Leadership

13

Case Study

A 12-year-old boy sustains a bicycle accident resulting in an open fracture of the mandible. Because the patient has a full stomach and mouth opening is reduced due to pain, the anesthesia resident decides to perform a rapid-sequence induction with thiopental and succinylcholine. The intubation is successful and uneventful, and anesthesia is maintained as a total intravenous anesthesia (TIVA) with propofol and remifentanil.

After 30 min of uneventful anesthesia, the saturation begins to drop slowly and sinus tachycardia develops. Under the assumption of insufficient anesthetic depth, the resident increases the concentration of propofol and remifentanil. The intervention, however, does not affect the tachycardia. The anesthesia resident checks the IV line to rule out soft tissue infiltration and auscultates both lungs. Breath sounds are equal bilaterally. Meanwhile the patient requires 70 % oxygen to maintain saturations above 95 %. Because the resident is unable to find any apparent cause for the clinical deterioration and because of the danger of the situation, he calls for help from his attending physician.

When the attending physician enters the operating room a few minutes later, the patient is receiving a minute volume of 9.5 l/min to maintain the end-expiratory CO_2 at 45 mmHg. Infrequent monomorphic premature ventricular contractions are noted on the ECG. The attending tells the resident to insert an arterial pressure line into the radial artery and to obtain an arterial blood gas. The lab results show a combined respiratory and metabolic acidosis with a mild alveolo-arterial difference in the partial pressure of oxygen and a potassium concentration of 5.6 mmol/l. Based on the induction of anesthesia with succinylcholine in conjunction with the current clinical picture and the lab findings, the attending physician decides to interpret the clinical deterioration as symptoms of malignant hyperthermia and to treat it accordingly.

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The patient's body temperature is 37.2 °C (99 °F). He informs the maxillofacial surgeons about the seriousness of the condition and asks them to interrupt the operation. Dantrolene is dissolved in solution and administered to the patient. The arterial blood gas is monitored closely, and the appropriate treatments for pH abnormalities and hyperkalemia and renal protection are initiated. Cardiovascular stability is maintained by catecholamine support. Due to an increase in the patient's temperature to 39.7 °C (103.4 °F) over 20 min, the attending anesthesiologist initiates external cooling procedures which are accomplished by the surgeons and OR technicians.

Twenty minutes after the administration of dantrolene, the heart rate begins to drop slowly, and the acid-base status begins to improve. Minute ventilation and FiO_2 are gradually reduced. Once the treatment begins to indicate a reassuring response by the patient, the attending physician contacts the pediatric intensive care unit (PICU) and requests a bed for the patient. He informs the pediatric intensivist about the clinical course, the measures taken, and the current clinical status. An hour later, the patient is further stabilized and is transferred to the PICU. Over the course of the next day, the patient develops a compartment syndrome of the left lower leg requiring reoperation. The anesthetic is trigger-free for malignant hyperthermia and proceeds uneventfully. The patient is extubated postoperatively and is transferred from the PICU to the general ward on the following day. He is discharged from the hospital without any residual symptoms. The patient and his family are tested for their susceptibility to malignant hyperthermia, and both the patient and his younger brother have positive results.

13.1 The Case for Leadership

Successful team performance in healthcare and good leadership are two sides of the same coin. Teamwork in teams that are organized hierarchically cannot function properly without a sound concept of leadership, and vice versa.

When talking about leadership in a high-stakes healthcare environment, the status of a critical situation needs to be differentiated from that of everyday life. Nevertheless, both leadership approaches cannot be considered completely independent from each other. It is likely that many of the same senior healthcare providers will be responsible as leaders for their staff members in routine situations as well as in emergency situations. Whether or not leadership in a medical emergency succeeds will depend to a great extent on the daily interactions of the leader with the team. What then are the core functional competencies of a leader and which behaviors are required to lead successfully? Which personal characteristics and abilities are required to bring out the best in teams? How can leaders attain above-average results while maintaining an environment of trust, motivation, and high job satisfaction? Of the extensive body of research on this topic (overview, e.g., Bass and Stogdill 2007; Manser 2008), the results most important for acute healthcare are summarized in what follows.

13.1.1 Leadership in Everyday Life

Leadership in everyday life has a threefold purpose. First, leadership is directed at the *activities* of staff members. This is done by:

- Assigning tasks
- Defining goals
- Helping to provide the necessary resources
- Monitoring the execution and the results
- Resolving team conflicts

Second, leadership in healthcare has a lot to do with a leader's ability to *assess* clinical skills and the training status of staff members. Leadership comprises creating learning opportunities for each staff member and supporting their career. Therefore, leaders in healthcare should always be concerned about human resource development efforts. By assuming a leadership position, healthcare providers volunteer to motivate staff members, to value their individual personality, and to empower teammates to increasingly take responsibility for their working environment. Leaders inspire staff members by who they *are*, what they *know*, and what they *do*.

A third aspect to leadership, specific for high-stakes environments, has been proposed by the Institute of Medicine report (Kohn et al. 1999) and many other publications: Leaders in healthcare should also be *role models* for a patient safety-oriented approach to patient care. In order to mitigate the effect of inevitably occurring errors in patient safety, leaders should create a working environment where healthcare providers feel encouraged to be alert to threats to patient safety, to voice concerns if they believe that an action may harm the patient ("advocacy and assertiveness," Chap. 12), and to monitor task performance and workload of their team members (cross-monitoring, Chap. 11).

Hierarchy of authority frequently inhibits people from expressing themselves. Effective leaders flatten the hierarchy, create familiarity, and manage to create an environment that feels "safe" for team members to speak up when they have information or safety concerns. By inviting team members to contribute their thoughts and ideas, a leader can facilitate a shared mental model of patient-related and operational issues (Chap. 11). This is done by communicating (verbally and nonverbally) a message of support and empowerment, and conveying an understanding of the paradox of errors is normal in the medical high-stakes environment (Table 13.1), while we do whatever we can to mitigate or eliminate those errors.

Some of the basic principles of leadership in everyday life are:

- *Set an example:* Be a good role model for your staff, set a high standard for personal conduct, and adhere to this standard in all situations. Sincerity, integrity, and ethical demeanor are trust-inspiring characteristics, and communicate to the team that you are a safe person with whom to work. Team members not only want to hear what they are expected to be or to do; they also want to see it lived out in *your* life as well.

