

ORIGINAL RESEARCH

A Consensus Statement for the Management and Rehabilitation of Communication and Swallowing Function in the ICU: A Global Response to COVID-19



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Abstract

Objective: To identify core practices for workforce management of communication and swallowing functions in coronavirus disease 2019 (COVID-19) positive patients within the intensive care unit (ICU).

Design: A modified Delphi methodology was used, with 3 electronic voting rounds. AGREE II and an adapted COVID-19 survey framework from physiotherapy were used to develop survey statements. Sixty-six statements pertaining to workforce planning and management of communication and swallowing function in the ICU were included.

Setting: Electronic modified Delphi process.

Participants: Speech-language pathologists (SLPs) (N=35) from 6 continents representing 12 countries.

Interventions: Not applicable.

Main Outcome Measures: The main outcome was consensus agreement, defined a priori as $\geq 70\%$ of participants with a mean Likert score ≥ 7.0 (11-point scale: 0 = strongly disagree, 10 = strongly agree). Prioritization rank order of statements in a fourth round was also conducted.

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Results: SLPs with a median of 15 years of ICU experience, working primarily in clinical (54%), academic (29%), or managerial positions (17%), completed all voting rounds. After the third round, 64 statements (97%) met criteria. Rank ordering identified issues of high importance.

Conclusions: A set of global consensus statements to facilitate planning and delivery of rehabilitative care for patients admitted to the ICU during the COVID-19 pandemic were agreed by an international expert SLP group. Statements focused on considerations for workforce preparation, resourcing and training, and the management of communication and swallowing functions. These statements support and provide direction for all members of the rehabilitation team to use for patients admitted to the ICU during a global pandemic.

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a highly contagious virus responsible for the coronavirus disease 2019 (COVID-19) outbreak and consequential global pandemic.^{1,2} As of October 6, 2020, there were 35.5 million cases and a sobering 1,044,490 deaths from COVID-19.³ Intensive care unit (ICU) admissions with infected patients have increased,^{1,4} ranging from 5%-16%^{5,6} in China, 9%-46% in Italy,^{7,8} and as high as 30% in California and Washington.⁹ Patients positive for COVID-19 who are intubated, frequently endure lengthy durations of mechanical ventilation, including being turned prone to improve respiratory function, resulting in higher levels of sedation and longer durations of immobilization resulting in iatrogenic impairments that include muscle weakness, fatigue, dysphagia, (neuro)psychological impairments, and impaired activities of daily living.¹⁰⁻¹² Moreover, severe SARS-CoV-2 infection has also resulted in patients acquiring neurologic conditions such as Guillain-Barre syndrome, stroke, and/or corticospinal tract signs after hospital discharge,¹³⁻¹⁷ emphasizing rehabilitation needs.

Rehabilitation specialists have been historically underutilized in the ICU. Speech-language pathologists (SLPs) are part of the modern ICU team, providing a key role in intensive care¹⁸⁻²⁰ and tracheostomy teams.²¹⁻²³ SLPs provide clinical expertise in cognitive communication²⁴ and swallowing functions^{25,26} in the clinical management of patients during and after mechanical ventilation, regardless of the presence of an oral or nasal endotracheal tube or a tracheostomy.

Survivors of critical illness require access to care and resources for effective recovery and return to work.²⁷ However, little is known about communication and swallowing management or rehabilitation needs for patients with COVID-19. Empirical studies regarding the rehabilitation of patients with COVID-19 are yet to emerge and peer-reviewed guidelines for the management of patients with COVID-19 admitted to ICUs to date have focused on nursing, medical, and physiotherapy practice.^{28,29} Clinical considerations and guidance for acute, subacute, and rehabilitation practices,^{30,31} specifically to support SLP management of communication and swallowing function during the COVID-19 pandemic, are emerging.³²⁻³⁵ The aim of this study was to determine consensus on core SLP practices for workforce management and the management of both communication and

swallowing functions in patients diagnosed with COVID-19 admitted to the ICU.

Methods

Participant recruitment

SLPs with at least 5 years of clinical experience working in ICUs were invited to participate by the principal investigators (A.F.S., M.B.B.). All SLPs recruited were either known to the investigators or identified by peers as recognized experts with publications and/or presentations at major international conferences and with expertise in assessing and treating patients in the ICU for communication and swallowing disorders. Experts were sought across 6 continents to provide a global lens with varied clinical, managerial, and research experiences, and varied COVID-19 pandemic experiences. Ethics approval was obtained from the University of Technology Sydney and Johns Hopkins University, and all participants provided informed consent.

