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Comprehensive Healthcare Simulation: Mobile Medical Simulation

Springer

Comprehensive Healthcare Simulation

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Preface

Medical science is advancing at an ever accelerating pace. New knowledge, new medications, and new diagnostic and therapeutic procedures become available to healthcare practitioners on almost a daily basis. Because of a traditional long time-frame between new medical discoveries and the application of those discoveries to patient care, both federal and state governments and industry have programs in place to reduce the "bench-to-bedside" time lag in order to bring new knowledge, products, and procedures to direct patient care faster. These programs will increase the amount of new information and procedures available for patient care and will speed up the pace of these new materials coming to the market.

The United States faces shortages of doctors, mid-level providers, nurses, pharmacists, healthcare technicians, and other healthcare personnel. This shortage is most acute in rural and frontier areas of the United States. In several states with large rural areas, large segments of those states have been designated as health provider shortage areas. These shortages are predicted to persist and worsen over the next several years [1].

These trends have created a unique set of problems for healthcare practitioners in rural and frontier areas. For instance, in many rural and frontier areas, Emergency Medical Services (EMS) providers may be the first and only medically trained personnel available to patients for many miles and minutes. In several states, trial programs involving EMS providers performing tasks such as home visits, to monitor the status of homebound patients with severe chronic illnesses, and medication availability and compliance checks for select patient populations have shown beneficial outcomes for patients [2]. These tasks are performed in addition to the traditional stabilization and transfer duties of EMS providers. Because of the ongoing healthcare personnel shortage, programs which expand the scope of practice of available medical personnel, especially in rural and frontier areas of the United States, in order to help minimize the impact of the healthcare personnel shortage will likely increase.

In addition to maintaining their knowledge, skills, and proficiencies associated with their traditional tasks, healthcare personnel practicing in shortage areas will be asked to obtain new knowledge and master new skills. Travel to distant sites to attend continuing educational events can remove scarce key personnel from practice sites where their skills are needed to help manage medical problems and emergencies. In addition, since virtually all healthcare is delivered by a team, often in a

unique clinical context, team training in the team's environment, managing simulated frequently encountered (or less frequent but critical) medical conditions, is recognized as optimal training. Several studies have shown that training a team as a unit in their operating environment (or a high-fidelity facsimile venue) improves the performance of that team [3]. Because patients have to transition between various venues to achieve care (e.g., home to ambulance to emergency department to hospital room), and since medical transitions are associated with high levels of patient morbidity and mortality, it is essential to train medical teams to work through communications and other issues associated with a patient transition [4].

For these and other reasons, mobile medical simulation programs using state-of-the art, high-fidelity mannequins and other equipment have been developed. These programs allow the use of high technology simulation training equipment and techniques for team training in the providers' operating environment and minimize the need for members of the team to travel to distant sites for continuing education and training. These mobile simulation programs vary in scope and complexity from "mailing" a mannequin or another piece of simulation training equipment to a training site to fully equipped mobile simulation facilities complete with simulation mannequins, simulated healthcare venues, recording facilities for debriefing and performance review, and supporting technical staff to provide training and operate equipment [5].

In order to foster the growth, development, and effective use of mobile medical simulation training, the production team of this book hopes to provide concise and useful information both to those involved in designing mobile simulation programs and processes and to those who design, conduct, and assess the effectiveness of training sessions for providers who care for patients. The team has recruited authors with real-world experience in all areas of mobile healthcare simulation training, and it is our sincere hope that the information provided in this book will be useful for administrators and educators as they provide mobile medical simulation training.

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Part I

Mobile Simulation Program Development

Staff and Equipment

1

Benjamin King

"Simulation is a social experience"
    Dr. Zach Sturges, Simulation Medical Director, Best Practice Medicine

Key Points
1. Mobile simulation teams must be highly knowledgeable in a broad range of technical, pedagogical, and clinical theory, methods, models, and applications.
2. Recognize that mobile simulation environments are considerably different than brick and mortar operations.
3. Intentional recruiting, training, retaining, and succession planning will lead to program success and sustainability.
4. No amount of technology, money, or resources can compensate for the wrong humans beings in simulation.

