RESEARCH ARTICLE

It Takes a Village to Move a Hospital: Simulation Improves Intensive Care Team Preparedness for a Move to a New Site

Conall Francoeur, MD, Sarah Shea, RN, Margaret Ruddy, RN, Patricia Fontela, MD, Farhan Bhanji, MD, Saleem Razack, MD, Ronald Gottesman, MD, Tanya Di Genova, MD

ABSTRACT

OBJECTIVES: To evaluate in-situ simulation to prepare a PICU to move to a new, redesigned unit.

METHODS: The study setting is an academic PICU. This is a cross-sectional study using in-situ simulations of common PICU admissions. Postsimulation, participants completed a survey comparing the perception of preparedness pre- and postsimulation (via a 10-point Likert scale). Participants were resurveyed 6 months postmove to assess whether effects persisted. Qualitative data were obtained via thematic review of the survey comment section and from postsimulation debriefing.

RESULTS: Response rates were initially 100% and 67% at the 6-month follow-up. In the initial phase, all questions had statistically significant improvements in post- versus presimulation scores. Participants felt better prepared (presimulation: 6.20, postsimulation: 7.90, $P < .001$) and more confident about caring for real patients (presimulation: 5.49, postsimulation: 7.41, $P < .001$). They felt more comfortable working in the new unit (presimulation: 5.65, postsimulation: 7.50, $P < .001$) and better able to deliver safe care (presimulation: 5.85, postsimulation: 7.60, $P < .001$). Six months postmove, participants still believed that simulation was helpful (7.43, SD: 2.20) and still reported improved team confidence (7.36, SD: 2.11). Only 1 of 28 participants preferred less simulation. Exercises were described as helpful in identifying process and latent patient safety issues.

CONCLUSIONS: Our pediatric intensive care team found simulations to be beneficial in preparation for providing care to critically ill children in a complex new setting. Simulations uncovered latent process, personnel, and patient-safety issues that were addressed before actual patient care.

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Moving a hospital requires major changes in workflow, communication, and care processes. When these are managed suboptimally, patient care may be put at risk. In 2015, as part of a complex multihospital move, our pediatric hospital moved to a new facility. The move was significant for the PICU, whose new design was considerably different. The old site had an open concept with 8 of 12 beds spread out around a central work pod. The remaining beds were in individual isolation rooms. In addition, a 4-bed intermediate care unit was adjacent to the main PICU. The unit's square footage more than tripled. The rooms are now all single and line corridors in such a way that 2 separate work stations are required. The intermediate care unit is a redesigned PICU-managed advanced care unit (ACU), located 2 floors above the main PICU. These changes in physical layout required significant adjustments for all care teams, including the physicians, nurses, and allied health and support staff. There were concerns regarding the team's preparedness for the new environment, including concerns about communication, workflow, and care processes, in this changed configuration.

According to the Joint Commission for Hospital Accreditation, "communication failures are the leading cause of inadvertent patient harm," accounting for over 70% of sentinel events.[1] This is significant because our move meant important changes in communication between team members. The old unit's open concept allowed for easy communication. The small space between patients, the central workstation, and the lack of physical barriers meant most questions and concerns were addressed in person. With the substantially larger layout, and the new ACU, communication between team members would be less "face-to-face" and more telephone-dependent.

Simulation has been evaluated in preparing NICUs,[2,3] emergency departments (EDs),[4] and obstetrics units[5,6] for the transition to a new site. To our knowledge, there are no previous published reports of the use of simulation to prepare a PICU for a move to a new hospital. The PICU is a unique environment characterized by severe illness, high intensity, complex technology, large multidisciplinary teams, and many communication challenges. It is distinct in that it cares for high volumes of critically ill patients affected by a wide range of pathologies.

To deliver high-quality critical care, it was essential to prepare our team for the new environment. It was also vital to ensure that key processes were modified appropriately and then tested. Our transition team designed simulation scenarios to familiarize a multidisciplinary intensive care team with a new facility and identify potential systems issues and latent patient safety concerns before the move. We hypothesized that in-situ simulation is an effective tool to prepare a PICU team to move to a new unit and to help deliver safe, high-quality care to critically ill children in a complex new environment.

