

Speech-Language Pathology Guidelines for Adult Patients with COVID-19 in Acute Care Hospital Setting

1.1 Introduction:

The COVID-19 pandemic is linked with a new progeny of coronavirus, SARS-Cov-2. This virus affects the upper respiratory tract and causes an infectious disease. The main symptoms for COVID-19 include fever, coughing, sore throat, shortness of breath, fatigue, and changes in taste and smell. At present, evidence suggests that human to human transmission of COVID-19 occurs through contact with respiratory droplets generated by coughing and sneezing, infected secretions (such as saliva and sputum), and contaminated surfaces. Currently, there is no vaccine available for this new virus. COVID-19 patients who are admitted to the intensive care unit (ICU) or the medical ward need specific care. One of the required services that the patient with positive COVID-19 may need is speech-language pathology services to address their complex communication and/or swallowing issues. Therefore, the role of speech-language pathologists (SLP) with this population should be outlined. We summarized the best evidence available at the time of publication to guide considerations for the role of SLPs in the care of confirmed COVID-19 adults in the acute care hospital setting.

1.2 Purpose:

General Administration for Medical Rehabilitation and Extended Care in the Ministry of Health (MOH) in the Kingdom of Saudi Arabia (KSA) had issued the following guidelines to clarify the SLP role in confirmed COVID-19 adult patients in the acute care hospital settings in MOH, KSA.

1.3 Aim and Scope:

This document is aimed to provide fundamental information to the SLPs for managing adults with confirmed COVID-19 in the acute care hospital settings including screening to determine indications for speech, language, and swallowing assessment, in addition to interventions and infection control measures. However, furthermore, the recommendation did not outline the role of speech-language pathology in the pediatrics with positive COVID-19.

1.4 Setting:

ICU and medical wards in the acute care hospital settings, MOH, KSA.

1.5 Target Population:

Adult patients with a confirmed diagnosis of COVID-19 who are in the ICU or medical wards, and presented with difficulties in communicating and/or swallowing.

- Patients should be **excluded** from receiving the speech-language pathology services if they exhibit one of following:

1. Mean arterial pressure <65, >110, normal MAP = 70-90 mmHg.
2. Systolic BP >180 mmHg, >20% decrease in Systolic BP/Diastolic BP; orthostatic hypotension.

3. Heart rate <40, >130 beats/min, >20% decrease in resting HR.
4. Respiratory rate >40 breaths/min.
5. High fever.
6. Pulse oximetry <93% on oxygen therapy or Blood oxygen saturation: < 90% or drop > 4%.
7. Respiratory distress.
8. Arterial hypertension, brady-or tachycardia.
9. Dizziness and headache.
10. Patients on mechanical ventilation or high flow nasal cannula.
11. Glasgow Coma Scale of 13 and below.
12. Patients with tracheostomy tubes.

1.6 Target Audience:

SLPs who work in the ICU or medical wards in the acute care hospital settings, and provide assessment and/or treatment for adult patients affected by COVID-19.

1.7 Methodology: a group of experts from General Administration of medical Rehabilitation and Long term care in MOH sorted out the best available evidence taking in consideration the local hospital resources & other local authorities policies, followed by adaptation to those recommendations and finally the votes were taken for each point and then the guidelines was written and reviewed by Saudi Speech-Language Pathology Association .

1.8 Conflict Of Interest: None

1.9 Funding: None

1.10 Updating: we plan to conduct a continuous formal review of the COVID-19 literature, as it relates to speech-language pathology practice when new evidence in the field is available.

2. Best practice recommendations for Speech Therapy for Adult with COVID-19 in the acute care hospital setting:

2.1 Goal of Speech Therapy for Adult with COVID-19 in the acute care hospital setting:

Speech-language pathology services for adult patients with positive COVID-19 in the acute care hospital setting should include clinical assessment, instrumental assessment, direct treatment, caregiver education, and counseling. The main goals are:

- 2.1.1 Determine readiness for communication and swallowing assessment and intervention.
- 2.1.2 Assess the safety and efficiency for oral feeding and make proper recommendations.

- 2.1.3 Diagnose communication and swallowing problems and report results to the medical team and caregivers.
- 2.1.4 Assist the medical team in the provision of weaning plans of alternative feeding routes as well as weaning of respiratory support.
- 2.1.5 Advocate for patient rights to communicate through the use of technology (e.g. smartphone, tablets), low tech assistive communication tools, and voicing tools (e.g. speaking valve).