Survey development

AGREE II³⁶ and an adapted framework of questions²⁹ were used to develop tools for consensus ratings. The statements contained in the survey were developed from guidelines and published research accessible from web searches, speech-language pathology, otolaryngology, and intensive care societies published earlier than April 8, 2020 in conjunction with expert opinion from the authorship group. A prestudy virtual meeting was held on April 7, 2020 to outline study aims, methods, and timeline. The group was then asked to (1) individually and anonymously review and comment on the 72 draft statements planned for inclusion in the survey and (2) contribute up to 3 additional statements for consideration. In total, the group provided 22 additional statements and after duplicates were removed, 15 statements were included. The PIs consolidated and refined the statements further to exclude statements outlining standard practice, with the final set of 66 statements included in the May 11, 2020 distribution.

Modified Delphi methods

The Delphi process convenes a group of experts for decision making during an iterative process of questions, anonymous responses, and controlled feedback to the respondents.³⁷ This study involved 3 rounds of modified Delphi consensus voting. The online platform Qualtrics (2019) was used to collect both the demographic and questionnaire data.³ Each round, participants were reminded that the content was confidential and they were not to share, discuss, or distribute any content. Participants were further reminded to respond using his/her own knowledge and

List of abbreviations:

AGP	aerosol generating procedure
COVID-19	coronavirus disease 2019
ICU	intensive care unit
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2
SLP	speech-language pathologist
VFSS	videofluoroscopic swallow study

expertise independent of his/her country, place of business, affiliation, society membership, guideline, or other external guidance.

Each participant was sent the link to Round 1 on May 11, 2020, categorized into 3 domains: (1) workforce planning, preparation, and management, including statements ($n=25$) relating to organization of personnel and resources to address clinical surge and distribution across service lines; (2) management of communication function, which considered the organization and resources for assessing and promoting effective patient understanding and expression, regardless of whether the patient was intubated with mechanical ventilation, postextubation, or not intubated ($n=15$ statements); and (3) management of swallowing function ($n=26$ statements), which considered the organization and resources for assessing and promoting safe and effective swallowing (supplemental material S1, available online only at <http://www.archives-pmr.org/>). An 11-point Likert scale was used to rate each statement (0 = strongly disagree, 10 = strongly agree). Consensus agreement was operationally defined a priori as $\geq 70\%$ ^{29,38,39} of the participants with a mean Likert score ≥ 7.0 for any statement.

In Round 1, participants were asked to rate agreement with all 66 statements. During Rounds 2 and 3, participants were asked to rate only those statements that failed to meet consensus on Round 1 or 2, respectively, and explain why they chose that rating for each statement. In both Rounds 2 (beginning May 15, 2020) and 3 (beginning May 19, 2020), the mean score and standard deviation (obtained from previous round) for any included statement was provided as feedback. In addition, Round 3 feedback included 2 anonymous remarks each from participants who scored statements ≤ 2 and ≥ 8 from Round 2 that represented reasons for why these *extreme* scores were chosen. These remarks were included as feedback for Round 3 and chosen for inclusion by the PIs. All participants were advised in advance of the planned dates and timing of each round of consultation, with each round sent to participants with 96 hours to complete.

An exploratory fourth round (beginning May 24, 2020) of anonymous voting and unrelated to the modified Delphi procedures was added to rank order priorities within each of the 3 domains of questions. Statements that scored a mean Likert score ≥ 9 and $\geq 90\%$ consensus were included.

Statistical analysis

Descriptive statistics were used to analyze demographic and statement data. Differences between groups were analyzed using the Kruskal-Wallis H test. Weighted rank ordering was used to determine prioritization. Stata version 12.1^b and Microsoft Excel 2019^c were used for statistical analyses.

Results

Thirty-five invitations were sent to experts representing 6 continents (12 countries). All agreed to participate. Participants self-identified their current primary role as 19 clinical (54%), 10 academic or research (29%), and 6 managerial or administrative (17%), with a median of 19 (interquartile range: 10-24) years of experience. Years of experience did not differ significantly between groups ($H(2)=3.438$, $P=.18$). Participants collectively had a median of 15 (interquartile range: 10-20) years clinical ICU

experience with no significant difference between groups ($H(2)=1.896$, $P=.38$).

