

Safer Care for Patients with Tracheostomies



Tracheostomy is an invasive procedure that can help patients breath, speak, and swallow. However, patients and health care providers must be cognizant of potential risks are associated with the procedure.

To establish access to a patient's airway, health care providers often perform a tracheostomy. This is a procedure in which an artificial opening is made in the wall of the patient's trachea. The procedure allows for a direct airway and offers the ability to clear secretions from the lower airways through suctioning.¹

Tracheostomies are performed for many reasons. For example, a trauma patient who has a face or neck injury that

does not allow him or her to breathe may require a temporary tracheostomy. Other patients who have obstructions in their airways, such as malignancies, may also require them. "A tracheostomy may be indicated for patients who have the inability to swallow or clear oro-pharyngeal secretions, resulting in chronic aspiration, or who cannot clear secretions from the lungs due to an ineffective cough," says Mary Spremulli, CCC-SLP, a speech and

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language pathologist (SLP) and seminar leader on the topic of safe tracheostomies. A patient who needs long-term mechanical ventilation may be given a tracheostomy to reduce mucosal injury associated with prolonged endotracheal intubation. These patients may need a tracheostomy to limit damage to the trachea.²

Tracheostomies can make it easier for patients to breathe, speak, and swallow; allow for greater patient mobility; facilitate the removal of secretions; and help wean patients off mechanical ventilation.³ As with any other invasive procedure, however, some risks are associated with the tracheostomy.

Risks Associated with Tracheostomies

Because a tracheostomy is an invasive procedure, it does require an incision site that can become infected if the site is not prepared and maintained appropriately. Respiratory infections, such as pneumonia, are sometimes associated with this procedure.

In addition, the tracheostomy tube itself may obstruct the patient's airway, which can lead to aspiration and cardiac arrest.² This can happen if the tube is not placed properly or if it moves. Because of the size and nature of a tracheostomy tube, insertion can result in speaking and swallowing problems for the patient.

Procedures associated with a tracheostomy, such as suctioning to remove mucus or phlegm from the opening, can also present risks, including contamination of the lower airways, if not performed correctly.

Other risks associated with tracheostomies can include damage to the incision site and trachea. "Cuffs on tracheostomy tubes are located on the distal end of the cannula and are designed to seal the trachea for delivery

of air into the lungs during mechanical ventilation," says Spremulli. "Though it is often believed that an inflated cuff limits the amount of aspiration, evidence suggests otherwise."⁴ Extended cuff use and mismanagement of cuff pressures can contribute to tracheal stenosis, damage to tracheal mucosa, and scar tissue formation, all of which negatively affect the patient's ability to swallow.⁵

Fundamentally, risks associated with tracheostomies are dependent on an organization's approach to tracheostomy care. "Many times health care providers don't receive sufficient education and training on how to appropriately care for a tracheostomized patient or do not follow an evidence-based process," says Spremulli. "Also, the various health care disciplines caring for these patients—such as nursing, respiratory therapy, and speech and language pathology—are often trained in isolation, with limited awareness of each other's clinical preparation."

For example, Spremulli says "Nurses and respiratory therapists may be trained in suctioning and the care of the tracheostomy tube but may not fully understand the alteration in upper airway physiology and the speech and language pathologist's role in evaluating and managing communication and swallowing function. This lack of consistent knowledge may limit or obscure team goals, and variations in care can arise which can exacerbate any risks associated with the process."

Developing a Standardized Approach to Tracheostomies

To overcome these issues, organizations should consider creating a standardized, evidence-based approach to performing tracheostomies and maintaining artificial airways. Such an approach will allow for an objective and consistent process with which everyone involved will be familiar. "Standardized processes and protocols can ensure that every patient receives

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the best possible, most appropriate care every time," says Spremulli. "Without such processes and protocols, treatment is guided primarily by individual physician preference and practice habit, rather than evidence-based practice. This can result in wide variations and discrepancies in care for which no one is accountable. Unfortunately, patients and families pay the price for this lack of consistency."