METHODS

Our study took place in April 2015 in the PICU of an academic tertiary care center in Canada. This PICU admits 850 patients per year and includes medical, surgical, and postoperative cardiac patients.

We performed a cross-sectional study with both quantitative and qualitative components. The quantitative data were obtained via survey. Participants included registered nurses (RNs), advanced practice nurses, respiratory therapists, residents, fellows, and attending staff. Via a convenience sample, we aimed to enroll all participants. The simulations were conducted exclusively in the new unit, over 3 consecutive days, ~1 month before the hospital's move.

Scenarios involved ~5 to 7 participants: 2 to 3 nurses, 1 to 2 respiratory therapists, 1 resident or fellow, and 1 attending physician. Cases were distributed throughout a full day, although some participants only participated for half-days. Simulations of the move itself were performed, but these were not evaluated as part of this study. We also have ongoing weekly simulations to continue to familiarize the health care team with our environment.

Six simulation scenarios were designed to represent typical PICU admissions. Details about the 6 cases can be found in Appendix 1. Each case was designed to address specific objectives, including geographic, equipment, and staffing concerns. For example, the simulation of a tracheostomy-dependent patient with an obstructed airway was designed to test personnel, equipment, and communication components of the emergency response system in the ACU. In the polytrauma case, the planned complication of acute increased intracranial hypertension represented an important change in physiology and management. Participants needed to administer rescue medications not routinely kept at the bedside and were challenged in the new setting to transport an unstable patient to the computed tomography (CT) scanner located on another floor. The postoperative cardiac surgery patient represented a standard but complex admission because of unique physiology, numerous medications and/or infusions, and a larger multidisciplinary care team. That patient's acute pulmonary hypertensive crisis tested the team's ability to procure inhaled nitric oxide, and the arrhythmia-related hypotension required urgent intervention and an electrocardiogram (ECG) evaluation.

After the simulations, participants completed a written survey (Appendix 2) that retrospectively compared the perception of preparedness in the new PICUs and ACUs, before and after the simulation.[7] Responses were recorded on a 10-point Likert scale from strongly disagree to strongly agree (lower limit: 1; upper limit: 10). We also assessed the perceived effectiveness of simulations after the move by resurveying participants 6 months postmove. They completed the same postsimulation questions and similar general questions (Appendix 3). We added questions to better evaluate whether this process was deemed to be useful. A paired-sample *t* test was used for analysis of the retrospective pre- and postsurvey results.

We used a P value of $<.05$ as statistically significant. Statistical analyses were conducted by using Stata software version 12 (StataCorp, College Station, TX).

Qualitative data were also compiled. During each case, observers recorded key observations about equipment, team function, and communication. A debriefing followed each scenario. The debriefing differed from standard debriefing in that it addressed equipment, unit geography, and other process issues in addition to medicine and crisis resource management. Topics covered included team function, facilities, equipment, and any other issues identified by participants. Simulation organizers, including physicians and senior nurses, led the discussion. We reviewed comments from both survey phases and debriefing sessions to identify common themes.

We received an exemption from our institution's research ethics board. According to our institution's policy regarding activities that constitute research, this work met criteria for operational improvement activities exempt from review. No nominal data were collected, and all responses remained anonymous.

RESULTS

Initial Phase

The initial survey had a 100% (42 of 42) response rate. Participants included 23 nurses, 7 respiratory therapists, 5 attending physicians, 4 pediatric residents, 2 critical care fellows, and 1 advanced practice nurse. The majority of participants had >10 years of work experience (78.6%), whereas 9.5% had 5 to 10 years of experience and 11.9% had <5 years of experience. Most participants were women (71.4%). The 6-month follow-up group had a response rate of 67% (28 of 42). Loss to follow-up occurred predominantly because of graduating residents and leaves of absence. In the first phase of the study, all questions had statistically significant improvements in post- versus prescores (see Fig 1). Participants felt better prepared and more confident to care for real patients after the simulation (presimulation: 5.49 [SD: 2.35], postsimulation: 7.41 [SD: 1.20], $P < .001$ and presimulation: 6.20 [SD: 2.41], postsimulation: 7.90 [SD: 1.35], $P < .001$, respectively). The simulation led them to feel more comfortable working in the new unit (presimulation: 5.65 [SD: 2.17], postsimulation: 7.50 [SD 1.28], $P < .001$). Participants also felt better able to deliver safe care after the simulation (presimulation: 5.85 [SD: 2.40], postsimulation: 7.60 [SD: 1.41], $P < .001$).