2.2 Referral system:

Patients are referred to the speech-language pathology services by the primary treating physician. After the referral, the SLP will review the eligibility of the patient's condition based on the targeted and exclusion criteria above then selects the suitable intervention based on the patients' needs. Patients with COVID-19 should be screened first by the nurse as per the SLP's instructions to check for readiness to conduct a bedside swallowing assessment.

2.3 Considerations of Speech-Language Pathology Interventions.

SLPs should consider the following points before initiating services with adults with confirmed COVID-19 diagnosis.

2.3.1	Clinical and instrumental assessments should only be provided when there are sufficient clinical indicators, so that staff exposure to patients with positive COVID-19 is minimized. Unnecessary contact with patients with positive COVID-19 should be avoided. If you cannot control and minimize your exposure to patient aerosols during the procedure, the risk of infection is very high; do not assess the patient.
2.3.2	If a speech-language pathology intervention is considered essential for a positive COVID-19 patient, appropriate personal protective equipment (PPE), chosen by the infection control unit at the hospital, must be identified and used.
2.3.3	Prior to engaging directly with the patient, SLPs should determine the appropriateness of the referral through communicating with the primary treating physician, nurse, and other medical team members. Medical chart should be read carefully, with the emphasis on the loss/changes in taste and smell, which may impact oral intake.
2.3.4	If the patient appears eligible for services, screening should be conducted first by a well-trained nurse, or the primary physician. If the patient fails the screening (e.g. Frazier water protocol), s/he will be provided with an alternative feeding rout, e.g. nasogastric tube feeding (NGT) and will be re-screened after three days. If the patient fails the re-screening, s/he will be referred to the SLP to conduct a bedside swallowing assessment with the highest precautions.
2.3.5	SLPs should not use of adjunct tools and techniques unless absolutely necessary. The oral mechanism examination must be done via observation and from a distance, at least two meters. Make sure not to face the patient. Do not conduct cough reflex examination or

	gag reflex examination. Moreover, a distant of at least two meters must be kept when assessing the patient.
2.3.6	Consultations with the medical team and family counseling can be conducted through the phone or teleconferencing to report results and recommendations.
2.3.7	Virtual session can be considered if possible, especially for speech and language services.
2.3.8	Collaborate with interprofessional partners for procedures requiring two or more people to preserve PPE (e.g., it is preferred that the nurse attends the evaluation for assistance and to observe any feeding techniques recommended by the SLP).
2.3.9	If any clinical procedures are modified as part of a risk management approach and infection control protocol, it should be clearly documented in the medical report.
2.3.10	If any of the exclusion criteria (mentioned in page 2) occurs during session, the SLP must stop the session and inform the nurse in-charge and the primary treating physician.
2.3.11	SLPs must have a general understanding of the lines and tubes they may encounter in the ICU to assure the safety of their patients and themselves.

2.4 Considerations of Speech-Language Pathology Services during the Intervention

SLPs should consider the following points during providing services for adults with confirmed COVID-19 diagnosis.

2.4.1	SLPs should work with the nursing staff, as per usual practice, to establish and carry out an oral care plan for all patients with positive COVID-19 to reduce risk of aspiration pneumonia and maintain oral hygiene.
2.4.2	SLPs should avoid performing all SLP-led endoscopic procedures, including fiberoptic endoscopic evaluation of swallowing (FEES) and modified barium swallow study (MBSS) on patients with positive COVID-19. If an instrumental swallow assessment is deemed necessary, SLPs can only conduct the MBSS given maximum precautions. SLPs should follow rigorous infection prevention and control policies. Establish a protocol in order to minimize contact with the patient, consequently minimizing the risk of spreading infection, and a protocol for decontamination of the radiology suite before and after the exam.
2.4.3	<u>Intervention with tracheostomy patients:</u>

-SLPs must not work with tracheostomy patients unless necessary. To minimize staff exposure risk and potential transmission, alternative models of care should be considered such as providing remote advice and guidance to the team.

Intervention may be delayed until the patients respiratory and/or medical status improved and the patient is closer to consideration for decannulation or COVID-19 swab result is negative

- SLPs can assist the otolaryngologist and medical team in the decision making of weaning off the patient. For safety and to control the virus transmission, it is “recommended” to only wean off patients when they recover from COVID-19 and negative results are found.