Modified Delphi results

The 3 modified Delphi rounds each had a response rate of 100% (35/35 participants) and was completed within 96 hours of the electronic questionnaire distribution. All participants attested that there was no communication between the PIs, the participants, or other colleagues regarding the content of the questionnaire throughout the modified Delphi rounds.

Round 1 resulted in consensus for 61 of 66 statements (92%) across the 3 domains. Round 2 included the 5 items that failed to meet consensus, and agreement was reached for 2 of the 5 statements. Round 3 contained 3 statements, with consensus reached for 1. At the end of 3 modified Delphi rounds, 64 of 66 statements (97%) reached consensus (table 1), with 1 statement in management of communication function and 1 statement in management of swallowing function that did not reach consensus.

Workforce planning, preparation, and management

In Round 1, 24 of 25 statements (96%) reached consensus. The statement that did not reach consensus was "Strategies, considering patient/family goals, should be posted outside of the patient's room immediately after evaluation or change in recommendations," (mean \pm SD = 7.1 ± 2.2 , consensus 57%). In Round 2, consensus was reached (mean \pm SD = 7.3 ± 2.2 , 74% consensus).

Management of communication function

In Round 1, 14 of 15 communication statements (93%) reached consensus. The statement that did not reach consensus was "Speaking (ie, oral communication) is a low risk aerosol generating procedure (AGP)" (mean \pm SD = 5.9 ± 2.9 , 49% consensus). In both Rounds 2 and 3, this statement failed to reach consensus (Round 2: mean \pm SD = 5.8 ± 2.8 , 57% consensus; Round 3: mean \pm SD = 5.9 ± 2.8 , 63% consensus).

Management of swallow function

In Round 1, 23 of 26 statements (88%) reached consensus. The 3 statements that did not reach consensus were (1) "Assessment of the gag reflex is considered an aerosol generating procedure (AGP). Assessment should be discussed with the treating ICU team" (mean \pm SD = 7.1 ± 3.0 , 66% consensus); (2) "A voluntary cough (ie, asking the patient to cough) is considered an aerosol generating procedure. Assessment should be discussed with the treating ICU team" (mean \pm SD = 7.2 ± 3.1 , 63% consensus); and (3) "Swallowing therapy tasks that are aerosol generating tasks should be provided to patients" (mean \pm SD = $6.9 \pm$, 57% consensus). After Round 2, participants only agreed that a voluntary cough is an AGP (mean \pm SD = 7.7 ± 2.6 , 86% consensus), whereas *testing the gag reflex* (mean \pm SD = 6.9 ± 2.5 , 71% consensus) and *swallowing therapy tasks* (mean \pm SD = 6.8 ± 2.6 , 63% consensus) failed to reach consensus. At the end of Round 3, swallowing therapy tasks reached consensus (mean \pm SD = 7.3 ± 2.7 , 77% consensus), but testing the gag reflex did not reach consensus (mean \pm SD = 5.3 ± 3.2 , 49% consensus).

Table 1 Delphi voting rounds

Survey Components	Round 1		Round 2		Round 3	
	Statements Voted	Consensus Reached	Statements Voted	Consensus Reached	Statements Voted	Consensus Reached
Workforce planning, preparation, and management	25	24	1	1		
Management of communication function	15	14	1	0	1	0
Management of swallowing function	26	23	3	1	2	1
Total statements	66	61	5	2	3	1

Post hoc analysis

A post hoc analysis was completed to address the 17 statements that contained an additional phrase: "...should be discussed with the treating ICU team" (or similar). All these statements regarded AGPs. On June 17, 2020, a questionnaire was distributed, specifically removing this phrase from each statement ([supplemental material S2](#), available online only at <http://www.archives-pmr.org/>). Two additional questions asked participants to average how frequently and how much weight the "discuss with the treating ICU team" phrase influenced the ratings across all questions containing this phrase using a 0-10 scale (ie, 0=never, 10=always). There was 100% response rate (35/35 participants). Consensus was reached on 15 of 17 statements (88%) using previously stated criteria for consensus. The 2 statements that did not reach consensus were (1) "Swallowing/feeding trials may be considered an aerosol generating procedure" (mean \pm SD=7.4 \pm 2.7, 66% consensus) and (2) "Videofluoroscopic swallow studies (VFSS) may be considered an aerosol generating procedure" (mean \pm SD=7.5 \pm 2.6, 66% consensus). Finally, for the phrase "...should be discussed with the treating ICU team" (or similar), participants reported a mean \pm SD of 7.3 \pm 2.7 for how frequently they regarded the phrase and a mean \pm SD of 6.5 \pm 2.3 for how much weight they placed on the phrase.