Table 13.1 The most important words a leader can speak (author unknown)

The six most important words: "I admit I made a mistake"
The five most important words: "You did a good job"
The four most important words: "What is your opinion?"
The three most important words: "If you please"
The two most important words: "Thank you"
The one most important word: "We"
The least important word: "I"

- *Promote speaking up* with observations, concerns, and questions. Actively encourage proactive coordination behaviors in your team members (Edmondson 2003). What you sow in "times of peace," you will reap "when the heat is on."
- *Be technically proficient:* As a leader, you must know your job and have a solid familiarity with all task demands.
- *Know your staff members by name* and look out for their well-being.
- *Be supportive, advocating, and empowering:* Believe in people and communicate that belief.
- *Think and behave in team concepts:* Communicate to your staff that it is *we*, not *me*, who do the job.
- *Keep your staff informed:* Practice good communication skills (Chap. 12).
- *Foster a sense of responsibility* within your staff.
- *Help resolve conflicts within a team:* Recognize areas of tension between individuals, and help them apply conflict resolution techniques (Chap. 12).

13.1.2 Leadership in a Critical Situation

The case study of a malignant hyperthermia (MH) is an example of a time-critical medical emergency that necessitated leadership in an emergent situation for successful management. In contrast to leading people in everyday life, effective leadership behavior in a critical situation is more centralized. The requirements for leadership in an emergency situation are described in greater detail below.

13.2 Leadership Theories

13.2.1 Approaches to Leadership

There are diverse definitions of leadership that focus either on the position of the leader (singular or collective) or the purpose, process, and hallmarks of leadership. Most definitions come from an industrial or management setting and cannot readily be applied to healthcare. Leadership in the context of acute medical care can be defined as the process where a person assumes responsibility to influence and direct

the performance of other team members by utilization of all available resources toward the achievement of a defined goal. A leader in a critical situation can be identified and defined as a team member whose influence, at least temporarily, on group attitudes, performance, and decision-making exceeds that of other members of the group. Research on the nature of leadership has proposed several theories, which all emphasize certain aspects of leadership. The earliest theories emerged during the first part of the twentieth century and focused on the qualities that distinguished leaders from followers. Subsequent theories looked at other variables such as situational factors and skill level. For the context of healthcare in a high-stakes medical environment, the following theories are relevant ones (e.g., Bass and Stogdill 2007).

13.2.2 "Great Man" Theories

This theoretical approach may still be rarely encountered among senior physicians as the deluded self-perception of a person with respect to his leadership abilities. This theory originally assumed that the capacity for leadership is inherent and that great leaders are born, not made. The historical roots to this theory are based on the results of early research on leadership where the leaders studied often came from the aristocracy, which contributed to the notion that leadership had something to do with "breeding" and the right genes. The leadership style of people who have this "great man" self-assessment adheres to the idea of this notion of personal distinctiveness. While the weak reasoning that postulates this idea of leadership might seem nearly ludicrous, there are a surprising number of situations where it seems to be the primary rule used to select who will be responsible for leading a critical event. As a result, teamwork with such a leader often proves to be far less than optimal.

13.2.3 Trait Theories

If we had to choose in an emergency whom we would like to follow as a leader, it's quite likely that certain individuals come easier to mind than others. Personal experience has taught us that these people, besides having a firm clinical foundation, seem to be made of "the right stuff" even under the most adverse circumstances. Under the guiding assumption that the "right stuff" must be identifiable in terms of certain qualities and traits, research focused in the 1940s and 1950s on the discovery of these alleged inherent characteristics (Stogdill 1948). However, the results were inconsistent and only showed that different leadership traits predominated in different situations. Because trait theory was unable to identify future leaders and only confirmed those persons who already were recognized by their peers as being leaders, researchers lost interest. Since the 1980s the trait theory of leadership regained some popularity by introducing concepts of charisma and charismatic leadership. Among the major problems with trait theories is

the fact that traits useful for leadership usually have a downside (such as suppressing others, overconfidence), and no theory has yet stated "how much" of these traits really makes a good leader. Furthermore, trait theories promote the idea that adults are as they are, which makes educational efforts, such as developing leadership skills, seem worthless from the start. Also, the focus on traits implies that all persons need to lead in the same way regardless of the tasks or the environment in which they perform.

13.2.4 Behavioral Theories

In contrast to the static character of the trait perspective that conceptualizes leadership as a set of properties possessed by certain individuals and residing *in* them, behavioral theories take a process stance, claiming that leadership is a phenomenon that *resides in the interactions* between leaders and followers and makes leadership available to everyone (Northouse 2012). As a process, leadership can be observed in leader behaviors and can be learned. According to behavioral theories, among the skills a leader must have are interpersonal skills, conceptual skills, and technical skills. This approach opens broad possibilities for leadership development, assessment measures, and training interventions because, as the theories go, good leaders will develop through a never-ending process of self-study, education, training, and experience. In addition, poor leadership behaviors can be identified that contribute to teamwork failure, thus adding a second layer of understanding. This approach seems to confirm personal experience; most healthcare professionals can compare their present performance to the time when they first started the job and will find that their leadership ability indeed has improved. But behavioral theories tend to completely ignore the possibility that trait theories and the influence of personality add something to our understanding of leadership. After all, not every person will be able to learn and demonstrate appropriate leadership behavior.

13.2.5 Styles of Leadership

Leadership style is the manner and approach of providing direction, implementing plans, and motivating people. As seen by the employees, it includes the total pattern of explicit and implicit actions performed by their leader (Newstrom and Davis 1993). The first major study of leadership styles was performed by a research group led by Kurt Lewin, who was able to establish three different styles of leadership (Lewin et al. 1939). These styles differ in the degree of employee orientation (relationship and person orientation) and task orientation (performance orientation) (Blanchard et al. 1985).

The *laissez-faire style* (from the French: "just let things happen") is characterized by a low task focus and a low person focus. The *laissez-faire* leader steps back from the leadership role. The leader's involvement in decision-making is minimized, thus allowing people to make their own decisions and to do as they think

best. This leadership style is sometimes called a "delegation" or "free rein" style, although the "delegation" comes more often from the leaders' unwillingness to lead than a deliberate act of delegating responsibilities to staff members.