- The use of speaking valves and leak speech should be delayed for patients who are COVID-19 positive, as much as possible, until over acute infection and the risk of transmission is reduced.

Specific recommendations for patients on tracheostomy **with** invasive mechanical ventilation:

1-Minimize deflating cuff for ventilator-adjusted leak speech and the one-way speaking valve in-line with the ventilator.

2- Minimize above cuff vocalization with inflated cuff.

3- Minimize use of saline irrigation in airway or other liquids that may be aerosolized.

Specific recommendations for patients on tracheostomy **without** invasive mechanical ventilation:

1- Check cuff pressures, and carefully consider the risks of cuff deflation.

2- Defer one-way speaking valve in patients until viral load has had time to wane.

3- Consider delaying standard early intervention.

4- Consider deferring testing of gag reflex, inducing voluntary cough, palpating the hyolaryngeal movement, and oral trials.

- The timing of above cuff vocalization (with an inflated cuff) and cuff deflation for ventilator-adjusted leak speech or one-way speaking valve use should be discussed with the multidisciplinary team (MDT).

- When choosing to go ahead with opening the circuit and using a speaking valve, the open tracheostomy may be covered with a tracheal mask.

2.4.4 Intervention with laryngectomee patients:

	For laryngectomees and tracheostomy inpatients (and any potential Aerosol generating procedures patients (AGPs), COVID-19 test must be done before the seeing the patient to ensure safety during the session and the patient is negative. - Laryngectomy care and management including voice prosthesis changes, open stoma inspection and communication management/assessment are considered high-risk aerosol generating procedures therefore do not provide such services unless necessary and following extreme precautions. 1. The number of tracheoesophageal prosthesis procedures should be kept to a minimum. 2. Promote self-management of laryngectomy issues e.g., valve leakages, placement of tracheoesophageal voice prosthesis. 3- Access to a 'back up' means of communication if the voice prosthesis was to fail or be dislodged.
2.4.5	<u>Patients with oropharyngeal dysphagia (OD):</u> - Observe if the patient refers or presents clinical signs or symptoms for OD. - Concentrate on the safety of the patient's swallow while minimizing contact and exposure with the patient. Wear your PPE and do the bedside swallowing assessment as quickly as possible. - If deemed safe, self-feeding is encouraged if possible (with upright position). Distance should be kept at two meters, minimum. - Oral health: patients will be advised to brush their teeth and use mouthwash after each meal. If the patient is not autonomous, the health care providers should be equipped with PPE to perform oral hygiene. SLPs must educate the in-charge nurse or the respiratory therapist (RT) on the importance of oral hygiene. - Nutritional and fluid intake should be monitored and discussed with dietitian and the medical team. - In severe cases, patients may need to temporarily rely on tube feeding in order to satisfy their nutritional requirements when they are medically unstable. This decision must be made in consultation with the interprofessional team. NGT is most recommend for COVID-19 patients to reduce risk of infection. Oral feeding must be delayed on the basis of NGT presence.
2.4.6	- Communication and cognitive screening should be conducted through the in-charge nurse or the family members or during the bedside swallowing assessment. A verbal and/or nonverbal communication route should be established to aid communication interaction with the family and medical staff. That includes expressing pain and basic needs that aims to improve the well-being of the patient.

- Other communication options can be introduced as applicable such as: low technology methods for example, scanning of alphabet or picture charts, using eye pointing, finger pointing, writing or high technology devices, such as pillow switches to access communication buttons, iPads, depending on the patient's ability.
- Communication screening must be conducted while maintaining the infection control protocol and proper distancing as mentioned earlier.

3. Infection Control Measures for the Speech-Language Pathologist

3.1	The SLP assessing or treating COVID-19 positive patients should follow infection control guidelines for AGPs and must have access to full PPE: disposable single use gloves, disposable gown, N95 mask, goggles, disposable face shield, disposable foot cover, disposable hair net. Also, SLPs must have access to powered air-purifying respirators (PAPR) if needed, e.g. when SLP is not fitted with N95, unavailable full PPE, etc.
3.2	Patients who are COVID-19 positive should be in a negative pressure room, or if not available in a single isolated room.
3.3	The SLP must follow correct donning and duffing of PPE instructions, contact and droplet precautions, hand hygiene and respiratory etiquette.
3.4	PPE must be removed immediately (in the correct order) after completion of the session and before touching clean environmental surfaces.
3.5	Interprofessional partners involvement in the clinical procedure/consultation should be limited, unless they will assist in assessment or serve as facilitators for feeding or communication.
3.6	Use single use/disposable items if absolutely necessary and dispose immediately after usage in the patient's room.
3.7	Do not use equipment unless absolutely necessary and patient cannot wait and there are no alternative solutions. Moreover, prevent movement of equipment between infectious and non-infectious areas and use the viral and bacterial disinfectants.
3.8	The SLP must change the scrubs before leaving the health care facility and keep it in a sealed bag for washing.