The majority of comments in the survey and debriefing sessions were supportive of the simulations. One participant stated that the "simulations were helpful to physically get acquainted with the new environment but also to pick up problems with the planning of the physical space." Many participants commented that an important obstacle to more effective simulation was the lack of a fully ready unit when the simulations took place. Delays in construction and installations meant that monitoring and communications systems were not fully in place at the time of simulations. Without these systems in place, and without supplies available in their dedicated location, the fidelity of the simulations was not thought to be optimal.

We identified multiple process issues and latent patient safety concerns during simulations and during debrief sessions. Bedside respiratory therapists and nurses noted differences in the choreography of their care because of the new, boom-based electrical and gas supply. These differences

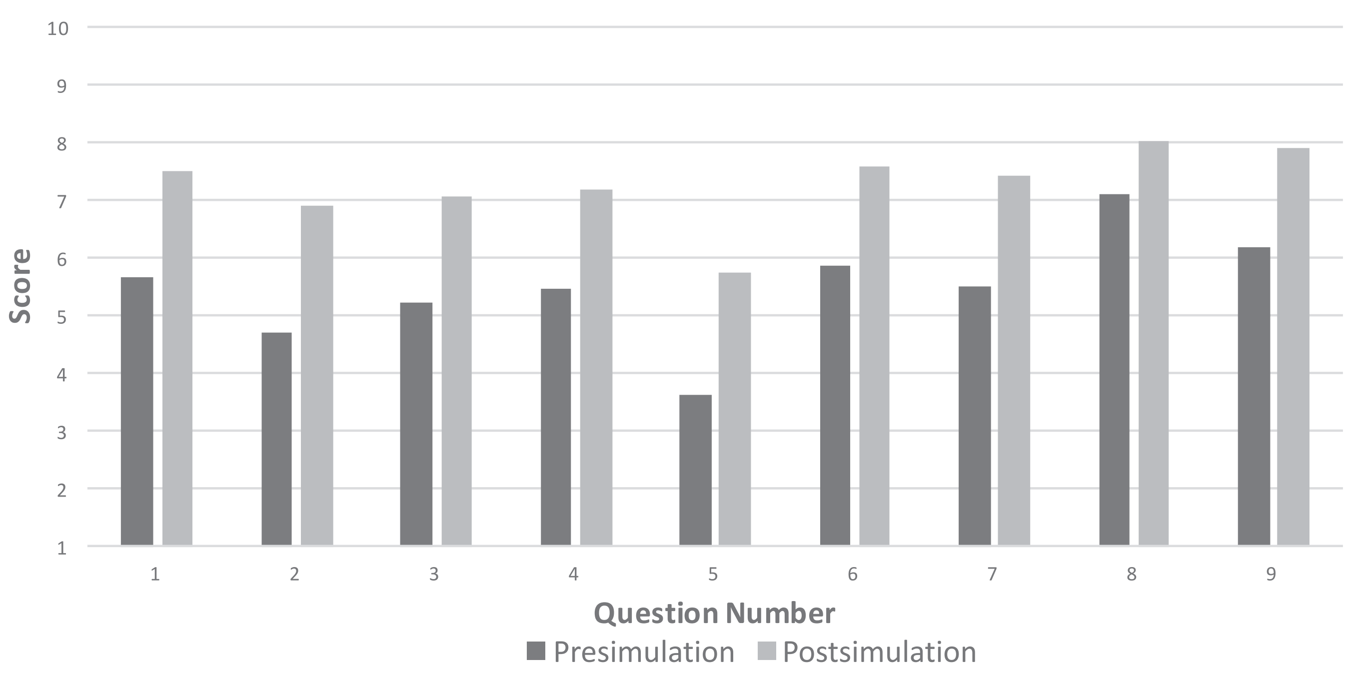

FIGURE 1 Score comparison pre- and postsimulation, with scores based on 10-point Likert scale.

were described as an initial challenge to efficiency, but one that could be overcome with practice. They also had to adjust to voltage-based, use-specific plugins for equipment such as ventilators. Our patient care attendants had difficulty finding key equipment and supplies because of insufficient orientation. In the new individual rooms, when the doors were closed, nurse or patient calls for help could not be heard on the unit. The "code blue" emergency buttons were found to be out of reach of bedside nurses. New systems for storing and distributing medications, particularly narcotics and/or controlled-substances, added additional and time-consuming steps to medication acquisition.