If a leader has a *democratic* (*participative*) *leadership style*, then his or her primary focus is the well-being and the needs of the team members. The execution of task requirements is subordinate to the preeminent goal of team harmony and coherence. The democratic style is characterized by discussions in which the tasks are democratically discussed and divided. The leader tries to listen to as many voices as possible and to compromise when necessary so that everyone feels okay about decisions and plans. Team members may be involved in the decision-making even in situations where quick and unambiguous commands of the leader are necessary.

In clear contrast to the democratic approach is the *autocratic leadership style*, which is defined by unilateral control with a strong focus on the execution of the leader's view of task demands and efficacy, but with little concern for people. In the autocratic style, the leader may use pressure, threats, and any method that seems to work to achieve conformance. Leaders are viewed as having the solutions to problems; decisions are made without consultation; tasks are distributed with a detailed description of the procedure; and task execution is monitored closely. Communication is almost entirely top-down with a clear and hierarchical decision structure. The authoritarian leadership style is often perceived by team members as being arbitrary and paternalistic. An autocratic style can work in a performance environment where there is no need for input on the decision, where the decision would not change as a result of additional input, and where the motivation of people to carry out subsequent actions would not be affected whether they were or were not involved in the decision-making. This is clearly not the case in acute medical care. A modified autocratic style with its clear command structure can be effectively applied during cardiopulmonary resuscitation or during the management of natural or human-made disasters such as mass casualties (e.g., Koenig and Schultz 2016). The modification allows for feedback and the volunteering of information. In the context of high-stakes, time-critical healthcare, however, the autocratic leadership style causes the highest level of discontent among team members and generates an information-poor environment instead of the needed information-rich environment.

An *integrative leadership style* combines a high focus on task execution with an equally high attention to the relations with and among team members. The concern of the leader is directed at the execution of tasks *and* the integration of team members. Leaders engage in discussing, convincing, and explaining to achieve a high degree of mutual agreement and shared mental models (Chap. 11). Depending on the dynamics of a situation, the integrative style in a high-stakes medical environment can either be directive (authoritative) or cooperative (Fig. 13.1).

A final task-vs.-person orientation is of practical importance: the difference between a transactional and a transformational leadership style. In brief, transactional leadership is based to a varying extent on the underlying assumption that people are motivated – and made compliant – by reward and punishment. As a result, employees receive a salary and other benefits, and the employer in turn gets authority over the subordinate.

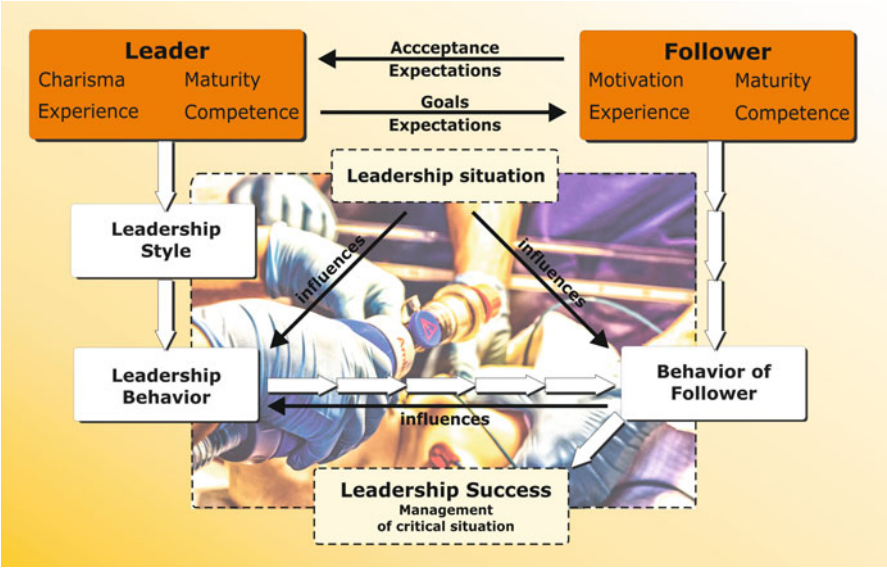

Fig. 13.1 Model of integrative leadership in a high-stakes medical environment. A leaders' personality, leadership style and behavior, the interaction with followers, and characteristics of the leadership situation have a major influence on leadership success

13.2.6 Transformational Leadership

While transactional leadership has more of a "telling style," transformational leadership pursues a "selling style." Leadership expert James MacGregor Burns introduced the concept of transformational leadership as a process where "leaders and their followers raise one another to higher levels of morality and motivation" (Burns 1978). Unlike in the transactional approach, this process is not based on a "give-and-take" relationship, but on the leader's personality and on his or her articulation of an energizing vision and challenging goal. Bernard M. Bass later further developed the concept of transformational leadership (Bass 1985): Evaluating managers tagged as high performers by their superiors as well as by their followers, they were able to define essential characteristics of successful transformational leadership. According to this research, a leader …:

- … *has charisma*: Influence is a result of integrity and fairness, provides a vision and a sense of mission, sets clear goals, instills pride, and gains respect and trust by "walking the talk."
- … *inspires*: Communicates high expectations and inspires people to reach for the improbable, uses symbols to focus efforts, expresses important purposes in simple ways, encourages others, stirs the emotions of people, and gets people to look beyond selfish interests.
- … *stimulates intellectually*: Promotes intelligence, rationality, and careful problem solving.

- … *gives individual consideration*: Gives personal attention, treats each employee individually, coaches, and advises.

As a result, transformational leadership occurs every time leaders broaden and elevate the interests of their employees, generate awareness and acceptance of the purpose and mission of the team, and stir their employees to look beyond their own self-interest for the good of the group. Studies were able to show an association between transformational leadership styles and positive outcomes in comparison to other leadership styles. Transformational leadership is positively associated with employee outcomes including commitment, role clarity, and well-being (e.g., Judge and Piccolo 2004; Michaelis 2009).

Many authors argue that by defining transformational behavior and by implementing it into leadership training, leaders-to-be can learn the techniques and obtain the qualities they need to become transformational leaders (Avolio and Bass 2004). But although transformational leadership has been in focus for some years (e.g., Gardner et al. 2010), it is still unclear under which conditions this leadership style works best.