3.9	The SLP must perform hand hygiene by hand rub technique: - Before and after entering the COVID-19 positive patient room. - Before and after assessing/treating the COVID-19 positive patient. - Before and after preparing or handling food. - Before and after feeding the COVID-19 positive patient. - Immediately after removing the PPE. - At the end of a workday.
3.10	- As possible, minimize touching the surfaces in the COVID-19 positive patient environment.
3.11	- Staff may be at higher risk of developing more serious illness from COVID-19 and should avoid exposure to patients with COVID-19. This includes, but is not limited to, staff who: - Are pregnant; - Have significant chronic respiratory illnesses; - Are immunosuppressed; - Are > 60 years of age; - Have severe chronic health conditions, such as heart disease, lung disease, and diabetes; - Have immune deficiencies diseases, such as neutropenia, disseminated malignancy.
3.12	-SLPs must measure their temperature daily; twice a day.
3.13	-If expected symptoms of COVID-19 develop, the staff member must self-isolate at home and must report their illness to those responsible for Workplace Health and Safety at their place of work.
3.14	-At the onset of each shift, supervisors must ensure that adequate screening has taken place with each staff member.

Disclaimer: The limitations to these guidelines include the following: it may change over time as we learn more about COVID-19 and its impact on human physiology and performance.

References

- 1- Speech Pathology Australia.(2020). Speech Pathology Australia guidance for service delivery, clinical procedures and infection control during COVID-19 pandemic. Available at <https://irp-cdn.multiscreensite.com/9a58e4f8/files/uploaded/SPA%201704%20Guidance%20for%20Service%20Delivery.pdf>
- 2- Mattei, A., de la Bretèque, B. A., Crestani, S., Crevier-Buchman, L., Galant, C., Hans, S., ... & Robert, D. (2020). Guidelines of clinical practice for the management of swallowing disorders and recent dysphonia in the context of the COVID-19 pandemic. *European annals of otorhinolaryngology, head and neck diseases*, 137(3), 173-175.
- 3- Royal Collage of Speech and Language Therapist.(2020). COVID-19 speech and language therapy rehabilitation pathway; Part of the Intensive Care Society Rehabilitation Working Party. Retrieved from <https://www.rcslt.org/-/media/rcslt-covid-19-slt-rehab-pathway.pdf?la=en&hash=B59AD546C6E368A34D7AA63165DC568C65428B2C>
- 4- Zaga, C. J., Pandian, V., Brodsky, M. B., Wallace, S., Cameron, T. S., Chao, C., ... & Vogel, A. P. (2020). Speech-Language Pathology Guidance for Tracheostomy During the COVID-19 Pandemic: An International Multidisciplinary Perspective. *American Journal of Speech-Language Pathology*, 1-15.
- 5- Clavé, P., Arreola, V., Martín, A., Costa, A., Nascimento, W., Carrión, S., Ortega, O., & Schindler, A. (2020, April 6). *BASIC PROCEDURES TO ASSESS AND TREAT OROPHARYNGEAL DYSPHAGIA IN PATIENTS WITH COVID-19 INFECTION*. Furega. <https://www.furega.com/covid-19/covid-eng.pdf>
- 6- McRae, J., Montgomery, E., Garstang, Z., & Cleary, E. (2019). The role of speech and language therapists in the intensive care unit. *Journal of the Intensive Care Society*, 1751143719875687.
- 7- Namasivayam-MacDonald, A. M., & Riquelme, L. F. (2020). Speech-Language Pathology Management for Adults With COVID-19 in the Acute Hospital Setting: Initial Recommendations to Guide Clinical Practice. *American journal of speech-language pathology*, 1-16.
- 8- Hennessy, M., Bann, D. V., Patel, V. A., Saadi, R., Krempf, G. A., Deschler, D. G., ... & Choi, K. Y. (2020). Commentary on the management of total laryngectomy patients during the COVID-19 pandemic. *Head & Neck*, 42(6), 1137-1143.