How to Run a Debriefing?

2

Abstract

This section of the pocket book covers the actual facilitation aspect of the debriefing based on a model including introduction, reactions, analysis, summary, and closing/conclusion. It presents the investigational techniques that can be used during the debriefing analysis phase such as the non-judgemental debriefing, the good-judgement debriefing, and the advocacy-inquiry approach. These various approaches aim to demonstrate respect for the participants' actions and decisions at the same time as more or less probing into the rationale or mental frame behind those in order to close the identified performance gaps, which can be cognitive, behavioural, or technical. The advocated approach that can be used involves individually "repackaging" the identified deficiencies, generalising or decontextualising those, and asking learners for solutions, which forces them to actually fill those performance gaps and promotes deeper learning. The summary phase helps reviewing the important learning points or "take-home messages". It is a way for the debriefer to ensure that learners actually recall the solutions of all the performance gaps, which have been closed through the debriefing, and hence that it has been effective (at least in terms of immediate recall). The closing or conclusion phase is more general and provides a further opportunity for learners to express concerns or reveal actual needs regarding additional practical skills training or access to recommended reading material to further their knowledge. It is also a key phase during which to thank the participants for their engagement and reminding them about the confidentiality aspect. Finally some useful debriefing sentences and questions relating to each of the debriefing phases are provided as a guide for debriefers.

2.1 The Debriefing Model Used

Table 2.1 presents an overview of the various phases of the three-phase recommended debriefing model (Eppich and Cheng 2015; Rudolph et al. 2006) that inherently incorporates the core elements of the RUST model (Karlsen 2013) (Fig. 1.2)

Table 2.1 Recommended debriefing model

Introduction	– Thank participants (Always!)
	And mainly for the first scenario debriefing:
	  – Remind everyone of the aims of the debriefing
	  – Reassure participants regarding their safety and confidentiality
	  – Present the structure of debriefing
	  – If the scenario was stopped at time that did not seem natural, explain why

Reactions (emotions)	Ask "How did you feel?" preferably to the youngest, less experienced, and then to all the other participants
Analysis	Description: "What happened to this patient?" (to the leader) Successes: "What was successful?" Difficulties: "What difficulties were you facing?" Choose the appropriate technique: directive feedback, plus/delta, after action review, or advocacy-inquiry (two to four gaps in performance) Getting participants to identify and close performance gaps Repackaging, generalising, asking for solutions Verification feedback
Summary	Ask "What did we discuss today?" Get learners to summarise all the take-home messages "Do you have any questions?" Provide a toolbox: didactics papers (recommendations) or specific guidelines regarding particular skills
Closing or conclusion	Thank again all participants for their honesty during the debriefing Remind everyone about confidentiality Hoping for a benefit

sandwiched between an introduction and a closing phase of the debriefing. It also contains our personal recommendations with suggested questions guiding the process. This is the debriefing model we will primarily use in this book.

2.2   How to Introduce Debriefing?

A few minutes need to be spent on the first debriefing introduction. This introduction is very important as it concurs to make the learners even more comfortable, while the debriefing is starting. After the simulation scenario has ended, a participant might experience fear of the facilitators' or peers' judgements, of inaccurate reflection on clinical ability (Savoldelli et al. 2005), or they may feel they have not been given enough time to complete the scenario. This might create barriers to an effective debriefing, and it is therefore mandatory to establish a teaching atmosphere that promotes mutual respect and provides a safe environment. The debriefing introductory points presented in Table 2.1 are now being explained in detail.

Thanking: the beginning of the introduction enables everyone to settle for the debriefing with a general thank you to the participants for their active participation in the simulation. It is often a time when the observers applaud their peers as they rejoin the group in the debriefing room, as a thanking manifestation rather than any kind of approval of performance.

Aim: the facilitator should clearly state what the aim of the debriefing is and what it is not: "It is all about performance improvement and not about feeling bad in any manner or targeting anyone in particular".

Safety: the facilitator should restate the rules of the simulation session, since the learners are most of the time very anxious about the way the debriefing will occur. Benevolence and confidentiality are two guarantees about safety that need to be reiterated even if it was mentioned at the start of the session briefing (Fig. 1.1—phase 1). For example, "There will be no offence, no humiliation, no criticism, and no blame. Nothing discussed here will come out of this room. We will discuss the learning experience and learning points to take away from it". Beware that negative facial expressions on behalf of the facilitators may negate any previous verbal sense of reassurance provided to the learners.

Structure: finally, it is important to reassure the participants about the structure of the debriefing itself since they may not be aware of it and anxious it could last for a long time. "There will be 3 different phases. The first one where we will talk about feelings and initial impressions, the second for analysing and understanding what happened from different perspectives. I may ask provocative questions at that time but respectfully and never offensively, and then we will conclude. It should not last more than 30 minutes".

Finally, if the scenario was stopped at a point in time that did not feel like a natural or expected concluding phase, the debriefer should acknowledge this and provide a brief reason, generally linked to the learning objectives having been addressed or that it was the planned ending point of the scenario. If this is not done, participants will start the reaction phase by describing what they would have done next or maybe by complaining that it was not realistic to not provide them with more time to complete the scenario.

In a simulation session with multiple scenarios for which everyone attends the debriefings, the other elements of the introduction presented in Table 2.1 are only mentioned during the first scenario debriefing. For the second debriefing, all learners will have clearly understood the aim and structure of the debriefing discussion and realised that it is (hopefully) not a humiliating or "grilling" session.

2.3 How to Run the Reaction Phase?

The reaction phase (Table 2.1) is important and should not be delayed to prevent the risk of being "attenuated" or occurring outside the context of the facilitated debriefing. Sufficient time (5–7 min) should be allocated for this essential phase for participants to share their initial reactions about the simulated event that could otherwise lead to them having unresolved negative emotions and cause disengagement in the debriefing process (Cheng et al. 2016a). Simulation raises emotions among participants like fear, stress, indifference, frustration, anxiety, anger, etc. These feelings are very important as they can improve learning and memory if they are properly managed (Joëls et al. 2006). The rationale for the reaction/emotional phase is at first that a proper analysis of what happened cannot be correctly performed by the left hemisphere of the brain, whereas the right hemisphere is "busy" with a flow of emotions. Then venting of emotions is mandatory for subsequent analysis of the events. Secondly, as we saw previously, these feelings are expressions of some unsatisfying facts that occurred during the scenario. Emotions very often refer to gaps in CRM principles. Furthermore, the participants who do not share their emotions may not be as engaged in the debriefing

(Cheng et al. 2015b). Therefore, collecting emotional reactions is of great value for the debriefer(s) in order to make sure they relevantly learn about the different inter-relations between the members of the team and their stand point and notice gaps in communication, teamwork, situational awareness, etc. (Weinstock 2013). The emotions expressed are a path for understanding the gaps among the CRM principles or human factors issues that should be debriefed. As such, this succinct reactional review helps set the scene prior to a more in-depth analysis which enables the understanding of what happened (Karlsen 2013). Despite these crucial findings, some authors prefer to step directly into a discussion about what happened and skip the reaction phase arguing it is a "cultural step" (Jaye et al. 2015). In our experience, we found that venting of emotions was very useful prior to going into the analysis phase. What participants express during that phase can be noted by the debriefer(s) for later discussion and has the advantage of freeing up the participants' mind from what they wanted to say which enables them to now concentrate on the other points being discussed.