13.2.7 Shared Leadership Theory

All of the above theories share one general assumption: Leadership must be exercised by one individual in order to be effective. However, a growing body comprised of positive research evidence from manufacturing firms, management, school administration, and more recently in aviation and the military has challenged this conventional assumption. Models have successfully been implemented where the leadership task is distributed among team members rather than focused on a single designated leader. This shared leadership, defined as "a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals"(Pearce and Conger 2003), has been advocated as an alternative way of reducing task overload and improving team performance of complex tasks. Although not a novel invention (Gibb 1954), the theory of shared responsibility has only recently been applied in the context of acute healthcare (Flin et al. 2003; Klein et al. 2006; Künzle et al. 2010; Tschan et al. 2006; Xiao et al. 2004). The results have been promising: In certain cases, shared leadership appears to facilitate performance in complex tasks given that no individual team member possesses all the resources necessary to address all task demands. Thus, shared leadership is likely to be an effective strategy to overcome the one-and-only-one leader approach – especially if task complexity is high. The distribution of leadership in situations with high task load induced by nonroutine events according to the skill sets rather than formal leadership ranking is very similar to the concept of "deference to expertise" from high-reliability theory (14.2.3), where decision-making is allocated to the person with the most expertise and is separated from formal hierarchy. Although the importance of sharing leadership behavior among team members in low workload situations is corroborated by

research evidence, its role in high-stress situations remains unclear. Shared leadership runs contrary to a widespread and established notion that explicit leadership by the most experienced clinician is paramount to deal with severely injured patients. Further research is warranted to help clarify the role of shared responsibility in acute care medicine.

13.2.8 Followership: No Leadership Without Exemplary Followers

For decades, followership has been an understudied topic in organizational science. Whereas organizational literature is full of studies on leadership styles and characteristics, the preoccupation with leadership seems to have kept researchers from considering the nature and the importance of the follower in successful organizations. The underlying assumption was that good or bad leadership almost exclusively accounts for organizational outcomes. One important reason why "followership" hasn't been researched could be the negative connotation people give to the term *follower*. Whereas *followership* may be defined as the ability to effectively follow the directives and support the efforts of a leader to maximize a structured organization, the term is often stigmatized as denoting passive, weak, and conforming behavior (Alcorn 1992). While followership has taken a backseat to leadership for a long time, the last decades have witnessed a growing interest in followership (e.g., Kelley 1988). Research groups have started proposing concepts that do not reduce followers to passive people carrying out commands. In contrast, recent leadership theories emphasize the agreed-upon cooperation of leaders and followers in achieving common organizational goals (e.g., Yukl 2010). These goals can only be achieved if there is buy-in on the part of the follower. In a sense it is at the discretion of the follower to decide whether or not he or she will accept a certain person as leader. If he or she does not accept the leader, then followership be less than optimally executed and may fail altogether – not much gets done and what does get done may not be what the leader wants. Thus, the "only-leadership-count" stance within the tradition of literature on organizations ignores the fact that effectiveness of a leader is largely dependent on the willingness and consent of the followers to accomplish their leader's goals. Without followers, there can be no leaders.

Besides enabling an organization to meet its objectives, followership is important for patient safety efforts in that "being led" is not a passive process and following does not imply dispensing with independent, critical thinking. On the contrary, "exemplary followers" are neither passive nor conformist team members but provide a level of independent thinking that can prevent groupthink (Chap. 12) or spontaneous group decisions. In addition, courageous and honest exemplary followers will voice concerns and doubts and respectfully challenge their leaders, if they believe that patient safety is jeopardized. Without this safety net of competent and thoughtful followership, no healthcare organization can fulfill its commitment to safe patient care processes.

Finally, following and leading are not mutually exclusive characteristics. In some aspects, every leader is still a follower within his or her organization and vice versa:

Registered nurses train student nurses and are accountable to their head nurse; residents teach medical students and have attendings as their leaders. Attendings lead a team of nurses and residents in an emergency, but in turn are accountable for their actions to the head of the department.

13.2.9 Situational Leadership

In the last four decades, situational and contingency theories of leadership have been developed. Based on the work of Fiedler (Fiedler 1967), these models look at the impact of various factors to determine how leaders optimally function in different situations. The underlying assumption is that there is no one best way to influence people and that different types of situations call for different leadership behaviors. No single optimal psychological profile of a leader can be validated. Good leadership is adaptive with respect to a multitude of external conditions. The effectiveness of a given pattern of leadership behavior is contingent upon the demands imposed by the situation and by the followers' overall maturity. Depending upon how a leader assesses a follower's task maturity (i.e., the *ability* to perform a task) and his or her psychological maturity (i.e., the *willingness* to perform a task), differing levels of *directive* and *supportive* behavior can be effectively applied (Fig. 13.2). The extent to which leaders direct and support followers lends itself to categorizing four different leadership behaviors (Hersey and Blanchard 1977):

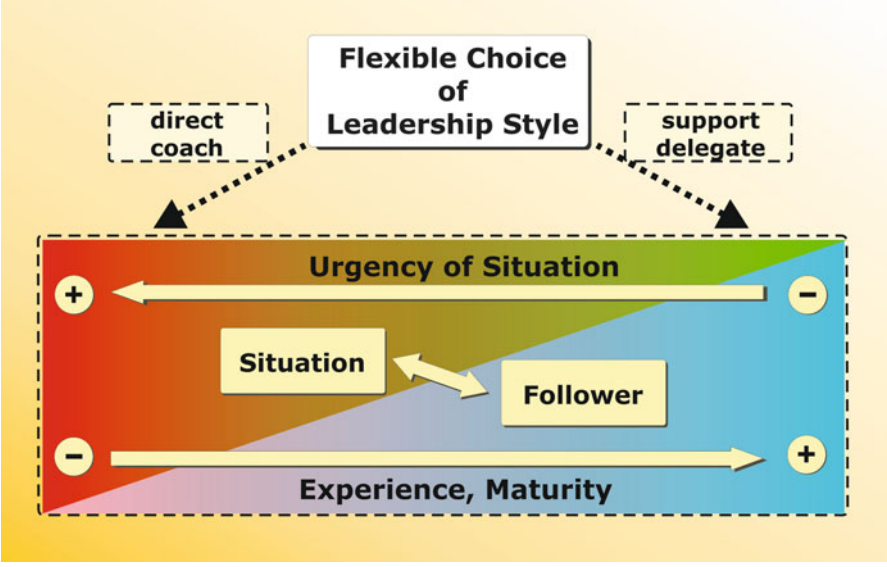

Fig. 13.2 Situational leadership in acute medical care. Leaders choose their style contingent upon the demands imposed by the urgency of the situation and by the follower's experience, maturity, and willingness

1. *Telling* is where the leader demonstrates high directive behavior and low supportive behavior.
2. *Selling* is where the leader demonstrates high directive behavior and high supportive behavior.
3. *Participating* is where the leader demonstrates low directive behavior and high supportive behavior.
4. *Delegating* is where the leader demonstrates low directive behavior and low supportive behavior.