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Definition of Terms
- High Fidelity Simulation (HFS): the use of lifelike realism capable simulators to create immersive learning environments for clinical education.
- Mobile simulation: simulation conducted in a transient environment, not in a fixed location. This can be either in a mobile lab (truck, bus, van, etc.) or in situ, within a facility or clinical care setting (emergency department, ambulance, and critical access hospital).
- Simulationists: clinical, pedagogical, and technical experts in simulation.
- Static simulations: simulations that occur in a brick and mortar operation and rarely, if ever, are performed outside an established simulation education space.
- Pedagogy: derived from the Greek word, paidagogos. (meaning "teaching") [1].
- Mobile lab:: a catchall description of a physical space that can be moved for the purposes of simulation. Often, these labs are described by the type of vehicle, such as a bus, van, truck, or trailer. We recommend using the terminology mobile lab or mobile learning lab, as it describes the purpose of the vehicle rather than the vehicle itself.
- Simulation team leaders (STLs): specialized simulationists with expertise in simulation education and operations.
- Simulation in Motion Montana (SIM-MT), Inc.: a Montana-based, volunteer led, nonprofit organization (www.mobilesimmontana.org).
- Best Practice Medicine LLC (BPM): a clinician-owned and founded medical education company based in Montana. BPM is the project partner of SIM-MT, responsible for the daily operations of SIM-MT (www.bestpracticemedicine.com).

Find Your Humans

Simulation is fundamentally a social experience. The greatest asset of any simulation program is its people. This is especially true for mobile simulation, which is inherently more challenging than static simulation centers. To be successful, mobile simulation leaders must focus on four human objectives while building, leading, or growing a team:

1. Recruiting
2. Team training
3. Retention
4. Succession planning

Recruiting

As with establishing clinical objectives, the first practical step in recruiting mobile simulationists is an internal needs and gap assessment. Leaders must align the

recruiting objectives with mission, vision, and purpose of the mobile simulation program. For example, a new mobile program focused on providing training for rural nursing education with in situ simulations will likely have different staffing needs than one whose mission is to serve urban hospital systems using a mobile learning lab (truck, van, bus). It is essential that simulation leadership have a clear understanding of expectations and mutually agreed-upon measures of programmatic success.

The good news is, as an emerging subspecialty of medicine, simulation tends to attract early adopters who are often highly motivated and lifelong learners. The bad news is that mobile simulation requires such a broad, multidimensional scope of knowledge and skill set, it may feel as if you are searching for a unicorn. This is a major difference between static simulation and mobile simulation. Typically, brick and mortar simulation centers enjoy a larger budget, staff, and more controlled and predictable learning environments. This leads to a greater degree of skill, knowledge segregation, and specialization. As a profession, these larger static centers and their staffing models dominate simulation theory and practice. The Society for Simulation in Healthcare (SSH) [2] certification and accreditation committees reflect this in the certifications of Certified Healthcare Simulation Educators (CHSE) and Certified Healthcare Simulation Operations Specialists (CHOS) [3]. Mobile simulation operations rarely have the budget, space, or capability of narrowly defined roles for simulationists. Recruiting efforts must focus on people capable of more than a specific task. Mobile simulationists need to be excellent educators (CHSE) and exceptional operators (CHOS).

It is helpful to consider your recruitment efforts through the lenses of small team dynamics. Within SIM-MT, after conducting our needs and gap assessments, and extensive evaluation of the programs mission, vision, and purpose, we chose to consider our mobile simulation teams as air ambulance clinical teams. We found a number of useful parallels from our experience in air medical transport and mobile simulation. Based on the leadership's relevant experience, mobile simulation programs should consider past high-performing professional teams and adapt the behaviors and characteristics that led to their program success into the recruiting of the mobile team.