If participants adopt a defensive stance triggered by something that occurred during the scenario, it needs to be briefly addressed to reach an agreement (e.g. accepting limitation of the simulation realism, explaining why the scenario was stopped, resolving a misunderstanding but carrying on the debriefing according to what happened) so the reaction phase can proceed normally.

How to engage in this phase? Simple questions like "How did you feel?" and "How was it?" are thrown to everybody but rapidly redirected to the most junior participant. This precaution is important to avoid two pitfalls in a group's communication: (1) the Milgram hierarchical effect (Russell 2011) and (2) the Janis group-think effect (Janis 1971). Both of them would result in a repetition by the most junior or youngest participants of what has been expressed just before by the other team members as a form of submission or feeling of inferiority, in the sense that they may not feel it would be appropriate for them to bring up other points for discussion. If the junior participant feels intimidated by the question, it is important to redirect it to the participant who seems the most willing/engaged from their non-verbal signs. Then the facilitator asks the same question to everybody, including the confederates if present in the scenario, making sure all answers are collected to be able to use them afterwards during the analysis phase. It is important to ask "why" during the analysis phase, after an emotion has been revealed. This may require the debriefer to take some succinct notes regarding the points raised by the participants, to make sure they can be prioritised and discussed later on. This orientation can help the debriefer to link the emotions to teamwork dysfunction or other underlying human factor issues.

2.4   How to Introduce the Descriptive Part of the Analysis Phase?

The duration of the whole analysis phase is usually 10–20 min long (Weinstock 2013), which roughly corresponds to half or two thirds of the debriefing time. Prior to getting into the core of the analysis phase per se, it is mandatory to check among the participants the understanding of the simulation situation to avoid any further confusion in the process of the debriefing. It relies on the awareness of the correct case diagnosis.

Some authors have individualised this step as a specific step called "description phase" (Cheng et al. 2016a). The debriefer should turn to the leader of the team and ask in an inquisitive but friendly manner: "What was this scenario about?" or "What happened to this patient?". The rationale for this transition using an open-ended question is to check if the situation has been properly understood. If there is a discrepancy between what was the assumed and the actual diagnosis in the case, then all the structured analysis would be built on doubtful arguments and assumptions! It forms part of the "understanding" component of the RUST guide to debriefing (Karlsen 2013). All the elements must be in accordance with the actual case rather than misperceptions before going deeper into the analysis with the participants. This situational awareness inquiry about what was truly at stake needs to happen at the beginning of the analysis phase, starting with the team leader before hearing about the perspective from the other team members. A simple matrix of the team members versus the team leader's diagnosis of the situation is presented in Table 2.2 with probable causes for agreement or divergence in opinion.

If the leader's answer is correct, the debriefer can then ask the team members what they think about what the leader just said. If they agree, then the debriefer has an interesting opportunity to give a very positive feedback. For example, "Exactly, this scenario was designed to force you to take a decision regarding the best course of action…". Sometimes members might hesitate or state another diagnosis. This is a very relevant issue underlining the leader's potential non-verbalisation behaviour which would help maintain situational awareness of the situation among the whole team and that should be debriefed afterwards. The debriefer can only reply, "We will talk about why this might have occurred later", and give positive feedback to the leader.

If the leader's answer is not correct, the debriefer should ask the other members what they think of it. If the members' opinion is correct, then a positive feedback should be given to them, and the actual theme of the scenario should be announced, but the discordance should be explored later in the debriefing. If the leader and the rest of the team state an incorrect answer, the debriefer should announce the correct diagnosis of the scenario and then pause for a few seconds. This usually generates a silent moment during which everybody is mentally revisiting the scenario and one's actions with the correct diagnosis. After further general discussion about the scenario (maybe 10 min) exploring the team members and team leader's level of situational awareness, the debriefer may ask the group: "Does it make more sense to you now?" At this point, there should be acceptance nodding from the leader and the other participants. This acknowledgement means that the detailed analysis of the events and interventions can start properly. The actual designed scenario's diagnosis is now in accordance with what the group of learners are understanding thanks this short exploratory phase of the actual scenario diagnosis and why it has been missed.

2.5   How to Facilitate the Rest of the Analysis Phase?

Considering the 'debriefer—learner' dyad— some authors have described the analysis phase as a special inquiry facilitated by the debriefer(s) using Socratic questioning, in the so-called Debriefing for Meaningful Learning (DML) mostly used in

Table 2.2 Linking the team members' situational awareness with that of the team leader and how the debriefer should manage the corresponding situation

		Leader's awareness of the situation	
		Correct	Not correct
Team members' awareness of the situation	Debriefer recommendation(s): Correct	Adequate communication within the team and/or prior experience/knowledge of such situation by all team members helped them come to the correct diagnosis. Give a really positive feedback to the leader and every member of the team	Lack of communication between team members and leader: 1. Team members not asked to report anything "strange" that could have helped the leader identify the gap in situational awareness 2. Passive team members 3. Leader stuck in a "tunnel vision effect" or "fixation error" 4. Mixing of the three Give a reasonably positive feedback to the team members and say: "We will talk about it later on" (= CRM gap in performance)
	Not correct	Lack of communication between leader and team members: 1. Non-verbalisation from the leader 2. Authoritative leader 3. Passive team members 4. Mixing of the three Give a reasonably positive feedback to the leader and say: "We will talk about it later on" (= CRM gap in performance)	Lack of situational awareness from everybody in the team: 1. Too complex scenario 2. Lack of communication between team members and leader 3. Both State the correct diagnosis and say: "We will talk about it later on" Keep in mind there might be a clue (communication gap within the team) that could have resolved this lack of situational awareness and overcome this difficulty that is very often resulting in a profound feeling of frustration

nursing education (Dreifuerst 2015). Socratic questioning is an approach to teaching and learning in which the teacher does not give information or answer the students' questions directly but instead turns the task of uncovering the answers to the students by asking a series of questions so that students come either to the answer by themselves or develop a deeper awareness of the limitations of their knowledge (Dreifuerst 2015). These include questions about (a) the underlying belief or conclusion, (b) opposing thoughts or objections, (c) the origin or source of the information, (d) the implications or consequences, and (e) the reasons, evidence, or assumptions underlying the thought process (Paul and Elder 2007). DML first steps of analysis start with these questions: (1) "What is the first thing that comes to mind about the clinical experience you just had?", (2) "What went right and why?", and

(3) "What would you do differently and why?" These last questions are the two questions of the plus/delta debriefing (see Sect. 1.8.2).