Follow-up Phase

In the 6-month follow-up, the participants still believed the simulation exercise was helpful (7.43, SD: 2.20) and continued to report improved team confidence (7.36, SD: 2.11). Participants also felt that additional simulation immediately after the move would have been useful (7.61, SD: 2.25). Ninety-six percent (27 of 28) of participants felt that the same amount of simulation or more simulation would have helped prepare the team for the move. Only 1 participant (3.7%) preferred less simulation.

The majority of comments reflected positive perceptions of the simulations. One participant stated that 6 months after the move, "finding equipment is still a challenge." The same respondent added "the simulation did help to familiarize staff to the lay out of the bedside and how to get assistance when needed." Another added that "many issues [that] came up after the move may or may not have been foreseeable" but that the "simulations were helpful and necessary for patient safety."

DISCUSSION

In our study, we show that simulation is a useful tool in preparing a PICU team to function safely and effectively in a new unit.

In addition to preparing the health care team to perform effectively, these simulations unearthed important process issues. With gas and electrical supply provided via a hanging boom rather than from the wall, bedside nurses and respiratory therapists had to adjust usual care routines. Routine ventilator and gas line setup were subsequently adjusted to accommodate these changes. Unlike at the old site, the voltage-limited power outlets meant that devices could not be connected to any outlet. Simulations showed that quickly identifying the correct outlet was problematic. We therefore labeled each outlet with a device-specific use. We also discovered that patient care attendants had received insufficient orientation and had difficulty finding key equipment during simulation. As a result, additional orientation time was allocated premove to the attendant group. Additional orientation time was also provided to nurses to better familiarize them with medication and supply room setup.

The simulations also identified latent patient safety concerns. With the doors of individual rooms closed, the bedside nurse's calls for help could not be heard on the unit. We therefore adjusted protocols to mandate that doors remain open for unstable patients. During the simulations we also realized that the code blue call button location on the booms were difficult for the bedside nurses to reach. Constraints of both time and funds meant that it was not possible to change the position of the button, but we did adjust practice. Protocols now mandate that nurses instead depend on the more accessible call bell. Nurses also now include ensuring access to this button in their preshift safety check. Phones were originally only located outside of rooms. Simulations exposed this as a flaw because in urgent situations, these phones were out of reach. Before the move, phones were therefore relocated to the bedside in each room. The ACU scenario uncovered that the proposed emergency response route was not the most rapid. We modified the first responder orientation to indicate the more efficient, back-staircase route.

Our experience leads us to hypothesize that a stepwise approach may be useful in preparing a unit for a move. The first phase should evaluate the physical environment characteristics, such as boom location and room layout. The second phase should assess physical functions such as supply management and emergency setups such as alarms. The last and most important phase involves evaluating how personnel and the new environment and equipment interact. It is during this phase that the team tests systems and procedures that must be in place and effective to deliver high-quality and safe patient care. For this final step to be of highest yield, all equipment, personnel, and communication systems would ideally be in place before proceeding with simulation exercises.

Our data are subjective. Increased provider comfort, however, has been associated with improved outcomes.[8] Our sample size, although not large, was reasonable, and our response rate of 100% in the initial phase lends strength to our findings. Presimulation scores were collected retrospectively, and this may have affected survey responses. The most significant limitation was the lack of a fully ready unit when the scenarios took place. A recurrent theme in participant feedback is that the simulations were effective but could have been more so if all equipment and communications systems had been ready.

CONCLUSIONS

Our study reports on a novel use of in-situ simulation in addressing human factors, processes, and design to prepare a pediatric intensive care team for a move to a new site. In this setting, participants perceive simulation to be a useful tool to provide safer and more efficient care. The knowledge and skills obtained through simulation allowed us to identify concerns and refine processes to ensure safe, high quality care before the move, and therefore before putting any actual patients at risk.

