

# Strategies to Improve Perioperative Communication During the COVID-19 Pandemic

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## ABSTRACT

The coronavirus disease 2019 pandemic has led to a variety of challenges that have necessitated process changes in perioperative environments. Communication failures are a cause of surgical adverse events, and the pandemic has created additional communication concerns. Measures to prevent disease transmission, such as social distancing and wearing personal protective equipment, may inhibit communication. Relational dynamics and the types of collaboration that perioperative health care professionals exhibit can affect the quality of communication. The use of checklists during procedures and the hand-over process may enhance communication content. Health care professionals can use communication tools, such as portable and fixed communication devices, an electronic display of the OR schedule, cyber-physical systems, and short message service (ie, text messages) to facilitate information sharing. The concepts presented in this article should help perioperative nurses to improve communication during and after the pandemic.

**Key words:** *coronavirus disease 2019 (COVID-19), closed-loop communication, relational coordination, checklist, hand over.*

Although several influenza pandemics occurred during the twentieth and early twenty-first centuries,<sup>1</sup> the coronavirus disease 2019 (COVID-19) pandemic created a global health, social, and economic crisis. Before the COVID-19 pandemic, many nurses likely learned information on pandemics in nursing school or included the concept of a pandemic as a trivial conversation topic. The present pandemic is a reality that has affected everyone and changed the way that individuals live. The causative microorganism of COVID-19 was previously unknown; and initially, there was minimal information to assist scientists, lawmakers, and health care professionals (HCPs) with controlling the spread of the disease. According to the Centers for Disease Control and Prevention (CDC), patients diagnosed with COVID-19 may experience no symptoms<sup>2</sup> or may experience a respiratory illness with mild to severe symptoms.<sup>2,3</sup> Also, the disease is associated with fatal outcomes.<sup>4</sup>

As of February 2022, the CDC reported that more than 78 million individuals in the United States contracted

COVID-19, with more than 930,000 deaths attributed to the disease.<sup>5</sup> Because of the high number of infected individuals, perioperative leaders have worked with personnel to modify processes to maintain a safe patient care environment. Some of the changes involved accommodating the fluctuating number of surgical procedures, protecting the patients and HCPs to prevent incidental virus transmission, and changing communication practices to prevent possible breaches of personal information that could harm HCPs or patients. Although there are vaccines available for most individuals, the disease continues to affect the global population; if another pandemic of this nature occurs in the future, HCPs may require additional resources to adapt to this type of disruption in the health care industry.

## COMMUNICATION USING RELATIONAL COORDINATION

*Communication* involves exchanging information using a common system of symbols, signs, or behavior.<sup>6</sup> For communication to be effective, the individuals should use a

*closed-loop* process in which the sender confirms that the receiver understands the sender's message as intended.<sup>7</sup> This pattern of give and take should be repeated until the two individuals achieve a common goal. Effective communication may appear to be a simple task; however, results of a 2015 review of 23,658 malpractice claims occurring between 2009 and 2013 showed that communication failures were involved in 7,149 (30%) of the claims. Of the 1,959 claims involving communication failures during surgery, 50% involved outpatients, 34% resulted in severe injury, and 14% resulted in death.<sup>8</sup> Efforts to improve and practice effective communication may improve patient safety and outcomes.

Relational coordination in work environments involves communicating and relating for the purpose of task integration.<sup>9</sup> Appropriate communication and relational dynamics occur when individuals incorporate shared goals and knowledge and mutual respect in a timely manner to solve problems. However, inappropriate communication and relational dynamics can occur when individuals focus on personal (ie, functional) goals, keep information to themselves, and display a disrespectful attitude.<sup>9</sup>

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Although individuals engage in general communication everywhere, perioperative nurses should learn and apply the skill of using high-quality verbal and nonverbal communication to achieve intended outcomes. This may require the nurses to intentionally understand themselves and others, including the responsibilities of all interdisciplinary team members; interdependence of the team as a whole; and the expected desired results.

## RELATIONAL DYNAMICS AND PANDEMIC COMMUNICATION

In 2014, researchers in Denmark observed 39 perioperative teams, completed 15 semistructured interviews, and used the theory of relational coordination to complete a deductively directed content analysis.<sup>10</sup> They identified

four types of collaboration and how each type correlates to communication and relational dynamics (Table 1). Understanding this information may help perioperative personnel implement effective communication strategies in their work environment during and after the pandemic.