We think it is important to start the analysis phase with a process that resembles the plus/delta debriefing, as it is a learner or team self-assessment strategy and represents a powerful tool for a learner-centred debriefing (Cheng et al. 2016b). The debriefer asks the participants, "What was successful for you in this simulation?", referring to the perceived achievements of the team. It engages learners in active reflection and self-assessment and gives them greater responsibility for learning (Cheng et al. 2016b). It is better to ask "What was successful?" rather than "What do you think was successful?" that could imply nothing was or "What was good?" which raises a moral issue between 'good' and 'bad' or even "What were the positive elements?" which will rightfully make them think that the negative part will come next. The wording of the latter examples may create among participants a feeling that obstructs all learning efforts.

If the answer is correct, the debriefer should not miss any opportunity to give a positive feedback and ask the leader and all the members of the team—hopefully present—to objectively state the teamwork's achievements (more than one). If the debriefer believes that a particular successful achievement really did not stand out, they can ask "What else? Anything else?" until the group members figure out their achievements.

Even if the first answer is not completely accurate, the moment to explain has not come yet, and it is wiser to let go and reply: "We will discuss this later on". For example, when several learners talk about situational awareness in a scenario, the debriefer can say: "I'm hearing several of you sharing your thoughts about the importance of situational awareness. I was thinking the same thing. I was wondering if we could discuss this further." By explicitly sharing this thought process, the debriefer confirms their alignment with the learners' agenda and, in turn, helps build trust with and among the learners, which supports a learner-centred environment (Cheng et al. 2016b).

Then the question should focus on their difficulties, "What difficulties were you facing?", referring to the perceived difficulties. It is important to write down or make a mental note of the elements raised because they will represent topics upon which the investigation technique will be focused. Some of these difficulties may have been already seen by the observers/facilitators during the scenario, but sometimes, at this precise step, there might be an emerging difficulty that was not noticed. This new information should be taken into account, and debriefers should promptly decide if it represents an extra point to debrief on.

2.6   Which Investigation Technique to Apply During the Analysis Phase

The investigation technique adopted during the debriefing is particularly important in relation to the rapport developed with learners, their trust in the facilitator(s), and their level of self-confidence. Two pitfalls that should ideally be avoided are the judgemental and the non-judgemental debriefing approaches. The various debriefing techniques for the investigational phase are summarised in Table 2.3 and discussed in more details below.

Table 2.3 Summary of the two non-recommended techniques compared to advocacy-inquiry technique used in the investigational phase of a good-judgement debriefing

	Judgemental debriefing	Non-judgemental debriefing	Advocacy-inquiry with good-judgement debriefing
Debriefer's role	*Goal*: changing the participants' behaviour, no matter what the environment may be *Assumption*: openly divulge what went wrong. Participants should have performed perfectly without committing any error	*Goal*: wanting to avoid shaming participants. Hoping the participants' behaviour will change in a non-offensive environment *Assumption*: tactfully expose what went wrong but minimise the importance of any potential mistake	*Goal*: mutual learning without shame Eager to investigate the intentions behind the participants' actions in a favourable environment for learning *Assumption*: participants are smart and want to do the right thing; mistakes are puzzles, not crimes
Debriefer's view of the participants	They are making mistakes and need to be told frankly about it	Their performance was not perfect, but they cannot really be blamed, so we should present both positive and negative points	Their actions during the performance were led by specific knowledge and assumptions that we need to explore, so it can be properly corrected to avoid future reoccurrence
Approach	Blaming, shame, factual statement of "truth"	Kind, gentle, lead learner to my answer	Mutual respect, inquisitive, curiosity, advocacy, and inquiry
Typical message of debriefing	Here is what you failed at completely. You did not do this… You should have done that…	In your opinion, what could have been improved?	I observed… I am concerned… I am just curious to know why…

2.6.1   The Judgemental Debriefing Technique Should Not Be Used

The judgemental debriefing technique has been used for years and still is in some clinical fields as some mentors think that trainees need to be shaken up and face the consequences of their actions irrespective of whether it is a patient safety issue during a learning activity or an critical event with a real patient. It should not be used in simulation-based education as it contradicts any positive learning process and violates basic psychological safety principles. The reason being is that it is felt as an offence by the participants, and they will want to respond with defence mechanisms that obstruct any learning process and may also impact on future simulation-based learning opportunities. Furthermore, this type of feedback may be detrimental as stated by Falchikov (2007): "In some cases the interaction between the learner and the assessment event is so negative that it has an emotional impact that lasts many years and affects career choices and inhibits new learning".

In the judgemental debriefing, the instructor has a very active role, speaks with authority, and always uses the accusative highlighter "you" (second person), for example, "You failed to notice…". The participants, on the opposite, have a very

passive role, being the recipient of this type of directive feedback, often without any reaction being expected from them (see Sect. 1.8.1). They may rightfully perceive this debriefing approach to be very offensive and depreciative which might make them feel very bad. There is not much learning benefit from such a debriefing approach other than to make them dislike the overall experience and feeling ashamed potentially in front of their peers (Table 2.3).

For example, after a simulation of CPR on a 3-year-old child, the instructor might say: "You did not perform chest compressions at a rate of 100–120 per minute!", "You made the cardiac massage at a rate of 60–65 minute at most, which is insufficient!", and "You don't know the paediatric resuscitation guidelines!" These are direct accusative statements that do not invite or even allow for the learner to explain why they may have had a lapse in their resuscitation efforts.

2.6.2   The Non-judgemental Debriefing Technique Brings Little Benefit

The non-judgemental debriefing—also named the sandwich strategy—is probably the most commonly used debriefing technique. It has been used all over the world for decades and remains widely used in simulation-based education, especially with "alphabet" resuscitation and trauma packaged courses. It was implemented to overcome the pitfalls of the judgemental debriefing technique which is offensive to the learners, offers no praises, and has consequences that impair the learning process (see Sect. 2.6.1). Nevertheless, even if this technique is more respectful of the learners, compared to the judgemental debriefing, it is not relevant enough and may miss major debriefing points as it does not precisely address the gap(s) in performance and the profound reasons behind them (Table 2.3).