Rank order results

Thirty-three statements resulted in a mean \geq 9.0 for \geq 90% of participants during voting rounds. These statements were ranked in priority order across the 3 survey sections ([table 2](#)) that encompassed 5 themes ([table 3](#)). The top 3 statements included identify staff with ICU-specific skills in relation to communication, swallow, and tracheostomy management; access to resources for example, glasses, hearing aids, call bells, augmentative and alternative communication to enable increased patient communication; and staff should meet regularly with ICU staff (ie, physicians, nurses) to determine indications for swallowing management in patients with (or suspected) COVID-19.

Discussion

This study engaged a global expert panel of SLPs to determine consensus in 3 domains of SLP practice in the ICU that apply more broadly to rehabilitation professionals and the ICU multidisciplinary teams in several countries. Our criteria for defining consensus ensured a high threshold for final inclusion. We achieved consensus for 97% of the questionnaire's 66 statements across 3 distinct groups of professionals (ie, clinicians, academics/researchers, managers/administrators) from 12 countries on 6

continents regardless of ICU specialty. The 2 statements that did not reach consensus both related to classifying tasks or behaviors as AGPs, one related to communication, the other related to swallowing. Considering the current lack of clarity regarding exactly what SLP tasks meet the criteria for classification as AGPs, this finding is not unexpected.^{40,41} However, it does highlight a potential difference in perceived approaches in management of safety risk, work, and health. Prioritization for our panel of SLPs differed across domains. For workforce planning, preparation, and management, highest priority was given to specialist training for SLPs and caseload management strategies. For management of communication, highest priority was given to communication access for patients in the ICU. Finally, for management of swallowing, focus was almost entirely on viral containment and enabling patients to continue to receive appropriate and timely swallow assessments and rehabilitation without risking the health of the health professionals (see [table 3](#)).

Participants agreed that rehabilitation occurs within and beyond the ICU. As a group, participants' highest ranked item for the workforce planning and management section was the need to identify SLPs with specific skills for the provision of communication and swallowing rehabilitation in ICU patients. To bolster extent and continuity of care, a multidisciplinary team inclusive of physicians, advanced-practice providers (eg, nurse practitioner, physician assistant), nurses, respiratory therapists, physical therapists, occupational therapists, dietitians, and social workers is also necessary, but this is only a first step.²⁰ Strategic planning, including contingencies for service delivery of independent and specialized clinical practices within the changing nature of the pandemic, should be considered. In fact, as an autonomous clinical provider, the weight and frequency of how SLPs regarded the phrase "...should be discussed with the treating ICU team" influenced their ratings. Prioritizing staffing is paramount to deliver rehabilitation services that will reduce morbidities and to promote improved functional outcomes in survivors of critical illness.

Access to equipment and resources for purposes of enabling patient communication function was regarded as the highest statement within the communication management survey section. Communication difficulties in the ICU arise from a variety of factors, including loss of voice with mechanical ventilation. Other communication difficulties can cooccur with onset of acquired weaknesses. As a result, patients have diverse communication needs during admission to the ICU and may require communication supports with all members of the rehabilitation team during periods on and off mechanical ventilation.

Consideration of AGPs is a concept that arose particularly within swallowing function at the start of the COVID-19 pandemic. There were 14 of 15 AGP statements (93%) in the management of swallowing function section of questionnaire that