### Type 1 Collaboration

Type 1 collaboration is characterized by proactive and intuitive communication and occurs when HCPs understand their roles, express their expectations of themselves and each other, anticipate challenges, collaborate to create solutions, make suitable decisions, and exchange reflections to facilitate staff member coordination and effective patient care.<sup>10</sup> An example of Type 1 collaboration includes the completion of the time-out process before a patient who may be infected with COVID-19 undergoes surgery. During the time out, HCPs can discuss important aspects of the surgery, acknowledge the presence of each team member, anticipate needs and challenges, and collectively create timely solutions to any anticipated concerns. Health care professionals can use Type 1 collaboration to enhance professional interactions during the perioperative period and promote the understanding and mutual respect needed to create a safe environment for the patient to heal and to protect HCPs from exposure to the virus.

### Type 2 Collaboration

Type 2 collaboration involves silent and ordinary communication and arises from shared goals, familiarity with requirements for routine tasks, and mutual respect. Although the relational and communication style is more silent and less dynamic than in Type 1 collaboration, the familiarity and respect associated with Type 2 collaboration allows HCPs to easily recall required patient care tasks and address adverse events if they occur.<sup>10</sup> Type 2 collaboration is associated with the interpersonal familiarity of the HCPs, simplicity, and the repetitive nature of the standard or routine procedure. The HCPs also may include "small talk" about social and personal life in their conversations. Health care professionals who are familiar with each other's personalities and professional knowledge can have greater camaraderie; they trust each other to keep patients safe.<sup>10</sup>

An example of Type 2 collaboration can occur during a very brief verbal exchange when completing the time out. The HCPs may not discuss the expected challenges because

**Table 1. Types of Collaboration and Their Associated Communication and Relational Dynamics<sup>1</sup>**

Collaboration Type (Communication Pattern)	Appropriate Communication and Relationship Dynamics <sup>a</sup>	Inappropriate Communication and Relationship Dynamics <sup>b</sup>
Type 1 (proactive and intuitive)	High	Low
Type 2 (silent and ordinary)	Low	Low
Type 3 (inattentive and ambiguous)	Low	High
Type 4 (contradictory and highly dynamic)	High	High

<sup>a</sup>Shared goals, shared knowledge, and mutual respect.  
<sup>b</sup>Functional goals, exclusive knowledge, and disrespect.

**Reference**  
 1. Tørring B, Gittell JH, Laursen M, Rasmussen BS, Sørensen EE. *Communication and relationship dynamics in surgical teams in the operating room: an ethnographic study.* BMC Health Serv Res. 2019;19:528. <https://doi.org/10.1186/s12913-019-4362-0>.

the involved team members likely have performed the procedure multiple times and therefore are familiar with the process. Because the HCPs trust each other, each team member may assume that if there was anything unusual to relate, a team member would automatically mention it to the group without prompting.

Type 2 collaborators may skip steps during the time out; however, use of a checklist provides a chance for all team members to discuss important information about the patient and the procedure. Skipping this process could lead to missed opportunities to communicate salient items pertinent to patient and personnel safety.

During the COVID-19 pandemic, concerns related to virus transmission may increase tension in the OR, change the interpersonal dynamics, and affect the way that HCPs communicate. As a result, HCPs may need to alter their communication style and work activities to accommodate the effects of social distancing and muffled voices from the use of multilayer personal protective equipment (PPE). Therefore, HCPs should ensure that the clarity of words and meaning are not compromised when interactions occur. To prevent the spread of the virus, perioperative HCPs may not be allowed to leave the OR until the surgeon finishes the procedure; then they can transport the patient to the post-operative area and remove PPE.

**Type 3 Collaboration**

Type 3 collaboration, which is typified by inattentive and ambiguous communication characteristics, can occur when the team members are more concerned about personal (ie, functional) goals than a team’s shared goals.<sup>10</sup> When HCPs exhibit Type 3 collaboration, they do not pay

attention to the other team members’ needs and knowledge and may keep information to themselves. The inattention can create confusion, disrespect, and substandard care for patients.<sup>10</sup>

The presence of COVID-19 may increase stress among perioperative HCPs. There may be an elevated level of anxiety related to COVID-19 during procedure preparation that causes the HCPs to become isolated, focus on functional roles, and disregard the team’s shared goals. Stress may make sarcasm and inappropriate tone of voice more commonplace, which may create a breach in the loop of safe care for surgical patients. The following scenario describes a hypothetical example of the effects of Type 3 collaboration.

A cardiothoracic (CT) surgeon prepares to perform an unfamiliar procedure on a patient infected with COVID-19. The surgeon enters the OR and notices the presence of HCPs who do not normally work with him. The surgeon asks one of the individuals who she is and why she is present. The individual responds that she is a nurse from a different team and the charge nurse assigned her to participate in the procedure with the CT nurses. The surgeon continues to question the nurse and asks her to identify her normal team. After the nurse responds that she is a member of the vascular surgery team, he tells her in a loud voice that he does not want anyone present besides the CT team’s nurses. The nurse responds, “Oh thank you, I’m glad that you don’t want to work with me, the feeling is mutual! Doctor, please ask the charge nurse to take me out of this room.”