As a result, leadership in everyday life differs from leadership in a critical situation. For example, having experienced ICU nurses as team members will evoke a different leadership behavior as compared to managing a crisis with an inexperienced trainee. The challenge for a leader, however, is to know when to apply which behavior and, conversely, to abandon a certain style when it is no longer warranted. Special caution is warranted when a highly directive "telling" style is used with experienced team members or for trivial tasks because it influences safety-relevant behavior (Zohar 2002). A follower may feel patronized and show recalcitrant behavior (Chap. 12) or may withdraw mentally from a situation. Versatility and adaptability are primary requirements needed for successful situational leadership. Fortunately, they can be trained and learned.

13.3 A Conceptual Framework for Leadership

Most likely, successful leadership in a high-stakes medical environment depends on a synthesis of these theories (e.g., the situational leadership model). In the frame model introduced here (following Gebert and von Rosenstiel 2002), three factors influence the success of this leadership process: the personality characteristics of the person who leads (leadership personality), the way the leading is done (leadership behavior), and the milieu in which leadership has to be assumed (characteristics of the situation) (Fig. 13.2).

13.3.1 Leadership Personality

Grounded in trait theory, there have been many different studies of leadership traits and skills. Results of research on leadership have not yielded consistency with respect to the combination of characteristics of a successful leadership personality. But there is some convergence. Skills that leaders need are technical skills in the job, conceptual skills (analytic and decisional), and human relation skills. Among the traits repeatedly identified as found in most leaders are self-confidence, decisiveness, high energy level, initiative, dominance, willingness to assume responsibility, intelligence, creativity, and being organized (Stogdill 1974).

13.3.2 Leadership Behavior

One factor has consistently been identified as an ingredient of successful leadership behavior: communication. To lead, one must communicate – with team members

and external resources (e.g., laboratory services, intensive care units from other departments, blood bank). Communication, however, is not an end in itself. Its purpose is to build a team out of individuals and to enable successful task performance. Current theories describing successful leadership behavior have been presented in the preceding paragraphs.

13.3.3 Leadership Situation

Healthcare providers in an acute medical care setting find themselves in a variety of situations that require an adaptive and flexible leadership repertoire. For instance, a surgeon may teach a young resident during an operation in the morning, be part of a trauma team at noon, and lead a quality improvement meeting in the late afternoon. Among the most profound difference in situations is between leadership in everyday life and leadership in an emergency. Because leadership situations differ from each other, different styles of leadership need to be applied. Healthcare providers should be aware of the diversity of styles, learn and practice in various situations, and become experts at adapting their leadership behavior according to the demands of the event (McCormick and Wardrobe 2003).

13.3.4 The Followers

For a leader and the team to effectively accomplish goals, followers must have the ability and willingness to fully participate in the team and to engage with the leader. Followers who provide a level of independent thinking and who know about their responsibility to speak up when they believe that patient care is compromised or jeopardized are an indispensable asset for achieving optimal patient care. Because followers are often learners as well, good leaders are aware of how to dynamically transfer leadership responsibility. The transfer may take place because the leader needs to attend to a task or to give an inexperienced colleague some supervised practice or because another clinician is equally or more qualified to lead in a particular situation. Two important aspects of leadership change are necessary: Be explicit about the change so the whole team is aware, and ensure that the team's situational awareness remains high. Observations of teamwork behaviors have shown one other important aspect in a team success: Leaders and followers have a "contract" of sorts that is an explicit and agreed-upon understanding of their roles. Followers then enable, support, and enhance team performance (e.g., Klein et al 2006).

13.3.5 Leadership Success

Leadership behavior has consequences. Whether or not leadership in an emergency is successful has traditionally been viewed as mostly dependent on the clinical course of events; that is, leadership was assessed primarily in terms of survival and recovery of the patient. The teamwork was viewed as far less important. By which

route the goal of survival and recovery was reached was irrelevant. However, the past decade has witnessed an increasing interest in the *process* of leadership. Successful leadership is no longer only a question of patient outcome, but also that of a leader's interaction with the team members. Current research and thinking is that effective leadership promotes better patient outcomes. Furthermore, effective leadership promotes a working and cultural environment that treats healthcare providers with respect and as mature, competent, and caring adults. When treated in this way, teams perform better.

13.4 Leadership Problems in Critical Situations

Leadership problems in acute and emergent healthcare can most often be traced to one or both of these core problems: (1) A leader does not explicitly assume responsibility for the leadership position, does not attain the team's explicit agreement, and/or (2) does not act according to sound leadership principles. The failure to take and agree on responsibility and to lead can lead to suboptimal or unsafe results as described below.

13.4.1 Without a Leader: When Nobody Shows the Way

If the leader does not fulfill the formal leadership function with the corresponding leadership behaviors, patient treatment in an emergency is jeopardized. Because decision-making in the high-stakes medical environment is based on an instructive leadership style, an indecisive leader will cause loss of coordination, failure to execute necessary tasks, and time delay. Recent research demonstrated that despite having sufficient knowledge and training, teams managing a cardiac arrest were unable to follow guidelines successfully with the major obstacles being those of poor leadership and a lack of explicit task distribution (Marsch et al. 2004). This lack of leadership can partially be compensated for if team members are familiar with the tasks at hand and with each other because they have been working together for a while. In this case shared mental models, although not as good as they could be, allow each team member to anticipate each other's resource needs and actions (*implicit coordination*, Chap. 11).