Mobile simulation programs should establish two sets of criteria for simulationists before beginning recruitment efforts. The first criterion sets the ideal qualifications for the mobile simulation program (Table 1.1). The second criterion establishes the minimum qualifications acceptable for candidates (Table 1.2). The minimum criteria are directly correlated to the training and education available to new members of a mobile simulation team. The greater and more robust the onboarding and initial training program, the lower the initial requirements may be. In addition, leaders should be willing to consider exceptions to the minimum requirements in the initial growth of a mobile program. In our experience, we found occasionally our minimum requirements eliminated excellent candidates that displayed unusual aptitude and motivation to grow.

Table 1.1 The simulation unicorn: "ideal" core background, traits, behaviors, and characteristics

15 years of clinical experience relevant to the mobile simulation mission
In at least two different subspecialties of medicine
10 years of clinical multidiscipline education experience
5 years as peer trainer, field training officer, nurse educator, etc.
Specific training and mentorship in adult pedagogy
Committed to technical hobbies/interests outside of medicine
Welding
Music, song writing
Photography
Cooking
Travel
Gaming
Etc.
Previous career(s) outside of medicine
Examples of high flexibility, exceptional critical thinking, and leadership experience
Stellar professional and personal reputation and well connected in the existing clinical and education community
Experience with complex technology
Implementation of electronic health record systems
Data management responsibilities
Quality assurance/peer review responsibilities

Table 1.2 The simulation unicorn: "minimum" core background, traits, behaviors, and characteristics

5 years clinical experience relevant to the mobile simulation mission
2 years education experience
Demonstrated technical aptitude
Willingness to take a risk
Recent examples of new learning. Are they coachable and trainable?
Above average maturity and interpersonal skills

Lessons Learned

The classic paradigm "those who can't do, teach" regrettably has some merit. As a general rule, the humans you are looking for are overemployed and highly sought after. Beware of the applicant who is not currently employed in medicine or whose primary motivation appears to be a departure from a current position. Mobile simulation programs get to make a first impression once. If you hire a candidate with a poor reputation as a clinician or educator, the entire program will assume that reputation in the eyes of regional learners. This can be catastrophic.

In recruiting a team, well-developed job descriptions are an important first step for screening the best candidates and set clear expectations for potential staff (Table 1.3). Descriptions need to reflect program priorities and a loose description of qualifications. This is especially true in new mobile simulation programs. Internally, a program needs a minimum requirements list, but as mentioned leaders must exercise their best judgment for candidates that may not quite meet the entry requirements but may be an exceptional fit in other areas on the team.

Table 1.3 Example job descriptions for Simulation Team Leader (STL)

Job description	
Position:	STL, Best Practice Medicine
Classification:	Full-time
Reports to:	Operations Director
Locations:	Bozeman, Kalispell, Missoula, Havre, Glasgow

Duties and responsibilities:

Under supervision of the Operations Director, STL is generally responsible to the program leadership for the day-to-day operation of the MobileSim vehicle, individual simulation events/sessions, and the assigned simulation specialists. The general duties and responsibilities of the STL include:

Administrative duties

Immediate supervision and direction of the simulation specialists to include simulation staff scheduling and coordination, administering probation and annual formal evaluations, and maintaining program policies and standards in accordance with the SIM-MT policies and procedures.

Regularly evaluate simulation specialists in vehicle operations, simulation system operations, and teaching performance and provide constructive feedback to improve the simulation specialist's knowledge and performance.

Develop and maintain relationships with regional clients and serve as primary point of contact for regional client's simulation program communications.

Meet with clients to develop client needs assessment and individual simulation event objectives.

Implement regional program marketing campaigns and conduct individual regional marketing events as directed.

Participate in professional and educational activities to maintain professional competencies and current knowledge base.

Other duties as assigned.

Support duties

Oversee and perform vehicle, systems, and equipment setup, breakdown, and storage.