In this situation, both team members exhibited Type 3 collaboration. The nurse did not explain to the surgeon that she was a part-time employee and a CT nurse at

another facility and that the charge nurse assigned her to provide support to the CT nurses and learn how he performs the procedure. This information remained exclusive to the nurse, and as a result, the surgeon's stress level associated with performing an unfamiliar procedure on a patient who was infected with COVID-19 increased and he responded with an inappropriate tone of voice. The possible negative outcomes of Type 3 collaboration in the scenario include a lost opportunity for the nurse to learn, a rift among the CT team members, and a disrespectful and tense working environment. To create and maintain a professional environment, all HCPs should communicate appropriately in a matter-of-fact and respectful manner.

### Type 4 Collaboration

Type 4 collaboration involves contradictory and highly dynamic communication and is a combination of the prior three collaboration types.<sup>10</sup> Communication and team member relationships move from being "respectful, accurate, and problem solving to being sharp, ironic, disrespectful, and finger pointing."<sup>10(p10)</sup> When exhibiting Type 4 collaboration, an HCP's behavior may be respectful and cooperative but then shift to being contradictory; this inconsistency can be a characteristic of their collaboration. This type of collaboration can occur in a team situation in which team members are communicating and collaborating effectively until a trigger (eg, stressor) results in a disrespectful and ineffective response from at least one team member.

A hypothetical example of Type 4 collaboration involves a procedure in which all HCPs wear N95 respirators. The team discusses the planned procedure during the time out and the procedure proceeds according to the plan until the scrub person misinterprets the surgeon's request and accidentally passes an incorrect instrument to the surgeon. Instead of clarifying the request and allowing the scrub person to correct the error, the surgeon throws the instrument to the floor and publicly shames the scrub person. In this situation, team members participated in the time out and were engaged in appropriate patient care activities until the misunderstanding triggered an inappropriate response from the surgeon. The possible negative outcomes of Type 4 collaboration in the scenario include a tense OR atmosphere and a new reluctance of the scrub person and RN circulator to speak up about patient care concerns.

### Perioperative Considerations

Challenges during surgery may cause an HCP to lose his or her temper and lash out indiscriminately in an attempt to relieve fear and anxiety. In addition, the stress of wearing multiple layers of PPE when working and the risk of acquiring a COVID-19 infection creates a challenging situation for perioperative HCPs. Health care professionals should practice communicating with *mindfulness*—that is, being fully present and aware of the situation—to create a calm environment even during stressful times. "Mindfulness allows practitioners to look at their stress calmly, accepting the situation and then responding appropriately."<sup>11(p722)</sup> The use of mindfulness helps create a supportive environment and allows HCPs to understand the team and its members.

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Perioperative HCPs can use knowledge of relational dynamics, clinical skills, and technical skills when engaging in interdisciplinary teamwork to meet the shared goals of the team. The HCPs can express mutual respect through their words and actions to mindfully create a working environment that protects patients and personnel during the pandemic and achieve a satisfactory outcome. The use of effective collaborative communication when working in the OR may result in a satisfying experience for perioperative HCPs.

### COMMUNICATION CONTENT

An understanding of the correlation of communication and relational patterns allows the HCPs to recognize strategies that may increase the cohesive nature of a working environment. However, communication content (eg, details) may be as important as the strategy that an HCP uses to perform patient care tasks. A checklist is a standardized communication tool that HCPs can use to describe actions and organize communication content when caring for patients.<sup>12</sup> Personnel who adhere to checklists may

avoid omission of steps or items when completing tasks. Using checklists at key times (eg, time outs) can improve the quality of communication in the OR.<sup>13</sup>

In 2004, The Joint Commission published the Universal Protocol for Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery<sup>14</sup> and now includes it annually in the *National Patient Safety Goals*' performance measures.<sup>15</sup> In 2009, the World Health Organization (WHO) published the Surgical Safety Checklist (SSC) to help HCPs decrease preventable surgical complications and deaths.<sup>16</sup> The WHO SSC details important information that perioperative HCPs should review before induction, before incision, and at the end of the procedure before transporting the patient from the OR. In 2010, AORN created and published the original Comprehensive Surgical Checklist based on The Joint Commission's Universal Protocol and the WHO SSC.<sup>17</sup> AORN published the current version of the checklist in 2019,<sup>18</sup> which contains additional safety checks (eg, fire risk) that are not addressed in The Joint Commission and WHO documents.<sup>17</sup>

## Using Checklists During the Pandemic

Perioperative HCPs should use available checklists when communicating about patient care concerns (eg, surgical site identification, pandemic processes, plan of care).<sup>19</sup> When using checklists, perioperative HCPs can identify patient care strengths and inefficiencies and determine ways to resolve any challenges. In addition to published checklists, organization and perioperative leaders can create detailed policies, standard operating procedures, and guidelines that comply with existing federal, state, and local requirements. Perioperative HCPs can use such documents when caring for patients, including those who may be infected with COVID-19.

