Pandemic Planning for Hospital-Based Speech-Language Pathologists: Emerging Lessons from Coronavirus Disease

Plan de lutte contre les pandémies pour les orthophonistes travaillant en milieu hospitalier : les leçons émergeant de la pandémie de la maladie à coronavirus

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Abstract

Coronavirus Disease is a novel infectious agent, for which a global pandemic was declared in March 2020. Regulatory bodies representing Canadian speech-language pathologists recommended suspending non-essential services or converting to telepractice/virtual practice where appropriate. However, there is a lack of literature on surge or pandemic planning for speech-language pathologists working in hospital settings where face-to-face visits cannot be eliminated and are essential. This discussion aims to address this gap by providing a systems-thinking approach to pandemic planning for speech-language pathology services. This article uses the "Stuff, Staff, Space, and Systems" framework to promote workforce safety and stability in the context of complex hospital systems. Main areas that speech-language pathology leaders should review with their teams include equipment, environment, staff areas of expertise, opportunities that support both work and home life stressors, potential supports for mental health, factors that may alleviate moral distress, and processes within the speech-language pathology team and within interprofessional teams. Novel situations, such as that created by Coronavirus Disease, create situations that are challenging to individual clinicians, but also to broader teams and services. This challenge necessitates transparent communication and a systems-thinking approach to review speech-language pathologists' complex work environments and protect teams' physical and mental health.

Abrégé

La maladie à coronavirus est une nouvelle maladie infectieuse, pour laquelle une pandémie mondiale a été déclarée en mars 2020. Les organismes de réglementation qui représentent les orthophonistes du Canada ont recommandé de suspendre les services non essentiels ou d'offrir les services en télépratique lorsque cela s'avérait pertinent. Cependant, il y a un manque de littérature sur les plans de lutte contre les pandémies ou la planification en vue de période d'intensification adaptés aux services offerts par les orthophonistes travaillant en milieu hospitalier, milieu où les visites en personne ne peuvent être éliminées et s'avèrent essentielles. Le présent article vise à combler ce manque d'informations en proposant une approche systémique pour les plans de lutte contre les pandémies adaptés aux services offerts en orthophonie. Le cadre *Stuff, Staff, Space, and Systems* [matériel, personnel, espace et systèmes] est utilisé afin de favoriser la sécurité et la stabilité de la main-d'œuvre dans un contexte de systèmes hospitaliers complexes. Les principaux aspects que les responsables des services d'orthophonie devraient examiner avec leurs équipes sont l'équipement, l'environnement, les domaines d'expertise de chaque professionnel, les options de soutien face aux différentes sources de stress au travail et à la maison, les ressources potentielles de soutien en santé mentale, les facteurs susceptibles d'atténuer la détresse morale, ainsi que les processus au sein de l'équipe d'orthophonistes et des équipes multidisciplinaires. De nouvelles circonstances, comme celles provoquées par la pandémie de la maladie à coronavirus, créent des situations difficiles non seulement pour les cliniciens au plan individuel, mais également pour les équipes et les services. La présente situation difficile nécessite une communication transparente et une approche systémique pour examiner les environnements de travail complexes des orthophonistes et pour protéger la santé physique et mentale de ces équipes de professionnels.

Coronavirus Disease (COVID-19) is an infectious disease caused by a novel coronavirus, SARS-CoV-2, that arose in Wuhan, China, in December 2019 (World Health Organization, 2020a). COVID-19 was declared a pandemic on March 11, 2020, given the potential for spread and severity, paired with concerns related to governmental response (World Health Organization, 2020b). Like other jurisdictions, the Canadian government recognized COVID-19 as a serious threat to the health of individuals as well as to the capacity of healthcare resources (Government of Canada, 2020). Accordingly, the Canadian government worked in partnership with all levels of government to prepare and monitor transmission and healthcare resources given the constantly evolving local and global situation (Government of Canada, 2020).

In response to the pandemic, regulatory bodies representing Canadian speech-language pathologists (S-LPs) have recommended the suspension of non-essential services or the conversion to telepractice/virtual practice (i.e., Alberta College of Speech-Language Pathologists and Audiologists, 2020; College of Audiologists and Speech-Language Pathologists of Manitoba, 2020; College of Audiologists & Speech-Language Pathologists of Newfoundland and Labrador, 2020; College of Audiologists and Speech-Language Pathologists of Ontario, 2020; College of Speech and Hearing Health Professionals of British Columbia, 2020; Nova Scotia College of Audiologists and Speech-Language Pathologists, 2020; Ordre des orthophonistes et audiologistes du Québec, 2020; Saskatchewan Association of Speech-Language Pathologists and Audiologists, 2020). Although there is evidence supporting the provision of telepractice services in speech, language, and hearing professions (Molini-Avejonas et al., 2015), there is a paucity of peer-reviewed literature on pandemic planning for hospital-based S-LPs who cannot eliminate face-to-face care. Moreover, there is urgency for relevant guidance on pandemic planning given the potential for second wave caseload surges related to the viral pandemic.