Oversee and perform routine vehicle maintenance activities

Oversee and perform maintenance and cleaning of manikin, systems, and hardware.

Troubleshoot and report system and manikin malfunctions, damage, and errors.

Participate in simulation program and curriculum development activities.

Obtain Class B CDL and function as the primary sim truck driver.

Other support duties as assigned.

Education duties

Schedule, attend, and conduct simulation events/sessions to meet client objectives.

Supports learners to maintain a safe learning environment.

Provide student, client, and system verbal and formal debriefing/feedback as required by program policies.

Provide and implement solutions to enhance the delivery of simulation-based education through technological developments and creation of artifacts, such as moulage.

Assist with the piloting and delivery of simulation-based training and other educational activities undertaken during the simulation project, commissioning, and operational phases.

Other education duties as assigned.

Preferred qualifications

5–10 years clinical practice experience

2–5 years clinical educational experience

3–5 years leadership experience

Job description
Multidiscipline instructor ratings
Prehospital and hospital-based experience
Experience with Google-based technology
Strong technical knowledge and experience within project management

Lessons Learned
*   SIM-MT periodically receives applications for positions on the simulation teams from underqualified candidates. In our experience, candidates who understand the desired minimum requirements and who, despite not meeting the requirements, apply anyway demonstrate a self-starter attitude that can be an excellent fit for the team. This is not always the case, but we give these applicants serious consideration.*

Your mobile simulation program's reputation and success is directly linked to the credibility and authenticity of your least experienced team member.

Where Are Your Humans?

With the recruiting parameters established, the search for the mobile team begins. Where do you look for these highly specialized people? It is helpful to consider that the candidates you are recruiting are likely not actively looking for a new job and are typically overemployed. That is, they are working multiple jobs and/or have substantial "other duties as assigned" by their primary employer. These are the people you are recruiting. Using the criteria list developed for recruiting requirements, simulation leaders should consider where the specific candidates will be reached with the recruiting information. By customizing this, programs will have a higher rate of qualified applications and reduce the time required to evaluate those that are not a good fit for the program. For SIM-MT criteria, we successfully advertised in the following ways:

- Professional networks/organizations
    - EMS and nursing associations
    - State listservers – DPHHS
    - State hospital associations
- Social networks of colleagues and professional contacts
- Word of mouth
- Social media, specifically Facebook
- Website standard application form
- Stakeholders in mobile simulation

Lessons Learned:
*   High-performing clinicians and educators are a sought-after asset for nearly every facet of healthcare. To successfully recruit them to your mobile simulation, leaders need a compelling story as to why mobile simulation is the place for your candidate to continue*

their career. We found that nurses with 15–20 years of clinical practice and paramedics with 10–15 years of clinical practice were the most likely to be interested in a nonpatient career path that will allow them to continue their passion for patient care on a large scale.

Interviewing

If an applicant cannot connect to your Wi-Fi, don't bother.

The art of interviewing is well researched and documented. Leaders not trained or those unfamiliar with best practices in interviewing will do well to become familiar with any number of resources available on this topic. The specifics of interviewing candidates for mobile simulation are similar to the principals of recruitment. The primary objective of the interview is to assess the candidate's alignment and potential to meet the mobile programs specific mission, vision, and purpose. In addition, the small team dynamics of mobile simulation combined with the broad scope of knowledge required for interviewing teams should deeply consider the personality and fit of every candidate with current team members. Building a mobile simulation team is similar to building a championship sports team. Leaders need to consider not just the individual strengths and weaknesses, but how well each member of the team will complement the roster and contribute to the overall success of the program.

Best Practice Medicine conducts interviews in two phases. The first phase is a phone interview with a single, senior member of our leadership team. We recommend this member be directly connected to the performance of the mobile team and intimately familiar with the recruiting goals. The purpose of the phone interview is to act as a gate keeper, to quickly identify unqualified candidates or invite the applicant to an in-person team interview.