In the non-judgemental debriefing, the facilitators have an active role but are less authoritative. They use impersonal (neutral) forms as "it" (third person), "It was not so bad", "It's good", etc. The learners have a passive role as there is not much interaction. The good point of this debriefing technique is that there is no or little perception of being offensive and the learners join in more easily. The facilitators' approach to identifying the gap(s) in performance is extremely cautious as they use a "guess WAIT" (What Am I Thinking?) strategy (Weinstock 2013). There is more to guess about what should have been the appropriate action and its rationale than a real understanding of the reasons for the gap(s) in performance on the part of the participants. A trained learner should also expect the bitter taste of the middle part of the sandwich after some practice, without better understanding of what should have been performed. The learning value of such a debriefing is moderate, probably more important for experienced learners, but insufficient for beginners as it does not address the causes of the gap(s) in performance and does not really promote reflection to help learners correct their behaviour or decision-making processes.

In the previous example, after a simulation of CPR on a 3-year-old child, the sandwich strategy may be applied as follows: "It was great! This child recovered. Well, chest compressions could have been faster, but overall it went well!"

2.6.3 The Good-Judgement Debriefing Technique

The good-judgement debriefing (Rudolph et al. 2006, 2008) is a relatively recent debriefing technique commonly taught during workshops and seminars addressing the healthcare simulation community to try to fill the gap of the judgmental and non-judgemental debriefing techniques, i.e. lack of relevance towards the performance gaps that have not been closed. The practical basis for good-judgement debriefing is that if you tell someone that they performed an action inappropriately and tell them to do it differently, it will not work! Or at least it will work sometimes but not constantly (Rudolph et al. 2017). There is a need for understanding the intention of the actions prior to making them change. Thus, the theoretical ground rule for the good-judgement debriefing is about understanding the reasons for the scenario participants' actions by exploring the unseen mental frames behind the observed actions and their outcomes (Rudolph et al. 2007). The hypothesis is that there may have been erroneous mental frames leading to the incorrect action(s) and that not knowing them could persistently lead to a recurrence of incorrect decision-making and associated actions even if the results of incorrect actions have been debriefed. This approach really positions the debriefer as a cognitive detective (Rudolph et al. 2017) and promotes reflection on the part of all the participants and provides some form of psychological safety as it is genuinely inquisitive as opposed to being directly critical. Once the debriefer has in mind what they observed during the scenario, i.e. one set of actions that seem inappropriately performed, they invite the participants to discuss this point by a preview statement like: "I'd like to discuss this topic (related to objectives) with you" (Rudolph et al. 2017). In summary, openly criticising the participants about their performance (as in judgmental debriefing) might be offensive to them and impair their learning process. Also the good-judgment debriefing technique can be seen as a non-violent communication technique and encourages participants to remain positively engaged.

The content of the analytic phase of the good-judgement debriefing technique includes four steps: (a) identification of a performance gap, (b) providing feedback on the performance gap, (c) investigating the basis for the performance gap, and (d) helping to close the performance gap through further discussion and teaching (Rudolph et al. 2008). The prerequisite for this exploration process (inquiry) is that the debriefer(s) makes their observations and first reveals their mental frame. This part is named "advocacy", and that is why this debriefing technique is also called the "advocacy-inquiry" (A/I) technique. The good-judgement debriefing technique forces the debriefer(s) to see the intention(s) behind every action and not to judge too quickly on the sole results of the actions performed by the scenario participants.

In the good-judgement debriefing, the instructor really becomes a facilitator, who is always questioning everything and everyone for the right reason, which is "understanding". The atmosphere of the debriefing is completely different from that of the judgemental debriefing, as it is assumed that the participants are sincere, innovative, dedicated, respectful, and authentically care about doing their best (SIDRA) (Sigalet et al. 2015). The debriefer uses "I" (first person) without any pride nor fear, as it is only to reveal their own mental frame to the learners.

As a result, there is transparency, honesty, and curiosity. The classic approach to good-judgement debriefing is made of a three-sentence-type process: (1) "I observed that the assessment of the patient was delayed…" (the debriefer's factual—neutral—observations), (2) "I am concerned about this because to me it means that…" (referring to the debriefer's own mental frame of understanding the situation = advocacy), and (3) "I just want to know why the first action was to look at the patient monitor settings…?" or "I wonder what was in your mind at that time?" (inquiry). None of these sentences contain any "you". Without being addressed in an offensive manner by the debriefer who is always inquisitively asking "why…?" in a soft neutral tone, the participants experience a very interactive debriefing that forces them to respond and reflect on what they did and what happened. This latter point has a very important psychological effect supported by the avoidance of using "you". Instead the debriefer is always referring to their own mental frame and saying "I". This type of debriefing has a very important learning value since it does not offend the participants in any way and is extremely relevant in its exploratory process regarding the reasons for the gap in performance and its causality (Table 2.3). Special attention should be paid to the importance of the second sentence ("I am concerned…"). If inadvertently the debriefer forgets this second sentence and goes from "I noticed such and such…" directly to "I just want to know why…", it would lead to a "read my mind" question where the learner may be disoriented while trying to understand the reason for this question (Cheng et al. 2016a).

Sometimes observations refer to the absence of specific expected actions. For example, in a patient in shock, it is mandatory to feel the central and peripheral pulses. If this step is skipped by the participants, it is more appropriate for the debriefer to formulate an absence of observation in this manner: "I did not see checking the pulses…", "I wonder if the shock is severe it may impair pulses…", and "I am curious to know why the pulses were not checked or if I missed it?" On the opposite, the more "natural" way would be: "I observed you did not check the pulses…" But the latter sentence would be felt as an offence as it links a "you" with a negative form which is a missed action by a specific participant.

Taking the same example, after a simulation of CPR on a 3-year-old child: "I observed that during the resuscitation of this child, the chest compressions were at the rate of 60–65/min. I am concerned about this low rate as it could lead to insufficient blood flow, especially to the brain and impair recovery, or even prevent from returning to a normal cardiac rhythm. I am curious to know why chest compressions were performed at that rate?"

As the example above states, the question remains wide open. This is the exploration of the learner's mental frame. The debriefer should ask what was the hidden intention behind this low rate of chest compressions. In this example, the learner answered: "I felt that my colleague who was trying to put the intraosseous access was in trouble, so I slowed down the rate for him to manage the IO!"