We theorize that the ideal simulation model is one that allows for a new site to be evaluated in a stepwise fashion. The initial phases should assess physical environment and equipment. The final phase, the most important, must evaluate dynamic team function in a fully equipped environment. Further study is needed to determine the optimal approach.

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APPENDIX 1: CASE DETAILS

Case patients included a 3-month-old with bronchiolitis admitted for noninvasive ventilatory support, a 4-year-old admitted to the ACU with an acute respiratory decompensation related to a blocked tracheostomy, a postcardiac surgery patient with pulmonary hypertension, a postoperative spinal fusion patient with ongoing bleeding, and a teenager with polytrauma and acute intracranial hypertension requiring emergent imaging. Each case simulation lasted ~10 minutes.

Case 1: 3-Month-Old Infant With Respiratory Distress Secondary to Bronchiolitis

Situation

You have an admission coming from the ED. The infant is a 3-month-old boy. There is no unusual health history. He is being admitted from the ED with a 3-day history of progressive respiratory distress with decreased oral intake. Intravenous (IV) hydration was started in the ED. The plan is to initiate continuous positive airway pressure (CPAP). Another nurse is present to assist you.

Key Steps in Scenario

1. Set up for the admission, and communicate with the ED and with the RT.
2. Transfer the infant to the PICU crib and settle him, which includes putting the infant on the monitor and initiating infection control practices.
3. Perform an assessment of the infant.
4. If an RT is not at the bedside, please inform the RT that the infant is ready to start CPAP.
5. Suction the infant and send an nasopharyngeal aspirate before initiating CPAP.
6. Invite the parents in to see the infant.
7. Reassess the infant, which includes obtaining a blood gas.
8. The infant has deteriorated and will require intubation. Please have someone escort parents to the parents' room.
9. Prepare medications for intubation, which includes preparing infusions (RN) and intubation equipment (RT). Have a "crash cart" nearby.
10. Administer intubation medications (RN). Assist with ventilation and intubation.
11. Secure endotracheal tube (ETT), put the infant on a ventilator, and assess ventilation (RT).
12. Obtain a chest radiograph (CXR). Once CXR is done, please obtain a capillary blood gas.
13. Have parents brought back to the bedside and update them.

Case 2: 3-Day-Old Immediately After Transposition of the Great Arteries Repair

Situation

The child is a 3-day-old, 3-kg girl arriving from the operating room (OR) after a transposition of the great arteries repair. The child is intubated and hemodynamically stable but has an open sternum and is being paced with an external pacemaker, has a Glasgow Coma Scale score of 3 (sedated), has 2 chest tubes connected to portable suction, and has an arterial line, an intracardiac line, a double-lumen central venous line and 2 peripheral intravenous catheters (PIVs). There are 2 U of unopened packed red blood cells (PRBCs) and a unit of unopened platelets on the stretcher. You have another nurse to assist you.

Key Steps in Scenario

(RT will have the ventilator and equipment set up at the bedside before the patient's arrival.)

1. Call the team (medical doctor [MD], RT, resource nurse) to the bedside.
2. While listening to the report from the anesthesia department and the cardiovascular/thoracic surgeon, perform a rapid assessment of the infant (RN and RT). Attach patient to the ventilator and assess ventilation (RT). Perform a ventilator check (RT).
3. Attach chest tubes to wall suction.
4. Transfer the infant to the overhead cardiac monitor.
5. Perform a more thorough assessment, including calling for a statum CXR. The infant is cool, and pulses are difficult to palpate; please try measuring the pulse with a Doppler ultrasound. Please ensure you have an extra pacemaker and battery at the bedside.
6. Put unused units of PRBCs in the blood fridge and put the platelets on the spinner.
7. Assist with the CXR.
8. The ETT is too low and needs to be pulled up, prepare tapes to re-affix the ETT (RT);
9. Start sedation infusions;
10. It has now been 20 minutes since the child was placed on a ventilator. Please call for testing and send test results statum for arterial blood gas (ABG), mixed venous blood gas, complete blood cell (CBC) count, coagulation, and serum biochemistry.
11. The oxygen index is high according to the ABG test results, and the MD requests starting inhaled nitric oxide; prepare to start it (RT).
12. The MD wants to obtain a 12-lead ECG but doesn't know where the ECG machine is kept. Please direct the MD on where it's kept.
13. The child is tachycardic with a low blood pressure. Please prepare and give 10 cc/kg of 5% albumin (the infant weighs 3 kg).
14. The child is stable. Have the parents brought to the bedside.