The value of an in-person interview cannot be overestimated. This is especially true in programs where mobile simulation staff may be working remotely or live many hours away. The composition of the interview team is an important consideration for leaders. While many resources also exist on this subject, practically, the interview team should have a clear understanding of the kind of candidate the program wishes to recruit and include a standardized set of questions, basic training on interview techniques, and the ability to deviate from the questions as necessary to understand the candidate as completely as possible. A potential peer of the candidate should participate in interviews. By empowering your small mobile teams to influence the hiring of their colleagues, your team is playing an active role in the creation of the team culture, which is the building block of all team dynamics and behaviors.

Requiring candidates to teach a short topic to the interview team is a powerful tool to assess a future educator. Much like simulation, the process of presenting information in a brief small group setting can often expose truths about a person otherwise well concealed. When evaluating a presentation, contemplate on the following:

General:
- How nervous are they?
- How prepared is the content?
- Did you learn something?

Warning signs:
- I, me, mine statements in teaching
- War stories
- Ego

Positive signs:
- Verbal assessment of the learners (interviewers)
- Content that reflects the stated objectives (defined in the phone interview)
- Humility and self-reflection
- Confident, calm, and cheerful
- Humor
- Curiosity and inquiry

Lastly, it is important to remember that applicants are interviewing the program and the team just as they are being interviewed. Be prepared for tough questions and insist that the interview teams share a consistent, positive vision for the project and the candidates' potential role in it. Avoid scaring good candidates off with poorly developed plans for the overall project.

> *Lessons Learned: Competitive Pay*
> *Because your candidates are likely overemployed, competing with their current pay can be a challenge. It's best to consider the entirety of benefits of working for a mobile simulation team when making an offer. It is highly unlikely that what you can pay a simulationist will be competitive with clinical pay, especially when considering differentials (i.e., night shifts). It is more accurate to assess the compensation of other high-performing education professions in the programs regions. Universities and technical schools are good market rate benchmarks. A flexible schedule, defined autonomy, meaningful work, and paid time off are all force multipliers for attracting the right staff.*

Recruiting the right people to your mobile simulation team is a key factor in the success of your program. It is also directly linked with other important factors of successful mobile simulation programs such as a clear mission, an inspiring vision, and an achievable purpose. The most advanced simulation systems in the world will never be able to compensate for a poorly recruited team.

> *Lessons Learned: Full-Time or Part-Time Mobile Simulation Teams?*
> *Many factors must be considered in the decision to hire a few full-time mobile simulationists or a larger cohort of part-time people. The practice of simulation requires regular commitment. This can be achieved in specific circumstances with part-time staff, but the*

logistics challenges alone can be substantial. Part-time staff work best in the mobile simulation environment when regularly engaged in mobile simulation and when partnered with full-time simulationists.

Train Your Team

Train your team well enough so they can leave.
Treat them well enough so they want to stay.
Sir Richard Branson

Currently, there are not any known formal mobile simulation-specific trainings or certifications. A small portion of the modestly growing HFS subspecialty of medicine, mobile simulation training is highly program specific with few guidelines for reference. Best practices in simulation pedagogy, theory, and application are well established. They may however need to be significantly modified to fit the specific operational parameters of a mobile program. Chances are very high that new team members to your organization will simultaneously be new to high-fidelity and mobile simulations. Initial and continuing education programs for mobile simulation staff should be well constructed and regularly updated.

There are four distinct phases of training for mobile simulation staff:

1. Initial immersion training
2. Apprentice learning
3. Continuing education and quality improvement
4. Professional certifications

If your mobile program is getting started, the initial training is well done in a group training setting. One of the challenges with mobile simulation program growth is that staff will likely be hired as individuals rather than as large cohorts, making regular academy style training significantly more expensive and less effective. We will address best practices in both the large cohort and individual simulation academy models.