Here the learner's mental frame was revealed: intraosseous (IO) access and the urge to get the epinephrine bolus were given priority over the chest compressions, which is erroneous. Thus, good-judgement debriefing was the only debriefing technique that could allow revealing an erroneous mental frame on the part of the

learner. This would have otherwise been kept concealed and maybe responsible for recurrent incorrect actions with adverse effects on real patients.

Furthermore, in this real simulation example, the supervisor did not notice another gap in performance—a technical one—that occurred during the scenario. Why were the chest compressions interfering with the IO access insertion process? It is because the IO access was attempted in the proximal tibia site without putting a roll under the knee to desolidarise the leg from the trunk of this paediatric patient. This "clinical skills" technical gap on the part of the other learner also has to be addressed during the debriefing as it can lead to detrimental consequences similar to those seen in this example. As part of the debriefing, team members should be encouraged to provide feedback to one another while treating a patient to ensure optimum care at all times. This forms part of the 'mutual support' element of CRM (see Table 1.3) which can sometimes be seen as a core aspect of the adequate management of a situation as opposed to being a secondary element (Carbo et al. 2011; Gangaram et al. 2017). Rather than being two separate "errors" committed by two distinct practitioners, it needs to be considered as two "misjudgements" committed by the team, and all can learn from uncovering what happened and how the situation should have been ideally handled.

As you can imagine, if the debriefing had been done according to the judgemental technique, no improvement would have been made in the future because the real gaps in performance (erroneous mental frame and technical error) would have been kept unexplored. Furthermore, it may have been perceived as an offensive comment to the learner, whereas this learner was in fact trying to solve a problem faced by his fellow clinician during the resuscitation process. It was not due to a lack of knowledge regarding the chest compression rate for children but an attempt of providing direct support by altering their own CPR practice inherently caused by another clinical skills error which also needed to be discussed and could otherwise have easily been missed.

The non-judgemental technique would not have addressed the gaps in performance either as it would have just pointed out the low chest compression rate without exploring its causes. Nevertheless, the soft approach of non-judgemental debriefing may have safeguarded the learner from any feeling of causing harm to the patient and emphasised treatment and intervention priority in relation to the patient's benefit.

Paradoxically, the good-judgement debriefing technique is the only debriefing technique that was able to discover gaps in performance. It can be felt as paradoxical as it is the only technique where the debriefers have to state exactly the reasons for their concern. On the first impression, this part could appear to be harsh or rude to the learner, but it will not be the case as long as it is connected to the debriefers' own point of view—their mental frame. At this point, it is important to say that in this type of debriefing, it is much better to use the pathophysiological explanations of the recommendations as they become the debriefers' own mental frame, instead of stating the international recommendations as the rule, even if they are linked or identical and evidence based. The difference lies in the perception from the learner. The first approach protects the learners from the feeling of offence, as the explanation refers to the debriefers' own mental frame and can be presented as a teaching

point to reflect on rather than a given fact they may perceive as being criticised for having forgotten. In other words, the second approach can be felt as a non-observance of the international recommendations that apply to everybody and makes it sound like a worst mistake or shortcoming.

As we can see, the good-judgement debriefing technique uses two potent drives: (1) referring to the debriefers' mental frame as a safety from making a potentially offensive comment (advocacy) and (2) questioning "why", asking what the reasons for the actions were (inquiry). Combining these two during the debriefing phase allows the best learning to take place and provides a shared satisfaction regarding the discussion that takes place.

How many times should the advocacy-inquiry technique be used with the participants during the analysis phase of debriefing?

It is reasonable to use it a few times (two to four times), but it depends on the time available, nature of the performance, learner group, learning objectives, etc., each time addressing directly the participant who performed the specific action that needs to be unravelled. It can be to the leader or any other team member.

The observations reported by the debriefers should be carefully phrased, objective, factual, and of interest; otherwise, the answer could be: "So what?"

At this point, it is interesting to notice that the link between mental frame/process/action is not always a bijection, i.e. a correct action can be displayed with an erroneous mental frame. This emphasises the importance for the debriefer of maintaining an honest, curious, or inquisitive approach during debriefing, no matter what has been observed. For example, anybody knows that septic shock, once diagnosed, implies application of high flow oxygen to the patient, using a high concentration oxygen mask, as the first step of therapy. Let's imagine that during a classical septic shock scenario, a nurse assistant puts the high concentration oxygen mask on the patient after opening rapidly two drawers of the emergency cart. This quick opening of the drawers seemed strange to the debriefer. It aroused their curiosity, so during the debriefing phase, the debriefer said to the nurse assistant: "I noticed that before applying the high concentration oxygen mask on this patient, you rapidly opened and closed the drawers, why?" The quick answer from the nurse assistant was, "I did not find the nasal prongs!"—which revealed a wrong mental frame, i.e. thinking that septic shock first needs low flow oxygen through nasal prongs. So, the appropriate management of the patient during the scenario with the high concentration mask was only because the participant's preferred oxygen delivery adjunct was not readily at hand. This gap in performance was not actually observed and could not have been addressed without careful observation of the whole scenario from the beginning and using a questioning approach of what had been noticed by the debriefer. It underlines the need to keep a very focused mind and scrutinise every details while observing the scenario, and to be curious enough during the debriefing to examine everything that could appear to be strangely performed. An insignificant move may express a gap in performance due to an erroneous mental frame or assumption that should require proper debriefing and closure.

Is there a difference of inquiry technique according to the learners' status? The classical form of inquiry by asking "why?"—being willing to investigate the mental frame of the learners—is usually done when the learners are not novice. Asking

"why?" does not make any sense towards novice learners since they might not own a constructed mental frame yet. Then the question could be close to "What were you attempting to perform?" in order to balance the "what" and the "why" according to the learners' abilities and knowledge in a specific domain. They may be relatively able or skilled in a particular domain and be a beginner in another.

