offer may seem unattainable for civilian hospitals to enact. In some respects, direct transferability of the SRT model to civilian MRRT settings may not be applicable. For instance, SRTs are likely to receive substantially more training than typical civilian MRRT. SRTs must also treat acute injuries and illnesses in austere and combat environments that may not seem to be directly correlated to those experienced in civilian settings. Additionally, SRTs can be deployed for extended periods in austere settings. These differences are clear; however, there are several points of convergence. Civilian MRRTs share similar medical resources and team structures as SRTs. For instance, civilian MRRTs often have access to the same high-fidelity simulation resources for team and individual training, that SRTs use. Both civilian MRRTs and SRTs can use formal and informal time together during the work day to foster meaningful interpersonal interactions and therefore establish the interpersonal trust that was identified as essential in SRTs. Furthermore, similar to their military counterparts, civilian MRRTs are also constituted as small interprofessional teams facing unplanned critical illness and injury, with time-sensitive pressures in diagnosis and treatment, and the requirement to effectively operate within a larger system for mission success. These factors suggest that SRTs and civilian MRRTs share more similarities than differences that can be leveraged for team improvement in the context of rapid response situations.

**Limitations**

While the focus of this study was an initial investigation of the characteristics of SRTs, a robust exploration of their limitations was not pursued and will require further study. For instance, the small size of SRTs make them vulnerable “because there’s no redundancy”. (9) Furthermore, to maintain a high state of readiness, SRTs train with high-frequency in addition to their clinical responsibilities. This places high demands on institutions to provide paid time for this continuing professional development training and on team members’ well-being. Future studies, possibly including observations of SRT training, might offer further insights into how civilian organisations could offer similar dedicated training time to MRRT members. Additional inquiry should also expand sampling to include individuals beyond the actual SRT members (eg, family, civilian colleagues) to explore issues such as work–life balance, burnout, family resilience and balancing clinical practice with operational/ training needs. Each of these issues has parallel concerns in civilian teams, making the SRT a valuable model to develop insights for other types of small medical teams. Finally, as the first investigation of these unique military MRRTs, we did not endeavour to perform a direct comparison to civilian MRRTs beyond that available in the MRRT literature. Thus, our findings are unique to SRTs but derived from study participants who practice in both civilian and military settings routinely. This initial study represents the first in a programme of research into both military and civilian MRRTs and we look forward to future studies addressing these limitations.

**CONCLUSION**

Civilian and military MRRTs face time-sensitive medical crisis events that must be effectively managed to mitigate patient harm. The military SRT offers an example of what highly functional MRRTs may look like, with a core function of adaptability to meet unpredictable mission requirements. Bonded to each other and to their larger organisation through mutual trust and shared values and...
principles, the SRTs embrace a unique teaming approach that allows them to act nimblly regardless of the context for the good of their patients. Therefore, the characteristics and function of SRTs may offer vital insights for other MRRTs responding to the needs of a changing societal and healthcare landscape.

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