13.4.2 Misled into Action

The main tasks of leadership in an emergency situation are to generate a shared comprehensive mental model of the situation, to define priorities and partial goals, and to coordinate the actions of all team members. This means that leaders have to refrain from operative actions. Unfortunately, leaders are not immune from a stress-related urge to act ("do something now"). Once leaders have been drawn into executing tasks (e.g., inserting a central IV line, giving drugs, adjusting the ventilator settings), the

leader's attention has been drawn away from the demands of effective leadership, and therefore it is most likely that the leader will lose sight of "the big picture." Studies exploring the relationship between team leadership skills and quality of cardiopulmonary resuscitation in an adult cardiac arrest simulation were able to demonstrate a positive association between team leadership skills and quality indicators of effective CPR (e.g., better technical performance, shorter pre-shock pause, and lower total hands-off ratio; Yeung et al. 2012). If it should become necessary for the leader to perform a task (e.g., inserting the central IV line because the resident failed), this should only be a short temporal exception, and the leader should explicitly have someone else take over leadership while distracted with a task. When the task is finished, the leader can explicitly resume leadership responsibilities.

13.4.3 Tasks Executed? Failure to Monitor

The leadership process is a goal-oriented, recurrent, closed-loop cycle of thinking, deciding, and acting. Due to this iterative structure, preceding actions influence ongoing leadership decisions and team actions. A crucial part of the process of leading lies in monitoring whether an instruction has been understood and executed and, if so, what the results are. If leaders fail to maintain and close the loop, subsequent decisions will be based on assumptions and expectations, but not on real data.

13.4.4 Strain: Leadership and Emotional Pressure

The anesthesiologist in the case study is confronted with a series of parallel task demands. He has to grapple with the unclear diagnosis of the medical problem, has to gain knowledge of the available resources, must satisfy the team's need for adequate communication, and has to be aware of and regulate his own emotional reactions. Although the demands present an enormous challenge, trained and experienced leaders can cope with them. If a leader is unable to cope with the demands, the trap of the "cognitive emergency reaction" (Chap. 9) becomes a potential problem. Cognition and behavior will then no longer be directed at leading the team but instead at regaining the feeling of competence. Another frequently observed and unwanted behavior is that the "leader goes solo." Under stress, decision-makers tend to focus on their own thinking and acting. In this condition, team members are excluded from participating in the leader's mental model of the situation; thus, they have no idea what the leader thinks, plans, or expects for support (Driskell and Salas 1991).

13.4.5 Change in Leadership: Change in Function

Healthcare providers in an acute medical care setting are sometimes forced to switch functions. For example, in the case study, the resident assumed the role of

leader in the case of malignant hyperthermia until the attending physician arrived, a "code blue" might be led by the physician on the ward until the resuscitation team can take over the case, etc. In both cases team members have to conform to the altered conditions and have to adapt their behavior. The key to successfully changing leaders or roles during an event is to be verbally explicit about the change. To adjust to changing conditions, the team must be aware of leader and role changes. Explicitly announcing and verifying roles as they change is just as important as being explicit and verifying situation updates, decisions, and task execution.

13.4.6 "I'm in the Driver's Seat!" : Leadership and Power

Teams in an acute medical care setting tend to view themselves as hierarchical. A hierarchical team implies a power gradient. Teams that attempt to reduce the authority gradient and view the leader as having one job among a number of other important jobs tend to share information better. Problems often arise if a leader assumes a strong autocratic leadership style. If a leader wields power insistently and consistently, team members get the impression that the leader understands all there is to know about the situation and knows exactly what decisions and actions need to take place. If the function of a team member is continuously relegated to receiving orders, this can lead to hidden resistance, passivity, and suboptimal teamwork. Team members might refuse to "be led" or to fully cooperate with the leader. Lack of information sharing and trust can lead to a breakdown of teamwork with attendant costs in the patient's safety and well-being. On the positive side of the coin is that a power gradient, if wielded judiciously and respectfully, can be in the interest of the team because during a critical situation where team members may be confused about the big picture, leadership can be very effective. However, no matter what style of leadership is used, active participation and volunteering of information should be encouraged by the leader.

13.4.7 "There Is Only Room for One of Us!": Conflict for Leadership

When several leaders with a comparable position in hierarchy meet in an emergency (e.g., resuscitation on general ward, acute bleeding in the OR, trauma in the emergency department), the leadership position can become ambiguous. If there is no standing rule about the allocation of responsibility, it is helpful when the respective leaders agree explicitly on the most appropriate leader. It is less important what decision rule is used for deciding who is the leader, whether it be the most experienced person or the trainee needing to practice; what is important is that the leadership role and allocation of responsibilities be explicitly negotiated and agreed.

13.4.8 Handing Over Responsibility: The "Revolving Door" Effect

During the management of the malignant hyperthermia in the case study, the resident handed over leadership the responsibility to the attending physician. This handing over of responsibility generally corresponds with the necessary knowledge, expertise, and clinical skills of the leader and is done by turning over all relevant information. On the other hand, sometimes leaders take over responsibility too abruptly or implicitly. The resident could be sent away, ignored, or verbally "pushed away." Because in this way the information the resident could share is lost, negative consequences for patient care are likely. Relevant information about the clinical developments, important clues, procedures performed, and laboratory data requested will not be available for future treatment. When a new leader is designated, team members must convey crucial information instead of leaving without providing information (*revolving door effect*). Having a new team leader has advantages because the new leader might have a fresh and less biased perspective. On the other hand, the advantage of having a new leader can be undone if team members stop participating in problem solving and information sharing.

13.4.9 Invulnerable: Immunization Against Criticism

Leaders can make incorrect diagnoses, order questionable procedures, make mistakes, etc. Because a leader's decisions in everyday life often go unchallenged, an immunization against criticism of team members can take place. Consequently, decisions a leader makes in critical situations might also be immune to criticism. Ideally, the interaction of team members with their leader should be characterized by a sound balance of respect and assertive behavior. The price for not understanding or not challenging a leaders' faulty decision can be high. Leaders can and should actively encourage team members to share their thoughts and to voice concerns. Leaders need to actively solicit feedback and concerns from team members. A powerful leadership technique is for the leader to announce that speaking up when an action or decision is wrong or doesn't make sense is an expectation of all team members. For this technique to work, the leader has to follow up with demonstrable appreciation when team members speak up, whether they be right or wrong in their concern.