2.6.4   How to Modulate the Use of Advocacy-Inquiry During Debriefing?

Advocacy-inquiry is not a debriefing strategy generally used on its own but rather needs to be utilised in conjunction with other techniques that also promote reflection and understanding of scenario participants' actions. "Promoting Excellence and Reflective Learning in Simulation" (PEARLS) has recently been presented as an integrative approach of debriefing (Cheng et al. 2016a; Eppich and Cheng 2015). In this PEARLS approach, the authors differentiate three strategies of providing a feedback during debriefing according to the nature of the performance gaps: directive feedback, facilitator-driven plus/delta debriefing, and advocacy-inquiry (Eppich and Cheng 2015). Their differential use depends on various parameters such as time allocated for the debriefing, evidence of rationale to close the performance gap, and type of performance gap, i.e. knowledge (cognitive), skills (technical), or attitudes (communication, CRM). In their view, directive feedback is useful when time is short, the rationale is evident, and it is a gap related to technical or cognitive issues. On the other hand, the advocacy-inquiry technique is preferable when there is more time, the rational is not evident, and it is about addressing a gap dealing with cognitive or behavioural issues. The plus/delta strategy can be considered as a mixture of both (Eppich and Cheng 2015). Despite the fact that time could be limited and may modify the strategy that can be used effectively, we think that even facing technical gaps with rational-based evidence, using a structured debriefing approach with the advocacy-inquiry investigation technique is worthwhile as demonstrated through our previous example regarding CPR and IO access. Advocacy-inquiry may be used with a scenario participant to genuinely uncover what really happened and why so everyone, including the debriefer(s), can understand their mental frame. It may also be used for teaching purposes, whereby the debriefer had a clear idea of the scenario participant's mental frame but wants all learners to clearly understand their peer's thinking process and/or actions. Several of the points to reconsider are presented in the last column of Table 1.5.

An educational strategy and conversational technique used since the late 1980s in family therapy, potentially complementing the advocacy-inquiry approach, is called "circular questioning". It can be used in simulation debriefing as a form of focused facilitation to explore teamwork patterns (Kolbe et al. 2016). The major guiding principle of circular questioning is a communication process of creating distinctions and connections (Brown 1997). Creating differences while questioning is the fundamental principle underlying all question types. These differences include distinctions over time ("When did this problem begin?", "When was it the most difficult?"), between people ("Who among you all think that this was the most appropriate therapy?"), between parts of a person ("Do you think that at that time you were ruled more by your feelings or by your thoughts?"), and between situations

("In what situation is the problem most noticeable?") (Brown 1997). Then drawing connections include questioning about behaviours ("What happened after you asked him/her to do this…? What happened then? How did it all end?"), feelings ("What feelings emerge in you when he/she calls you incompetent?"), beliefs ("When someone is reluctant to help you out during a difficult task, what do you think?"), meanings ("How do you understand when he/she says that…"), and relationships ("When this… happens, how do you think that affects team dynamics?") (Brown 1997). This mixture of questioning on differences and creating connections obtained by circular questioning can be helpful during a debriefing to create a very interactive discussion with several participants and to direct the dialogue towards a more complete understanding of the scenario they experienced from a teamwork perspective (Kolbe et al. 2016). It may help them develop new perspectives regarding interrelations among the multiple elements or factors mentioned earlier (e.g. people, situations, behaviours, feelings, etc.) and hence is greatly complementary to the advocacy-inquiry process. It directly links up to the interrelations of the SHELL model (Software-Hardware-Environment-Liveware-Liveware) of Human Factors science (Carayon 2006) where in the clinical context: protocols, therapies, and treatment guidelines are the software; the medical equipment is the hardware; the clinical setting, the noise, and luminosity are part of the environment; and the team leader and members are the liveware.

Nevertheless some factors may impact the debriefing design and structure, such as the intended learning objectives of the scenario, the complexity of the case, the level of clinical experience of the participants, their prior experience with the simulation environment, the occurrence of expected events during the scenario (caused by the participants or other events of the simulation), the time available for the session, the role and purpose of the simulation in the overall curriculum, and the individual personalities and relationship between participants (Fanning and Gaba 2007). All of the above factors are to be considered in the singular or repetitive use of the advocacy-inquiry approach during the debriefing process of simulation experience.

2.7   How to Close Performance Gaps?

Once a deficiency or performance gap has been identified, it has to be "closed", preferably through a proper inquisitive analysis; otherwise, it will persist and repeatedly become an issue potentially compromising patient care or team dynamics. Closing the performance gap relies on three steps as illustrated in Fig. 2.1.
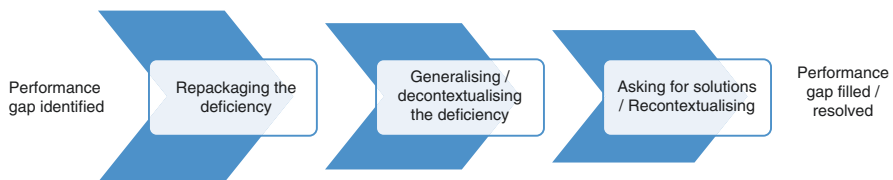
Fig. 2.1 Three-step approach to closing a performance gap during debriefing. Adapted from Weinstock (2013)

The first one is "repackaging". Sometimes it is obvious, yet most of the time, this step is necessary. It is important to make sure the debriefer has a clear understanding of the causal relation between the perceived participants' frame and their actions, whether it leads to failure or success (Kuiper et al. 2008). That means that the debriefer has to rephrase what the scenario participant said or did and check if it is an accurate interpretation. If we use the previous example (3-year-old child with CPR): "What you are saying is that you were waiting for your colleague to establish IO access before performing chest compressions at a rate of 100 per minute. Is this an accurate interpretation?" Presenting the interpretation as a straightforward and direct statement generally triggers a nod of approval from the learner.

The second step is "generalising". The debriefer can take advantage of this precise moment by inviting the rest of the group to take part in the debate. Sometimes generalising is not easy prior to the closure of performance gaps, and it can be performed after. It is always interesting to widen the scope of the discussion with all the learners in order to associate situations where similar performance gaps could occur.

Getting back to the previous example (3-year-old with CPR), the generalisation could be as follows: "Well, clearly the resuscitation effort is a situation where several individuals perform different tasks at the same time. When this happens, one can perceive that since some tasks seem equally urgent, it is tough to choose which one to perform first over others. Has anyone ever experienced such a prioritisation conflict during another intervention or situation?" This part (decontextualising the situation) aims to gather impressions from all learners that were not especially linked with the scenario that just occurred and to report other examples that could similarly be explored through debriefing to benefit everyone. This is an open question that ideally engages learners who were observers of the scenario being debriefed.