Table 2 Prioritization results

	Total Rank Score	Rank
Workforce Planning, Preparation, and Management		
Identify staff with ICU-specific clinical skills in relation to communication, swallow, and tracheostomy patient management.	369	1
Transparent, clear, and timely communication of COVID-19 infection information relating to ICU care.	334	2
Review of current caseload service delivery to identify capacity for increased service provision to higher acuity and increased clinical demand.	304	3
Transparent, clear, and timely communication of COVID-19 infection information from federal authorities for training in COVID-19 appropriate PPE.	304	3
Educate staff to minimize environmental cross contamination with equipment.	284	5
Facilitate clinical education for ICU-specific clinical skills in relation to communication, swallow, and tracheostomy patient management.	282	6
Educate staff for the developments of COVID-19-specific disease progression (eg, delayed onset of new laryngeal symptoms, PICS).	256	7
Monitor staff mental well-being.	213	8
Consider provision of rehabilitation services for post-ICU discharge, including access for ongoing swallow and communication therapies.	190	9
Staff access to uniforms (eg, scrubs) for provision of care in ICU.	187	10
Educate staff of reporting guidelines for clinical incidents related to COVID-19.	180	11
Consider additional resources (including training) for the acquisition of telehealth capabilities.	143	12
Consider staff training needs for provision of rehabilitation services post-ICU discharge (ie, PICS)	139	13
Management of Communication Function		
Access to resources (eg, glasses, hearing aids, call bells, AAC) to enable increased patient communication.	247	1
Make accessible a range of communication options to address diverse communication profiles, including alternative and augmentative communication systems and strategies, to non-SLP staff (eg, nurses, physicians).	220	2
Patients should be provided with support for engaging with family and support networks using communication aids and technologies.	209	3
First consider nonaerosol generating communication supports and aids.	195	4
Consider interpreting services (via phone or electronics) to enhance communication (to include culturally and linguistically diverse backgrounds).	172	5
Cuff deflation is an AGP. Communication procedures for patients with a tracheostomy that require cuff deflation (eg, speaking valves, leak speech) during mechanical ventilation should be discussed with the treating ICU team.	159	6
Cuff deflation is an AGP. Communication procedures for patients with a tracheostomy that require cuff deflation (eg, speaking valves, leak speech) without mechanical ventilation should be discussed with the treating ICU team.	147	7
Above cuff phonation is an AGP. Management and use should be discussed with the treating ICU team.	129	8
Communication procedures for patients with a stoma (ie, laryngectomy including voice prostheses) should be discussed with the treating ICU team.	97	9
Management of Swallowing Function		
Staff should meet regularly with ICU staff (ie, physicians, nurses) to determine indications for swallowing management in patients with (or suspected) COVID-19.	322	1
Cuff deflation is an AGP. Swallowing procedures for patients with a tracheostomy that require cuff deflation (eg, speaking valves) during mechanical ventilation should be discussed with the treating ICU team.	240	2
Cuff deflation is an AGP. Swallowing procedures for patients with a tracheostomy that require cuff deflation (eg, speaking valves) without mechanical ventilation should be discussed with the treating ICU team.	231	3
Flexible endoscopic evaluation of swallowing is considered an AGP. Assessment should be discussed with the treating ICU team.	227	4
Patients should be supported to independently complete aspects of swallow rehabilitation as able.	217	5
Noninvasive ventilation (eg, high-flow nasal oxygen, BiPAP) is considered an AGP. A swallowing assessment in this context should be discussed with the treating ICU team.	210	6
Patients should be encouraged to self-feed where able.	210	6
Swallowing therapy tasks that are not aerosol generating tasks should be provided to patients.	208	8
VFSS may be considered an AGP. Assessment should be discussed with the treating ICU team.	183	9

(continued on next page)

Table 2 (continued)

Management of Swallowing Function	Total Rank Score	Rank
Cleaning noninvasive equipment (eg, stethoscopes, flashlights, ultrasound) between patients should be discussed with the ICU staff due to risk of cross contamination and health care worker infection.	167	10
Respiratory muscle strength training (ie, EMST and IMST) is considered an AGP. Implementation should be discussed with the treating ICU team.	95	11

Abbreviations: AAC, augmentative and alternative communication; BiPAP, bilevel positive airway pressure; PICS, postintensive care syndrome; PPE, personal protective equipment; EMST, expiratory muscle strength training; IMST, inspiratory muscle strength training.

reached consensus. From January to May, AGP definitions and their delineation of risks continued to mature.^{40,42,43} The timing of the questionnaire distributions began during the time of full lockdown, arguably the time of most conservative thinking and uncertainty. Interestingly, the post hoc questionnaire underscored these findings, but also demonstrated a shift in opinions concerning swallowing feeding trials and the VFSS, that is, more disagreement that these 2 procedures should be regarded as AGPs. Distribution of this post hoc questionnaire in mid-June was approximately 1 month after several countries began phases of reopening. VFSS services or clinics, in particular, were largely shut down across many institutions prior to June when they began reopening.⁴⁴ With 5 weeks between Round 1 and the post hoc questionnaires, this shift in opinions may reflect practice changes and clinical experience, as we learned that differences with the density and potential transmission of SARS-CoV-2 during AGPs can vary across physiological functions of speaking and breathing. This new evidence may have been reflected in the variation of opinions in the expert group.⁴⁵⁻⁴⁹

Ongoing research into the rehabilitation needs and outcomes of survivors of COVID-19 is needed to assist with ongoing workforce planning and delivery of health care. Full participation across all Delphi rounds and our panelists' experience,

individually spanning multiple countries, attests to the robustness of our findings and the broad applicability across geographic boundaries in practice.