Leadership Problems

- Leadership role is not assumed.
- Relying on assumptions about who is in charge or that people know what needs to be done.
- Losing sight of the big picture.
- Failure to monitor.
- Overstrained with a situation (cognitive emergency reaction).
- Getting involved in clinical tasks while holding a leadership role.

- Exerting power with an autocratic style.
- Failing to resolve conflicts with peers.
- Assuming responsibility abruptly and thereby displacing team members who have valuable situational knowledge ("revolving door" effect).
- Immunity from criticism.

13.5 Leadership Tasks in a Critical Situation

The life-threatening situation from the case study forced the attending physician to provide leadership in a critical situation. His leadership behavior exemplified the relevant tasks of a leader in a critical situation. Seven interrelated tasks seem especially vital for success in such a setting:

- *Organize the team;* encourage, promote, and facilitate good teamwork .
- *Apply problem-solving strategies,* verbally.
- *Articulate clear goals*.
- *Make decisions* using input from team members.
- *Delegate and coordinate* task execution.
- *Monitor workload balance* within and across the team.
- *Reevaluate* the situation regularly and verbally.

The items overlap to some degree with the characteristics of a good team process that we encountered earlier (Chap. 11.3). In this respect, it is noteworthy that successful teamwork is the responsibility of *every* single team member.

13.5.1 Organize the Team, Encourage, Promote, and Facilitate Good Teamwork

Good teamwork does not happen simply by assigning healthcare professionals together in the same shift. Similarly, formal positions with inherent authority do not necessarily result in effective leadership. Instead, good teamwork and leadership depend on a set of social and interpersonal skills of both leader and followers (Chap. 11) and flourish only in a trustful, cooperative climate. In contrast to leadership of single-discipline teams engaged in routine production tasks, leadership in interdisciplinary action teams is characterized by a set of distinctive features:

- Leadership in emergent acute care settings differs from leadership in other professional areas because often there is little time for members to get accustomed to each other. Instead of being able to brief the entire team prior to the mission, it is common for leaders to organize their team "on the fly."
- Leaders face the challenge of having strangers from a variety of professional groups, and clinical disciplines cooperate in ad hoc teams. Thus, leaders are

faced with task demands ("patient treatment") as well as social demands (familiarization, developing some form of team etiquette, establishing and reinforcing communication patterns, etc.).

- Whenever possible, leaders should not participate "hands on" in patient treatment but rather make it their top priority to build a structured team and free their resources for thinking, decision-making, and situational reassessment. While it is often senior team members who are assigned the task of leadership, their capabilities might be needed in certain situations (e.g., difficult airway, central IV line, venous access in neonates and infants). As soon as possible, leaders should try to regain their "hands-off" position.
- Effective leaders in most situations help provide the needed resources for team members. In the case of emergent acute care settings, responsibility for resource management in terms of equipment, personnel, and communication with outside functions such as lab, radiology, etc., needs to be assumed by another team member. This person is often called the event manager.
- Effective teamwork with its central behavior components of workload distribution, mutual performance monitoring, feedback, closed-loop communication, and backup behavior is the mainstay of efficient patient care. Effective leaders cultivate desired team behaviors and skills when they openly share information and explicitly empower members to speak up, give constructive and timely feedback, and challenge the leader's thoughts and actions when appropriate.
- What team members expect from their leader is leadership behavior, not formal authority. Ideally, leaders renounced their individuality in the service of a reliable standard of excellent care, thereby embodying the transition from the mindset of craftsman to that of an equivalent actor (Amalberti et al. 2005).
- Leaders set the tone for their team, for better or worse. Integrity, friendliness, fairness, adherence to moral standards, and interpersonal skills may not directly impact task execution in every single case, but they certainly play a crucial role in generating team cohesion.

13.5.2 Apply Problem-Solving Strategies Verbally

The purpose of leadership is to influence and direct the performance of team members toward the achievement of a defined goal (Murray and Foster 2000). However, before a leader can formulate a goal, the immediate and underlying problems have to be understood. In acute healthcare settings, problem solving can be impaired by the complexity of the situation and by stress. Therefore it is highly recommended that leaders have a structured and well-practiced approach to problem solving (e.g., the five steps of a good strategy, Chap. 10) rather than solving the problem on the basis of minimal informational input and by relying on heuristics. In addition, provocative situational factors (e.g., acute stress, feeling of incompetence) can severely degrade a leader's judgment and create a vulnerability to peer pressure.

13.5.3 Articulate Clear Goals

Leaders carry the main responsibility for ensuring that their team achieves its clinical goals. These goals serve as "beacons for our actions" that should satisfy as many concurrent needs as possible without creating new problems. When team members know what the leader wants them to accomplish, they can go about seeing a bigger picture of what they are supposed to do and can take more responsibility for obtaining the teams goals. Clear goals lead to clear priorities. When goals and priorities are in place, material and personnel resources can be timed and allocated efficiently and effectively by competent team members. On the other hand, when goals and priorities are not articulated clearly, critical situations can run out of control because multiple individuals, concentrating on only their part of the situation, will likely execute uncoordinated, unplanned, and often contradictory tasks.

13.5.4 Make Decisions with Input of Team Members

Teams in acute care medicine must respond to unexpected events in a coordinated way. A shared mental model is the single most important prerequisite for successful coordination of team efforts (Stout et al. 1999). Having a shared mental model of a situation means that team members have a common understanding about the task or problem at hand, the resources, the team members' abilities and skills, and the situational context (Chap. 11). Shared knowledge enables each team member to carry out his or her role in a timely and coordinated fashion, helping the team to function as a single unit with little negotiation of what to do and when to do it. The greater the degree of accuracy and overlap among team member mental models, the greater the likelihood that they will coordinate with one another successfully, even under stressful or novel conditions. Leaders are responsible for generating and sharing mental models. In routine situations team members should be encouraged to share their thoughts and impressions with the leader. In time-critical situations with no room for prior discussions, input should be collected on the fly: Leaders should verbally state their current mental model to the group (e.g., "I think our problem is… the main risks are… the strategy is…") and at the same time encourage team members to challenge these assumptions if they don't make sense or if they seem incorrect (e.g., "Does anyone see it differently … am I missing anything … ?").