### Preprocedure check in

The preprocedure check in allows the HCPs to confirm the patient's identity, verify the presence of required documentation (eg, consent), and address any special needs (eg, blood, implants).<sup>18</sup> During the check in, PPE, including N95 respirators, may hinder communication among the HCPs. Background noise from air handling devices may add to the communication difficulties. Patients who may be infected with COVID-19 require transmission-based precautions;<sup>20</sup> and HCPs should use standardized processes, such as checklists, to streamline communication activities

with patients, limit unnecessary exposure to airborne and respiratory droplets, and avoid a redundant and incomplete patient interview that may add to a compromised patient's stress.

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### Preprocedure briefing

The RN circulator and anesthesia professional complete the preprocedure briefing or check in before anesthesia induction to confirm the patient's identity; the surgical site; and information that may include the patient's allergies, risk for aspiration, risk of blood loss, and completion of the anesthesia safety check.<sup>18</sup> Perioperative HCPs can perform the preprocedure briefing at the patient's bedside; however, when the patient may be infected with COVID-19, HCPs should consider performing the process away from the patient bedside to decrease exposure to the virus.

### Time out

Before the incision, all involved perioperative HCPs should suspend activities to perform the time out.<sup>18</sup> Although the time-out content repeats some of the information in the preprocedure briefing (eg, confirmation of identity and surgical site), it also includes an opportunity for all involved HCPs to focus on the process, introduce themselves to the group, create a shared model of care, use checklists to create a general and specific plan for the surgical care based on suggestions of individual members, and create an atmosphere of cooperation and open communication in the group. When the HCPs focus on the time out, they can help to ensure that information and needs that may have been previously discussed have been addressed. Although it is repetitive, all involved HCPs should verify the patient's name, procedure, site, and laterality to prevent an adverse event.<sup>18</sup> After all HCPs present confirm the time-out content, the surgeon can begin the procedure.



When caring for a patient who may be infected with COVID-19, the use of PPE (eg, N95 respirators and surgical masks, a controlled or powered air-purifying respirator) coupled with social distancing may muffle the speaker's words during the time out. Therefore, it may be beneficial for HCPs to communicate complete information in a brief and well-enunciated manner that is audible and understandable to all HCPs present.

### Debriefing

Perioperative HCPs should perform the debriefing or sign out when the procedure ends and before transporting the patient from the OR.<sup>18</sup> The RN circulator should confirm the name of the procedure, completion of surgical counts, and the number and types of specimens. In addition, the HCPs should discuss the wound classification and identify any equipment concerns. The debriefing allows the HCPs an opportunity to identify the strengths and weaknesses that occurred during the procedure. They also can identify strategies to resolve issues for the purpose of process improvement and plan for the patient's postoperative care.

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### Hand-over process

A *hand over* is "[t]he transfer of patient information from one person to another during transitions of care"<sup>19(p1176)</sup> and can occur before, during, and after the procedure. Perioperative personnel should use standardized hand-over communication for clear and complete information transfer.<sup>19</sup> The hand-over process allows team members to share information they discussed at the beginning of the perioperative process with subsequent caregivers, thus providing continuity of care for the patient. Details are important aspects of the hand-over process, and the consistent use of standardized checklists and communication tools may enhance the quality of information transferred from one HCP to another. Some communication tools involve mnemonic devices to help an HCP remember steps and promote completeness of information, such as

- situation, background, assessment, recommendation (SBAR);<sup>21</sup>
- introduction, patient, assessment, situation, safety concerns, (the) background, actions, timing, ownership, next (I PASS the BATON);<sup>7</sup>
- SURGical Patient Safety System (SURPASS) checklist;<sup>22</sup> and
- surgical procedure, wet [ie, fluids], instruments, tissue [ie, specimen], counts, have you any questions? (SWITCH).<sup>23</sup>

### Resources to Enhance Communication

Perioperative personnel can use a variety of resources to enhance communication. To minimize air movement during OR door openings leading to possible virus transmission, perioperative HCPs may use portable communication devices (eg, handheld radios, wireless phones) and fixed communication devices (eg, landline phones, intercoms) to share information with the HCPs outside the OR.