Large Cohort Academy

Based on the mission, vision, and purpose of the program, leaders should construct a standardized initial academy curriculum to best meet the average experience level of the learners. Best practices in conducting learner needs and gap assessments are addressed in this book. They are applicable for both external and internal clients and learners. Table 1.4 is an example of the Best Practice Medicine large cohort simulation academy.

Table 1.5   Example of individual training academy with learning objectives

**Best Practice Medicine Simulation Apprentice
Program**

Gap and needs assessment:
The assigned mentor will appraise the learners experience with simulation and adult learning theory. This inventory will include the following;

- Review of resume and interview notes
- Inquiry of the learner in self-identified areas of simulation strengths and weaknesses
- Discover the learner's working knowledge of simulation methods and models
- Elicit learner's experience in curriculum development and objective exploration
- Determine the preferred method of debriefing and depth of knowledge

Apprentice		Initials		Start Date	
Mentor		Initials		Start Date	

Apprentice curriculum.

Instructions: In addition to the standardized curriculum listed, the apprentice and the mentor will identify additional areas of learning and mentoring based on the gap and needs analysis beyond the core curriculum. This additional curriculum will include a minimum of 5 objectives
1.

2.

3.

4.

5.

Instructions: The mentor and the apprentice will each initial under their assigned columns when the stated objectives and actions are completed. The mentor does not need to be the sole signer; other qualified mentors may sign when appropriate. Qualified mentors include all STL's senior simulation staff and members of the leadership team.

Introductions and Program History 2–3 hours:
The learner will define the organizational structure of Best Practice Medicine and articulate the specific organizational structure of SIM-MT. The learner will describe the opportunity wheel and practice its use throughout the academy. In addition, the learner will acquire a working knowledge of the origins of Best Practice Medicine, SIM-MT Inc., the board of directors, and the history of the simulation project to date.

Actions	Apprentice	Mentor	Date
Initial orientation to program history			
Articulates history accurately internally			
Demonstrates public facing knowledge of program history			

Safety and Risk Mitigation 1–1.5 hours:
Learners will review all safety and risk mitigation procedures and policies found in the procedures manual and employee handbook. Learners will be oriented to the mobile lab and will identify key risk and approved methods for mitigation.

Table 1.5 (continued)

Actions	Apprentice	Mentor	Date
Orientation to safety and risk mitigation procedures			
Orientation to lab safety and risk mitigation			
Demonstrates knowledge of safety procedures and practices			

The Simulation Learner's Experience 2–2.5 hours:
The learner will recognize the importance of the pre-briefing. Specifically, the learner will identify the key components of psychological safety, the basis assumption, fiction contract, vegas clause, instructor code of conduct and purpose of the pre-briefing. In addition, the learner will be oriented to the expectations of simulation educators and learners.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Introduction to Debriefing 2–3 hours:
The learner will describe four current debriefing models and compare them. The learner will practice debriefing for good judgment and, plus/delta methods of debriefing, describe the benefits of these methods and their use in mobile simulation.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Course Development and Learning Objective 4–6 hours:
The learner will review the BPM methods, models, and procedures of course development. The learner will articulate the key BPM philosophies and purpose of the high–fidelity learning experience process. The learner will demonstrate a working knowledge of SMART objectives and interpret Blooms taxonomy in both the cognitive and psychomotor domains. The learner will identify the workflow process of course development and learning objectives, from the initial client contact to the simulation learners evaluation of the experience.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Mobile Simulation Systems 8–16 hours:
The learner will acquire a novice working knowledge of all essential mobile simulation systems. This is an initial exposure, and with the conclusion the learner will demonstrate a basic practical understanding of the systems in the mobile simulation lab. Further, advanced training will be necessary to achieve mastery of the systems. The mobile simulation lab setup checklist located on the onboard iPad will serve as a guide for the systems orientations

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Difficult Debriefings 2–3 hours:
The learner will define difficult debriefing and their contributing factors. The learner will articulate human factors that influence difficulty debriefers, from the perspective of the simulation learner and the debriefer. The learner will translate the best practices in good judgment and plus/delta methods, to difficult debriefings and psychological safety.