Case 3: Teenage Victim of Motor-Vehicle Crash or Unintentional Injury

Situation

Your patient is a 16-year-old girl (50 kg) and is being transferred to the PICU from the OR. Her admission is for polytrauma, including traumatic brain injury and abdominal trauma. The patient is on c-spine precautions. You get the call from the OR, informing you of the intubated patient's arrival in a few minutes. You have another nurse to assist.

Key Steps in Scenario

1. Inform other members of the team (MD, PICU RT) of the patient's imminent arrival. The RT will set up necessary equipment (ventilator, etc).
2. When the patient arrives, perform a rapid and focused assessment. Receive the report from the OR on the patient while the assisting RN transfers the patient to the overhead monitor. The child has a Glasgow Coma Scale score of 3, has an external ventricular drain, is intubated, has been hemodynamically unstable, has a dry and intact abdominal dressing, and has a triple-lumen central venous line and 2 PIVs with an arterial line. The patient is on a norepinephrine drip. The RT performs the patient assessment, which includes the effectiveness of ventilation, the ETT placement, etc.
3. Perform a more thorough assessment, including calling for statum CXR.
4. The patient is tachycardic with low blood pressure, and the MD orders a bolus of 500 mL of 5% albumin. Please administer it.
5. Assist with the CXR.
6. It has now been 15 minutes since the child was placed on a ventilator. Please order tests for ABG, CBC count, coagulation, and serum biochemistry.
7. On checking the pupils, you notice that they are no longer equal and that they exhibit a sluggish reaction to light. Call the MD statum to the bedside.
8. The decision is made to go for a statum CT scan of the head. The MD communicates with the radiology department to arrange the time. They are ready immediately in the radiology department for imaging. Inform the RT of the need to go to the CT scanner now (RN).
9. Prepare to leave for CT scanning (including calling for transport) and, when ready, bring the patient to the CT scanner.

Case 4: Infant With Respiratory Distress, Ready for Transfer to Floor

Situation

The infant is a 6-month-old boy with no unusual health history. He was admitted to the PICU from the ED with respiratory syncytial virus bronchiolitis. While in the PICU, he received 3 days of CPAP, with chest physiotherapy and suctioning, IV hydration, and nasogastric feeds. He has now progressed to oxygen at 0.5 liters per minute via a nasal cannula with oral feeds. He is not in any respiratory distress. His PIV is normal-saline locked. He is ready for transfer to the medical unit. Another nurse is present to assist you.

Key Steps in Scenario

1. Perform an assessment of the infant, confirming he is ready for the regular care unit.
2. Document appropriately, including the transfer tool.
3. Coordinate transfer with the ward, which includes giving a report and arranging a time for transfer.
4. Prepare the infant for transfer, which includes transferring the nasal cannula to a portable oxygen tank.
5. Bring the infant to B9 (the medical inpatient unit).

Case 5: Tracheostomy-Dependent Patient With Sudden Respiratory Failure in the ACU

Situation

Your 4-year-old patient has been admitted for a week. She spent several days in the PICU, and was transferred to the ACU when she stabilized. She is on bilevel positive airway pressure ventilation through her stable tracheostomy. You hear the oxygen saturation monitor and the bilevel positive airway pressure ventilator ringing when you are in another patient room. When you enter the room, your patient is severely cyanotic and in severe respiratory distress. You realize that her tracheostomy has become occluded with a mucous plug.

Key Steps in Scenario

1. Call for help. Call a pediatric code blue.
2. Try to manually ventilate your patient. You cannot do so effectively because of the occlusion.
3. Try to suction your patient.
4. Help arrives. The decision is made to recannulate her tracheostomy.
5. Assist with recannulation.
6. The patient stabilizes.

Case 6: Postoperative Spinal Fusion With Hypotension

Situation

Your 14-year-old, 60-kg (developmentally delayed) patient is about to be admitted postoperatively for a spinal fusion. You receive the call from the OR that she is expected to arrive in 5 minutes. Your bed space is prepared for the admission.