The third step gets back to the current scenario by asking for solutions from the learners. This is a form of "recontextualisation" of the identified deficiency that is being addressed. In this case, auto-feedback by the participant(s) with a gap in performance is always more potent than feedback given by their peers or the debriefers themselves. This is why the debriefer could first try to ask the participant with a performance gap to verbally self-correct their action as it would be less likely to be negatively perceived. "So, getting back to paediatric CPR, we have three tasks running at the same time: bagging with oxygen, chest compressions, and putting an IO access needle for the epinephrine injection. Is the administration of epinephrine via IO access a priority over the chest compressions during CPR? That is the question!" If the participant cannot answer this question, the way to proceed is by asking the other members of the team. It may allow for the correct answer to be verbalised, pointing out that the "C" (circulation) part of the ABCs of paediatric CPR takes priority over the epinephrine injection, as it is crucial to maintain this oxygenated blood flow to vital organs via the best possible rate of chest compressions, which is 100–120 per minute. It helps to avoid the consequences of insufficient or interrupted blood circulation and promotes

adequate distribution of the epinephrine in the systemic circulation when injected. This argument is referring to the logic of management of cardiac arrest in children as is described in the international paediatric resuscitation guidelines (Biarent et al. 2010). If this explanation does not come out from a participant or other learners who was observing the scenario, the only feedback left is the debriefer's directive feedback which is faster yet not as effective as the participant's own verbalisation of the approach which should have been adopted since it will in most instances hardly be remembered after a while as the deep learning through reflection will not have occurred. At that point, an option for the debriefer would be to approach this issue, step by step, and not to directly explain what the correct management of CPR is. For example: "Considering an unconscious child showing no signs of life, the airway is cleared, and bagging is started, if the child is not breathing and still shows no sign of life, what has to be done next?" If none of the learners comes up with a solution, the debriefer has to close the gap. It is important to make sure an investigated performance gap ends up being resolved with a correct understanding of management solutions by all the learners. This very important part of the debriefing takes time. One should progress carefully along the tracks on the chosen debriefing framework and spend sufficient time for the closure of performance gaps as it represents the "transfer of knowledge" part (from the debriefer to the learner) of the simulation-based education process.

This progressive approach would help the learner understand that chest compressions are implemented early in order to establish a sufficient cardiac output and that the epinephrine comes in addition to it but cannot replace it. Such guided reflective phase will get learners to realise that medical management strategies are often about piling up complementary procedures which may somehow be conflicting in some circumstances and give rise to a situation where good clinical judgement needs to be exercised in order not to compromise the patient outcome. It may be interesting to expand the debate by asking: "Can you think of any strategy to overcome this problem in the future?" Referring to the pathophysiology of a management can make the relative priority of actions clearer and help to prioritise such actions in difficult situations. It is noteworthy to point out that in this example, it is never said in the recommendations that chest compressions should be slowed down if the IO access insertion process is difficult to achieve, but it is not stated either that the rate of chest compressions should be kept at 100–120 per minute in such a case.

At this point, it is important to focus on individual and team goals because it represents a valuable approach for participants to overcome their gaps, deficiencies, or mistakes before the next simulation session or their real clinical duty. Highlighting these goals gives them direction and motivation and helps them sustain the expected behaviour (Gardner et al. 2016). Emphasis should be put on application to real clinical practice as it represents the "transfer of knowledge" from simulation practice to practice real, which is the most authentic proof of the efficacy of a simulation-based education program.

2.8   Verification of Closure of Performance Gaps

Once the closure of performance gaps is over using the approach illustrated in Fig. 2.1, the debriefing is almost finished, but it is very important to make sure that beneficial learning occurred with the participants by a verification feedback. It helps reviewing the important points as recommended in the RUST guide to debriefing (Karlsen 2013) (see Fig. 1.2). As we have previously seen, there are three ways of providing feedback: auto-feedback, feedback by peers, and directive feedback by the debriefer who becomes an instructor (see Sect. 1.8.1 and 1.8.5). The auto-feedback is a learner-centred approach which is very effective for closing performance gaps and test understanding as it involves asking a very simple question to the learners:

"If you had to do it again, what would you do differently?"
or
"If you had to perform the same scenario right now, in what way would your approach differ?"
or
"If you happen to deal with the same case at the hospital tonight, what learning point will you particularly consider?"

The debriefer should keep in mind the list of the different gaps of performance that were brought up and debriefed. All of them should come out again in the answers to those questions. If it is not the case, the debriefer should ask additional questions such as "Anything else?". The best way to go is—and we cannot stress this enough—to keep the debriefer in a facilitator role with a questioning approach. It may start with "What did you learn today?" and keep asking "What else?" until all the points reviewed have been mentioned.

A complete reminder of all the points debriefed by the team members is the guarantee of the learning value of a debriefing. It corresponds to the "take-home message" component of the RUST guide to debriefing (Karlsen 2013) (see Fig. 1.2). If the summary is incomplete, the debriefer should try to provide hints to the learners, so they can find the expected answers instead of directly giving away the solutions. A complete and persistent absence of recalling any improvement points despite the debriefer's efforts is synonymous of the debriefing's inefficiency. So this time dedicated to control is very important because it confirms the essential assessment of the debriefing's relevance and understanding of the learning points by the learners.

2.9   How to Run the Summary and Conclusion of a Debriefing?

The summary and conclusion of the debriefing should last a few minutes (Weinstock 2013). It must be short and aim to maintain favourable learning conditions. The facilitator needs to remain enthusiast and supportive to project

a positive image to the learners. The debriefer can sum up what has been talked about during the debriefing: any medical procedure or algorithm and a specific CRM issue—but without going into details. It is even better if the debriefer asks participants "What did you learn today?" After recall from the participants, the debriefer can ask if there are any questions. Generally, at that point, some learners speak up about how they tend to lack solid didactic references to study on. Others might express the need to practise a specific procedure several times on a task trainer. These two types of learners would be delighted if the debriefer had to offer them a handout explaining the recommendations about the simulation session's topic and give them the opportunity to come back to the simulation centre in order to work on a precise procedure. We sometimes call this debriefer's response to participants' questions the "toolbox", as it provides complementary tools to enhance the understanding of the simulated situation (knowledge and skills) or simply be an invitation for the learners to come back to practise particular skills. It is sometimes included in the form of a list of references and websites at the end of a scenario template that can be shared with learners (Alinier 2011).

The closing words of the debriefer should be about thanking the participants, keeping everything confidential, and hoping that it was a useful experience for them. For example: "Thank you again for your very active participation during this session. Everything that was discussed during this debriefing will remain confidential and nothing will come out of this room. I hope that this simulation experience will be helpful for your future practice".

We should always remember that being an "educator" is an important responsibility, especially when taking the different roles of a debriefer or an instructor according to the simulation modality adopted or the phase of the educational activity itself. Any aspect of the debriefing can have a profound effect on the perception of the overall simulation session for the learners (Der Sahakian et al. 2015; Rall et al. 2000).