13.5.5 Delegate and Coordinate Task Execution

To be an effective leader, it is imperative that responsibilities or assignments be delegated to members of the team. The process includes four steps:

- Decide what to delegate.
- Decide to whom to delegate.

- Communicate clear expectations.
- Request feedback, and close the loop.

The attending physician bore responsibility to ensure that all team members direct their efforts toward effective treatment of the malignant hyperthermia. For this purpose the leader provided partial goals deduced from medical knowledge and set priorities according to the situational demands (Chap. 7). The leader communicated the plans to the team in an appropriate way and distributed individual responsibilities to team members according to their skills and knowledge (to the extent that the leader knows them). Using specific rather than general delegation, the leader avoided the trap of requesting "someone" to do "something." Besides being specific, delegation of responsibility should be descriptive rather than prescriptive: Recognizing that there is often more than one way of executing a task, leaders should have tolerance for team members in their individual method of fulfilling their area of responsibility provided that the method is compatible with the desired outcome (Iserson 1986). To establish a closed feedback loop, leaders should request feedback on task execution, explicitly encouraging members to state problems or negative outcomes (e.g., "I'm having difficulties with the central IV line. I accidentally punctured the carotid artery already twice"). Ideally, team members provide this feedback without being asked.

13.5.6 Monitor Workload Balance Within and Across Teams

Team members differ with respect to their capabilities and experience. Therefore the identical task may be conceived and executed differently by different team members. Leaders should be aware of the performance limitations of each member and carefully monitor workload balance. Emotions, too, can create a sudden disequilibrium calling for a redistribution of workload. For example, during the management of the malignant hyperthermia in the example case at the beginning of this chapter, the resident was overwhelmed with the situation because he blamed himself for choosing succinylcholine as a muscle relaxant for the induction of anesthesia. Because of his emotional turmoil, he repeatedly failed at inserting a central IV line into the jugular vein. To break this poor judgment chain, the attending physician assigned the resident to a different task and had him supported by an emotionally stable team member. Managing workload is part of a leader's comprehensive task of team management. By drawing upon and allocating people, knowledge, information, materials, and time, a leader can prevent work overload situations that compromise situation awareness and increase the risk of errors.

13.5.7 Reevaluate the Situation Regularly and Verbally

The last step in the process of leading a team during critical situations is regular reassessment of the situation. Reevaluation comprises the team process as well as

external circumstances: Reevaluating the team implies mutual cross-monitoring whether information has been understood and tasks have been executed. Teams can support their leaders by providing ongoing voluntary feedback. It is critical for the leader and team members to keep in mind that we cannot ensure a shared mental model unless it is verbalized. Only through verbal updates and review will the team remain coordinated. Ideally reevaluation is not a one-way street with the leader constantly demanding updates from followers, but rather a mutual interaction between both parties. Because complex situations can unfold over different rates of time and in different directions, a healthcare provider may be busy searching for a solution to one thing when another problem emerges. Thus, faced with event-driven dynamics with rapid time constants, team leaders will have to keep track of developments within the patient and within the team. Both team monitoring and reevaluation of external circumstances are prerequisite to maintaining an up-to-date "mental model" and to anticipating future developments.

13.6 Tips for Daily Practice

- If you want to lead, you must respect people and show appreciation. Leadership only works if leaders have a genuine interest in fellow human beings and if they show their appreciation. Make sure everybody counts and everybody knows they count. Without this core value of "liking people," nobody should strive for a leadership position.
- Leadership starts in everyday life. When confronted with a critical situation, leaders can only rely on well-established behaviors and a team climate that has been established in the normal course of life.
- Leadership does not flow automatically from a hierarchical position. True leadership is manifested only if a person is qualified in terms of leadership behavior.
- Good leadership is adaptive with respect to environmental conditions. The effectiveness of a given pattern of leadership behavior is contingent upon the demands imposed by the situation and by the followers' overall capabilities.
- Always remember: In critical situations, leadership is paramount. If there is more than one leader, there is no leader.
- Delegation has to be specific. Statements like "Could someone get a chest tube" risk that no one will get a chest tube.
- The leader sets the tone for the entire team. Loudness and yelled orders are the hallmark of disorientation and disorganization and may be perceived by team members as a sign of disrespect.
- The patient is the one with the emergency, not you and your team. Even with limited time, restricted resources, and high stress, leaders should convey the feeling that the patient's welfare is of prime importance. Put another way: The decisions and actions the team takes are not about "who" is right, but "what" is right.
- Instead of succumbing to groupthink, the leader should make each individual in the group think.

13.7 "Leadership" in a Nutshell

- Leadership in the context of acute events in healthcare can be defined as the process whereby a person influences and directs the performance of other team members by utilization of all available resources toward the achievement of a defined goal.
- A leader can be defined as a team member whose influence on group attitudes, performance, and decision-making exceeds that of the other members of the group.
- Leaders are taught and practice to lead, not born to lead.
- In the context of healthcare in a high-stakes environment, four leadership theories are relevant: the "great man" theory, trait theories, behavioral theories, and situational and contingency theories.
- The success of the leadership process is determined by the person who leads (leadership personality), the way this leading is done (leadership behavior), the attitudes and abilities of the followers, and the situation in which the leadership role is enacted.
- Leadership behavior can be described as existing on a grid with relationship orientation and task orientation as the two dimensions.
- Four leadership styles can be developed within this grid: the "laissez-faire" style, the democratic style, the authoritative style, and the integrative style.
- Leadership tasks in critical situations comprise coordination, delegating responsibilities, formalizing information flow, determining the structure of the team, stabilizing emotions, and representing the team to others.
- Leaders involved in an intense healthcare situation will need an "event manager" to help ensure that resources are available and to coordinate with others within the organization.
- Successful leadership depends on the skills of the leader *and* the teamwork skills of each team member.
- A leader must have conceptual skills, technical skills, and interpersonal skills.
- Effective leaders delegate so that they can regulate. During high workload periods, the team leader should manage clinical progress, and team members should manage the technical tasks.
- No single leadership style is best for all situations. Different styles of leadership are more appropriate for certain types of decision-making.
- Situational leadership is a holistic leadership concept that perceives, respects, informs, coaches, and motivates staff members as unique human beings.

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