Table 1.5 (continued)

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Simulator Orientation 8–16 hours:
The learner will apply established best practice in the utilization of each simulator in the mobile sim lab. The learner will articulate resources available for troubleshooting and continuing education. The learner will power on and operate each simulators specific functions and describe the purpose of each major function of both the simulation hardware and software

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Confederates and Standardized Patients 0.5–1 hour:
The learner will show a working knowledge of best practices as defined by the procedures of the use of confederates and standardized patients in the mobile simulation. The learner will articulate the common pitfalls of confederates and standardized patients and the associated remedies.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Evaluations and Feedback 0.5–1 hour:
The learner will explain the purpose of 100% student evaluation and feedback review in the mobile simulation environment. The learner will identify the steps required to solicit meaningful feedback and its role in ongoing program improvement.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Debriefing Quality Improvement 2–5 hours:
The learner will participate in a recorded debriefing and review the debriefing CQI procedure. The learner will repeat the CQI debriefing expectations and locate examples of other recorded debriefings. Using the debriefing CQI tool, the learner will provide peer review on ten previously recorded CQI debriefs and will compare the tool to the existing reviews of those debriefings.

Actions	Apprentice	Mentor	Date
Orientation to the stated objectives			
Demonstration of the stated objectives			
Capable of meeting the objectives without assistance			

Apprentice Event Tracking

In the first year the apprentice will participate as an educator in a minimum of 30 events:

- 5 pre–hospital BLS events
- 5 prehospital ALS events
- 10 hospital events
- 2 conference events
- 5 promotional events
- 3 company-wide trainings

Pre–hospital BLS events (5)

Table 1.5 (continued)

Location	Hours	Mentor	Date

Pre–hospital ALS events (5)

Location	Hours	Mentor	Date

Hospital events (10)

Location	Hours	Mentor	Date

Conferences (2)

Location	Hours	Mentor	Date

BPM–sponsored internal trainings (3)

Location	Hours	Mentor	Date

Promotional events (5)

Location	Hours	Mentor	Date

Company-wide trainings (3)

Location	Hours	Mentor	Date

Apprentice		Initials		Completion Date	
Mentor		Initials		Completion Date	

The mobile environment can easily lead to communication challenges across the organization. A primary purpose of regular trainings is the communication of lessons learned and solutions needed for high-performance simulations. In the case of SIM-MT, three simulation teams separated by hundreds of miles face the substantial obstacle of communicating learning experiences across the entire mobile team. To address this, the operations director hosts a weekly meeting run by the STLs, where the mobile teams share and work together to address the problems or successes of the previous week.

Mobile simulation teams regularly face unique and time-sensitive challenges for which they must create solutions with limited resources and time. As a real-life example, a tetherless simulator internal air compressor overheats and fails in the middle of the day of simulation. No backup simulator is available in the mobile lab. The mobile team must be trained to quickly identify the primary problem, empowered to source a work around solution, and expected to keep the learner's experience central at all times. Leaders must consider the specific categories of challenges their mobile teams will face during development of the recruiting, initial training, and continuing education plan.

Leaders should consider other professional high-performance teams and their lifelong learning habits. However, it is important to only adopt the best practices that fit the operational tempo, team demographic, and mission of your mobile sim program. Too often, programs will "copy and paste" another organizations educational plans, policies, and procedures, without assessing the specific implications and applications on their programs intricacies.

SIM-MT conducts large-scale continuing education retreats following the initial simulation academy on a triennial basis (Table 1.6). These two- to three-day events are invaluable to the professional development of individual sim team members and the overall cohesion and success of the program. They are mandatory for all mobile sim staff, are planned a year in advance, and have living agendas. Mobile simulation leaders must prioritize ongoing team-oriented training and learning opportunities in budgets and operational planning. An essential component of these retreats is the participation of mobile simulation staff in a simulation experience. If not experiencing simulations from a leaners perspective, intentional educators can quickly lose the ability to empathize with a learner's experience. By constructing a program where mobile simulation staff are required to regularly participate as learners in simulation, leaders will encourage educators to remain humble, understanding, and connected to their learners. Lastly, mobile simulation teams, like many small high-performance teams, benefit from team building and community experiences together. The importance of a group meal, event, or other nonclinical interpersonal interactions is not to be undervalued.