2.10   Summary of Some Key Debriefing Sentences

Maintaining a structured approach to a debriefing can be challenging. Improperly phrased questions can lead learners to lengthy, repetitive, or irrelevant discussions or may be perceived as very judgemental or even offensive. It is sometimes useful for debriefers to have access to a list of commonly used sentences or questions that are appropriate to use during particular phases of a debriefing, and Fig. 2.2 has been prepared to that effect. It is based on the personal experience of the authors but also includes elements (sentences and questions) adapted from other published work related to debriefing (Arafeh et al. 2010; Cheng et al. 2015a; Eppich and Cheng 2015; Gardner 2013; Jaye et al. 2015; Kolbe et al. 2016; Kriz 2008; Lavoie et al. 2015; Sawyer and Deering 2013).
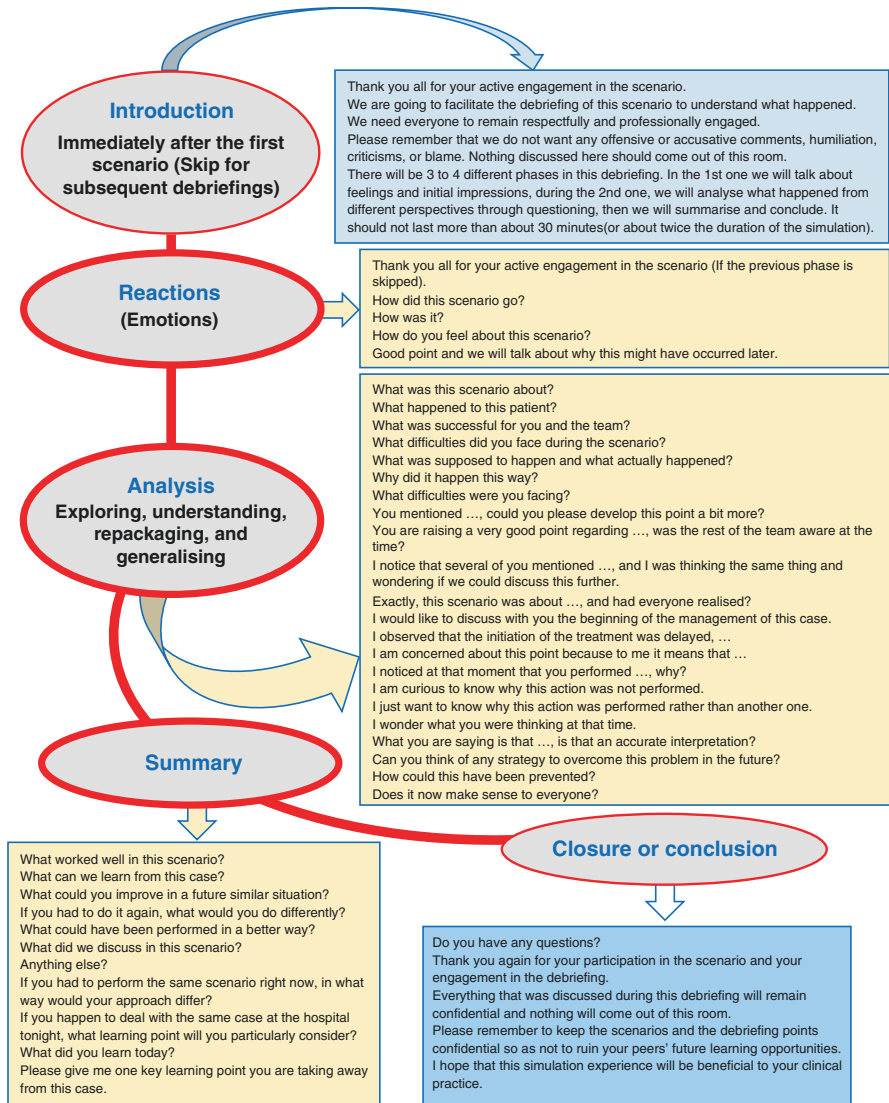
Introduction
Immediately after the first scenario (Skip for subsequent debriefings)

Thank you all for your active engagement in the scenario.
We are going to facilitate the debriefing of this scenario to understand what happened.
We need everyone to remain respectfully and professionally engaged.
Please remember that we do not want any offensive or accusative comments, humiliation, criticisms, or blame. Nothing discussed here should come out of this room.
There will be 3 to 4 different phases in this debriefing. In the 1st one we will talk about feelings and initial impressions, during the 2nd one, we will analyse what happened from different perspectives through questioning, then we will summarise and conclude. It should not last more than about 30 minutes(or about twice the duration of the simulation).

Reactions
(Emotions)

Thank you all for your active engagement in the scenario (If the previous phase is skipped).
How did this scenario go?
How was it?
How do you feel about this scenario?
Good point and we will talk about why this might have occurred later.

Analysis
Exploring, understanding, repackaging, and generalising

What was this scenario about?
What happened to this patient?
What was successful for you and the team?
What difficulties did you face during the scenario?
What was supposed to happen and what actually happened?
Why did it happen this way?
What difficulties were you facing?
You mentioned …, could you please develop this point a bit more?
You are raising a very good point regarding …, was the rest of the team aware at the time?
I notice that several of you mentioned …, and I was thinking the same thing and wondering if we could discuss this further.
Exactly, this scenario was about …, and had everyone realised?
I would like to discuss with you the beginning of the management of this case.
I observed that the initiation of the treatment was delayed, …
I am concerned about this point because to me it means that …
I noticed at that moment that you performed …, why?
I am curious to know why this action was not performed.
I just want to know why this action was performed rather than another one.
I wonder what you were thinking at that time.
What you are saying is that …, is that an accurate interpretation?
Can you think of any strategy to overcome this problem in the future?
How could this have been prevented?
Does it now make sense to everyone?

Summary

Closure or conclusion

What worked well in this scenario?
What can we learn from this case?
What could you improve in a future similar situation?
If you had to do it again, what would you do differently?
What could have been performed in a better way?
What did we discuss in this scenario?
Anything else?
If you had to perform the same scenario right now, in what way would your approach differ?
If you happen to deal with the same case at the hospital tonight, what learning point will you particularly consider?
What did you learn today?
Please give me one key learning point you are taking away from this case.

Do you have any questions?
Thank you again for your participation in the scenario and your engagement in the debriefing.
Everything that was discussed during this debriefing will remain confidential and nothing will come out of this room.
Please remember to keep the scenarios and the debriefing points confidential so as not to ruin your peers' future learning opportunities.
I hope that this simulation experience will be beneficial to your clinical practice.

Fig. 2.2 Key debriefing sentences and questions

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