### Electronic health record

Personnel in many health care facilities use an electronic health record (EHR) to document and access information that may affect patient care. Some electronic documentation systems allow the HCPs to quickly identify data that they can use to create patient care strategies, such as an antibiotic stewardship tool that an HCP could use to optimize therapy and medication management for patients infected with COVID-19.<sup>24</sup> The EHR may allow the HCPs to easily access information, such as patient demographics, COVID-19 infection status, laboratory test results, respiratory status, patient care notes, procedure consents, and interdisciplinary information to create a clear picture of the patients' needs and identify any specialty needs for patient care.

Information in the EHR may affect how the HCPs provide care. For example, a positive COVID-19 test result alerts the HCP to adjust care processes, such as minimizing the number of personnel providing direct patient care, using appropriate PPE, practicing social distancing, and assigning a runner to provide support (eg, obtain instruments, supplies, or medications) for perioperative team members in the OR. These actions help avoid the need for the HCP

## Key Takeaways

- ◆ Relational coordination in work environments involves communicating and interacting for the purpose of task integration. Appropriate communication and relational dynamics occur when individuals incorporate shared goals, shared knowledge, and mutual respect in timely and problem-solving communication.
- ◆ Perioperative health care professionals can use knowledge of relational dynamics, clinical skills, and technical skills to engage in interdisciplinary teamwork and meet the shared goals of the team during and after the coronavirus disease 2019 pandemic.
- ◆ To improve the quality of communication in the OR, perioperative health care professionals should use designated checklists when discussing patient care concerns (eg, surgical site identification, pandemic processes, plan of care).
- ◆ Personal protective equipment and visitor restrictions may hinder communication. Use of a variety of resources, such as portable and fixed communication devices, the electronic health record, an electronic display of the surgery schedule, a cyber-physical system that captures perioperative activities, and a short message service, can enhance perioperative communication.

to leave the OR and change PPE, which may result in an increased risk of virus transmission.<sup>25</sup>

### Electronic patient tracking

An electronic display of the OR schedule with patient tracking linked to the EHR may be a useful tool for perioperative communication and task management. When a designated staff member schedules a procedure, the computer program creates a box in the EHR schedule for the patient that may contain important patient identification information (eg, name, medical record number, birth date, current location, readiness) and procedure-related information (eg, site, laterality, anesthesia type, required transmission-based precautions).

Some electronic schedules connect to a *cyber-physical system* that captures perioperative activities via wireless sensors and provides automatic recognition of specific events for a designated OR.<sup>26</sup> Examples of the recorded events include the patient's arrival, OR preparation, patient procedure readiness, and times associated with intraoperative activities. The use of a cyber-physical system with an electronic surgery-scheduling display may help improve communication because it can display important information in real time.<sup>26</sup>

### Short message service

Mobile devices and Internet-connected computer systems may have the capability to send text information

via short message service (SMS), a widely used communication tool. In some health care facilities, HCPs use SMS to send patient status updates to family members.<sup>27</sup>

During the pandemic, many organizational leaders have restricted access to facilities to personnel and patients and may not allow visitors (eg, relatives, caregivers) to accompany the patients into the facility. This limitation prevents patient contact with relatives and caregivers and the sharing of pertinent information before and during a procedure with relatives and caregivers and may create stress for them. Although some HCPs may provide updates to family members via phone calls, the time needed to make the phone calls may prevent an HCP from completing direct patient care tasks in a timely manner. Text messaging via SMS allows perioperative HCPs to easily communicate information to individuals accompanying the patient and may help alleviate anxiety and stress. Some EHR systems may include SMS functionality to help mitigate communication barriers with visitors during times of restriction or limitation (eg, a pandemic).

## CONCLUSION

Communication is an important component of safe patient care. However, communication became more difficult during the COVID-19 pandemic because of PPE use and implementation of transmission-based precautions. An understanding of the different types of

communication and relational dynamics may help perioperative HCPs implement effective strategies during surgical patient care. Another aspect of communication involves the content of the communication and the use of checklists to help HCPs share appropriate information and avoid adverse events that may be associated with miscommunication. The effective use of available electronic communication aids (eg, electronic scheduling display, SMS technology, cyber-physical systems) may enhance the coordination of patient care during and after the COVID-19 pandemic.

**Editor's note:** *National Patient Safety Goals* is a registered trademark of the Joint Commission on Accreditation of Healthcare Organizations, Oakbrook Terrace, IL.

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