To create a standardized tracheostomy process and protocol, an organization should consider convening a multidisciplinary team. Such a team may involve a variety of individuals, including nurses, physicians—specifically thoracic surgeons and ear, nose, and throat (ENT) specialists—speech and language pathologists, respiratory care therapists, and infection preventionists. As a group, this team should examine the organization's current processes for artificial airway management and determine risks involved with those processes. They also should study a broad base of medical literature to help develop evidence-based interventions that may reduce risks and ensure safe care. "When trying to improve tracheostomy care in the organization, using a proactive performance improvement process can help a team clarify specific institutional problems that serve as obstacles to safe care and develop and implement multidisciplinary processes or pathways to address those concerns," says Spremulli.

Content of a Standardized Approach

Any standardized approach to tracheostomies should address certain

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issues. While the scope of this article does not allow for a comprehensive discussion of all the issues, the following are a few of the critical ones:

- **Assessment.** Assessing a patient's need for tracheostomy as well as the specifics of that need is key to effective and appropriate care. Assessments should gather information about indications and contraindications for tracheostomy, the type and size of tracheostomy tube needed, possible patient risks associated with the procedure, and so forth.
- **Types of tube.** There are different types and sizes of tracheostomy tubes, just as there are different types and sizes of patients. Protocols and guidelines, such as those developed by American Thoracic Society (ATS), should guide users in selecting the appropriate type and size of tube for the patient. The goal of any tube selection process should be to select a tube that minimizes damage to the tracheal wall, offers adequate ventilation, and, when possible, promotes some translaryngeal airflow for communication, allowing for patient participation in care and rehabilitation.^{2,6}

- **Suctioning.** As previously mentioned, suctioning can present some risks to patients. For that reason, it should be limited to only those patients who cannot expectorate secretions on their own. In cases where suctioning is necessary, protocols should outline proper methods, describing not only the process but also the equipment needed and the infection prevention controls that should be in place.
- **Infection.** To limit infection, proper preparation and care of the insertion site (also known as the stoma) should be addressed. The stoma should be kept clean and dry at all times, and meticulous hand hygiene practices should be followed when inserting and manipulating the tube.²
- **Referral to speech pathology.** Within 24 to 48 hours of tracheostomy, patients should be assessed by an SLP. Within this assessment, the SLP can identify any problems, such as upper airway impairment, and determine candidacy for a speaking valve. "A closed position, or 'no leak' speaking valve not only allows the patient to communicate but can also reduce complications with swallowing, including aspiration," says Spremulli. "Evaluation and

rehabilitation of swallow function and cough reflex are important defenses against oropharyngeal aspiration, and rehabilitation of those functions may help to predict successful decannulation [removal of the tube]."

- **Regular reassessment.** A tracheostomy patient's condition can change quickly, so it is critical to outline specific timeframes for reassessment as well as information that should be gathered during the reassessment process. Some information to obtain may include status of the insertion site, need for a new tracheostomy tube, readiness for decannulation, and so forth. Ultimately, the goal for any patient with an artificial airway is to have that airway successfully removed and to have normal breathing and swallowing functions restored. Therefore, protocols should outline clear criteria for decannulation. Such criteria may include absence of aspiration, ability to produce a vigorous cough, swallowing ability, and voice quality.⁷

Setting the Stage for Success

Although a well-developed tracheostomy process can help ensure appropriate and

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standardized care for patients, it is effective only if staff members follow it. To that end, organizations must provide comprehensive training on any protocols and procedures, establish competencies related to those protocols and procedures, and monitor their use. “Before implementing a tracheostomy process or protocol, it can be helpful to identify champions of the effort who can help organize and motivate patient care teams and hold people accountable to the process,” says Spremulli. “In addition, data should be collected and reviewed to determine whether processes and protocols are being used and what their effects are. Providing regular reports to leadership and frontline staff can quickly illustrate that following the processes and protocols is beneficial to patients and helps improve patient care.” To help remind staff of any processes and protocols, organizations may want to use visual prompts, such as posters or cards, to which staff members can easily refer when providing tracheostomy care. **PS**

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