Limitations

Despite efforts to ensure rigorous methodology, the study has limitations that need to be considered. Recruitment was through a network of experienced ICU clinicians and clinical researchers, and hence it may not have represented the views of all clinicians. Also, it is acknowledged that although 12 countries were within the participant cohort, the majority (66%) came from 3 specific countries (ie, Australia, United Kingdom, United States). However, both between and within these countries, variation is evident with SARS-CoV-2 infection rates, pandemic response, and clinical practice.⁵⁰ As such, we believe each participating clinician brought differing perspectives and experiences to the study, independent of demographic or country composition.

Governing bodies and professional organizations were frequently updating opinions and offering new guidance for safety, clinical procedures, and clinical management. To this point, the World Health Organization declared COVID-19 a pandemic on March 11, 2020.⁵¹ This questionnaire was finalized on April 14,

Table 3 Prioritization statements themed

Theme	No. of Statements	Examples
Viral containment	16	Transparent, clear, and timely communication of COVID-19 infection information relating to ICU care. VFSS may be considered an AGP. Assessment should be discussed with the treating ICU team.
Managing extreme workloads/influx of patients	2	Review of current caseload service delivery to identify capacity for increased service provision to higher acuity and increased clinical demand. Staff should meet regularly with ICU staff (ie, physicians, nurses) to determine indications for swallowing management in patients with (or suspected) COVID-19.
Specialist training and staff well-being	5	Identify staff with ICU-specific clinical skills in relation to communication, swallow, and tracheostomy patient management. Consider staff training needs for provision of rehabilitation services post-ICU discharge (ie, PICS)
Communication accessibility	7	Access to resources (eg, glasses, hearing aids, call bells, AAC) to enable increased patient communication. Consider additional resources (including training) for the acquisition of telehealth capabilities.
Swallow intervention accessibility	5	Patients should be supported to independently complete aspects of swallow rehabilitation as able. Swallowing therapy tasks that are not aerosol generating tasks should be provided to patients.

NOTE. Some statements crossed over 2 themes.

Abbreviation: AAC, augmentative and alternative communication.

2020 and distributed with ethics committee approvals on May 11, 2020, during the time when the evidence base was emerging. Generally speaking, survey instruments are quick and responsive to obtaining new information. In the rapidly changing environment of a new pandemic, changes in understanding SARS-CoV-2 continued to drive daily policy changes.⁵²⁻⁵⁴ These changes may not have been updated between the questionnaire's development and its distribution. Global dissemination and relative acquisition of the latest information may not have been equal, potentially leading to differing professional opinions on these 2 AGP statements. Moreover, we were unable to determine whether the variable opinions among participants was a reflection of regional differences, general ICU experience, or service experience during the COVID-19 pandemic.

Despite the global variability that is known to exist with COVID-19 infection rates and the personal experiences of clinicians in each service and each country, the current study was able to obtain consensus on all but 2 of the items. Because of this, we believe the current findings objectively represent a group of professionals with differing experiences, but who maintain a unified mindset and approach to the management, assessment, and treatment of communication and swallowing management for patients in ICU diagnosed with COVID-19. Further research is need to explore regional and country needs with the changing nature of COVID-19.

Conclusion

Rehabilitation during the COVID-19 pandemic brings challenges for patients, health care workers, and organizations with the added complexity of the highly infectious and transmissible nature of SARS-CoV-2. Key areas of patient rehabilitation within the ICU include communication and swallowing functions. The statements contained in the questionnaire help guide the design and delivery of services to improve communication and swallowing function, while protecting staff and limiting the risk of virus spread. For managers, the workforce statements also support decisions regarding the management of the SLP workforce providing these services. The consensus statements from this work provide a unified voice to guide clinicians in the planning, implementation of initiatives, and prioritization of services for swallowing and communication management in the ICU, and then into the post-ICU rehabilitation phase.

Suppliers

- a. Qualtrics; Qualtrics^{XM}.
- b. Stata version 14.0; StataCorp, Inc.
- c. Excel; Microsoft.

Keywords

Communication; COVID-19; Critical care; Deglutition disorders; Rehabilitation; SARS-CoV-2; Telemedicine

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