Quality improvement in simulation is required for the same reasons it is in clinical medicine. Stakeholders in mobile simulation need to see that the program is reflective and proactive in its growth, and value is added to the clients and learners. A purposefully designed quality improvement program will increase mobile sim staff confidence, competence, and sense of self. Of all the skills, mobile simulationists must master the art of debriefing, which is likely the most anxiety producing and least

Table 1.6 Example of triennial meeting agenda

Day 0	
19:00–22:00	STL Meeting
Day 1	
08:00–08:15	Welcoming by the Hi-Line Team and Agendas
08:15–09:00	SIM-OPS Conference Highlights
09:00–10:00	Advanced Concepts in Simulation Education
10:15–11:15	Lessons Learned Roundtable and Debrief
11:30–12:30	Operations Safety Culture
12:30–13:00	Lunch On-site
13:00–15:00	Central and Western Team Simulation and Debrief
	On-deck team, Technology Training Stations
	1. Hubspot
	2. ASANA
	3. Travel vouchers and T-sheets
15:15–16:00	Moulage Helpful Tips, Hints, and Tricks
16:00–18:00	Business Summary
18:00	Team Dinner
Day 3	
08:00–08:30	Buddy to Boss, Book Review
08:30–09:00	Culture by Design, Book Review
10:00–11:00	Sexual Harassment Presentation
11:00–12:00	Customer Relationship and Difficult Clients
12:15–12:45	Lunch On-site
12:45–15:30	Teambuilding Exercise
15:30–16:30	Messaging, Social media, and Strategy
16:30–17:00	Closing Remarks
17:00	Team Dinner
19:00–20:30	STL and Drivers Bonus Round
	Tire Chains
	Lab Standards
	Weather Standards
	Knowledge Sharing

common skill on your team. The continuous quality improvement (CQI) program at SIM-MT is designed from the ground up around debriefing, based on our team's feedback and gap analysis. In our program, every simulationist conducting a debriefing is recorded on video once a month. This film is sent to a review team, comprised of peers, leaders, and the simulation medical director. We have built a debriefing CQI tool based on beta test feedback from the simulation team, leadership expectations, and best practices noted in simulation debriefing literature. This tool is used monthly to evaluate the debriefing performance of all simulation staff. The archived videos and reviews are additionally integrated into new staff training (Table 1.7).

Evaluations from learners have a demonstrated impact on simulationists. Primarily, written feedback creates opportunities for self-reflection and program analysis. By providing learners with paper single-page feedback tools immediately following the simulation and specifically asking for written narrative feedback, in addition to a brief Likert scale, both the simulation teams and leaders can see a practical snapshot of the simulation experience of the learners. SIM-MT collects 100% written feedback immediately following every simulation experience. This feedback

Table 1.7   Sample form for CQI debrief

Debrief - Continuous Quality Improvement

Form for Debrief CQI - To be completed monthly upon review of Debrief CQI Videos

* Required

Email address *

Your email

Debriefer Name *

Choose   ▼

Month of Debrief *

Choose   ▼

Paste link for Debrief video Here *

Your answer

Presents professional appearance *

○ Yes

○ No

Explain (optional)

Your answer

Assumes approachable position in room*

○ Yes

○ No

Explain (optional)

Your answer

Debrief is structured in a purposeful way*

○ Yes

○ No

Explain (optional)

Your answer

Utilized reactions to identify performance gaps*

○ Yes

○ No

Explain (optional)

Your answer

Uses open-ended questions with inquiry and advocacy model*

○ Yes

○ No

Explain (optional)

Your answer