Key Steps in Scenario

1. Alert team members (physician, nurse, RT) of the imminent arrival of the patient.
2. She arrives with the surgical team and is groggy and crying, with blow-by oxygen. She is connected to the transport monitor and has stable vital signs. She has a chest tube, connected to the portable suction machine, which is draining sanguineous fluid. A member of the surgical team hands you a bag of PRBCs.
3. Perform a rapid assessment.
4. Admit your patient and perform a more thorough assessment. Send off postoperative blood work (venous blood gas, CBC count, biochemistry, and coagulation profile) to the laboratories. Call for a CXR.
5. The blood pressure is stable, but your patient is tachycardic, has low central venous pressure and decreased peripheral perfusion, and there is significant chest tube output; The physician orders a 5% albumin (250-mL IV) bolus. Please prepare and administer the dose. Her heart rate, central venous pressure, and peripheral perfusion improve.
6. Her pain is rated at a 6 out of 10 on the Face, Legs, Activity, Cry, Consolability scale. Morphine (5-mg IV) is ordered. Please prepare and administer a dose. Her pain decreases to 4 out of 10.
7. Assist with the CXR.
8. Her coagulation profile results are elevated. A fresh frozen plasma bolus (250 mL IV) is ordered. Please obtain the product and gather the necessary equipment to administer it while awaiting its arrival from blood bank.
9. Bring the family to the bedside.

APPENDIX 2: SURVEY (INITIAL PHASE)

What is your professional designation?
____ Nurse ____ Advanced Practice Nurse ____ Respiratory Therapist.

___ Resident ___ PICU Fellow ___ PICU Attending Staff.
How many years have you been practicing?
___ <5 years ___ 5 to 10 years ___ >10 years.
What is your sex?
___ Female ___ Male

Pre- and Postsimulation Assessment

	Strongly Disagree → Strongly Agree
Before the simulation	
I feel comfortable working in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where to find the materials I need in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable with the new equipment in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where and how to obtain medications in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable using the communication system in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident about my ability to deliver safe care in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I feel prepared to care for real patients in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident in my decision-making skills in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am able to confidently care for your patient in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
After the simulation	
I feel comfortable working in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where to find the materials I need in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable with the new equipment in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where and how to obtain medications in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable using the communication system in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident about my ability to deliver safe care in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I feel prepared to care for real patients in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident in my decision-making skills in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am able to confidently care for your patient in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
General questions	
This simulation session was helpful.	1 2 3 4 5 6 7 8 9 10
This simulation was realistic.	1 2 3 4 5 6 7 8 9 10
This simulation will prepare me to manage a similar scenario in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
This simulation training improves team confidence in providing appropriate medical care in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
Comments:	

APPENDIX 3 Survey (6-Month Follow-up)

	Strongly Disagree → Strongly Agree
After the simulation	
I feel comfortable working in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where to find the materials I need in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable with the new equipment in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I know where and how to obtain medications in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am comfortable using the communication system in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident about my ability to deliver safe care in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I feel prepared to care for real patients in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am confident in my decision-making skills in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
I am able to confidently care for your patient in the PICU/ACU.	1 2 3 4 5 6 7 8 9 10
General questions	
This simulation session was helpful.	1 2 3 4 5 6 7 8 9 10
This simulation was realistic.	1 2 3 4 5 6 7 8 9 10
This simulation will prepare me to manage a similar scenario in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
This simulation training improves team confidence in providing appropriate medical care in the new PICU/ACU.	1 2 3 4 5 6 7 8 9 10
Six months later, I feel the simulations made me better able to function efficiently in the new unit effectively.	1 2 3 4 5 6 7 8 9 10
Six months later, I feel the simulations made me better able to manage resources in the new unit effectively.	1 2 3 4 5 6 7 8 9 10
I feel that additional simulation immediately after move would have been useful.	1 2 3 4 5 6 7 8 9 10
Six months later, I would have liked less/the same amount of/more simulation in preparing for the move (less, same, more).	1 2 3 4 5 6 7 8 9 10

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It Takes a Village to Move a Hospital: Simulation Improves Intensive Care Team Preparedness for a Move to a New Site

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