As the pandemic continues to evolve internationally, further statements have been released to guide essential and emergent clinical care by S-LPs (i.e., American Speech-Language-Hearing Association, 2020; Fritz et al., 2020; Irish Association of Speech & Language Therapists, 2020; Kho et al., 2020; Miles et al., 2020; Royal College of Speech and Language Therapists, 2020; Speech Pathology Australia, 2020). These guidelines have provided much needed information on the appropriate use of personal protective equipment (PPE) and infection prevention and control strategies to reduce the risk of transmission to providers,

clients, patients, and visitors (Public Health Ontario, 2020). Also, these guidelines have provided suggestions for individual clinicians on higher risk procedures (e.g., flexible endoscopic evaluation of swallowing, tracheostomy care). These guidelines include conducting risk assessments prior to contact, triaging patients who require direct contact, physical distancing during patient care, modifying procedures for swallowing and communication assessments, and navigating ethical considerations when working outside providers' normal scope of practice.

However, there has to-date been a lack of information to guide speech-language pathology leaders on pandemic planning in the context of complex hospital systems with complex processes to promote workforce safety and stability. This need for systems-level thinking represents a shift from guidelines informing individual clinicians on their practices to those informing broader speech-language pathology services, similar to how a public health response to COVID-19 necessitates a critical shift away from *person*-centred care and towards *community*-centred care (Nacoti et al., 2020). This shift poses a critical challenge for S-LPs to systematically analyze processes and settings to maintain functioning of the speech-language pathology team (for both COVID-19 and non-COVID-19 care), and manage ethical concerns and moral distress that may arise with this shift in thinking.

The Scope of the Problem: Projections for COVID-19 in Canada

Just as Nacoti et al. (2020) advocated for improved coordination among decision-makers and public health and epidemiology professionals, the potential impact of COVID-19 on speech-language pathology practice must guide speech-language pathology pandemic plans. Quantifying the problem of COVID-19 for hospital-based S-LPs is a major challenge as it is unclear how COVID-19 will align or misalign to the disease course of currently profiled illnesses. Caseloads for any profession in the hospital system are strongly tied to overall hospital occupancy. Canada's occupancy rates are consistently high at approximately 91.6% of hospital beds occupied in 2019; on a global scale, this is third only to Ireland and Israel (Organisation for Economic Cooperation and Development, 2019). With such high baseline occupancy rates creating stressors for hospital services, it is difficult to estimate how COVID-19 cases will impact speech-language pathology caseloads.

Despite the challenges above, the use of quantitative data still has utility to anticipate the potential impact on caseload by illustrating the projected impact of COVID-19

on Canadian hospital resource utilization. **Table 1** summarizes projected daily hospital and intensive care unit (ICU) admissions at the anticipated "second wave" peak in January 2021, as well as approximate daily admissions in the April–May 2020 peak. It should also be noted that national data may not accurately represent more localized epidemic rates, and as such, should be used with caution. Second wave cases may also differ from estimates related to different public health measures between first and second wave and interaction with influenza season.

Although COVID-19 surge planning is front-of-mind when preparing during pandemics, speech-language pathology services should also be aware of the potential surges in non-COVID illnesses related to restrictions and delays on non-urgent care (Tseng, 2020a). This could include impacts on individuals with chronic disease and medical frailty (Heckman et al., 2020), cancers (Saini et al., 2020), and cardiovascular emergencies (Tam, 2020), and the potential implications for speech-language pathology caseloads. Although the disease course for COVID-19 is not yet fully understood, post-acute needs may also impact hospital-based speech-language pathology caseloads by way of the need for rehabilitation (Brugliera et al., 2020; Carda et al., 2020) and the ability of post-acute discharge locations to appropriately care for individuals who have survived COVID-19 (Grabowski & Joynt Maddox, 2020).

Ethics

Individual clinicians can be at risk for moral injury and stress during pandemic times. The role of speech-language pathology leaders is to mitigate this risk by identifying potential sources of ethical concerns within their teams, preparing teams for anticipated moral dilemmas (Greenberg et al., 2020), and ensuring policies and processes are in place to reduce a sense of isolation for individual clinicians in their decision making. Types of ethical concerns for speech-language pathology teams may broadly be grouped into challenges in balancing risk to the clinician with the wish to provide the best care possible and the desire to provide high quality care when resources or policies inhibit providing the best care possible.

Guidance from professional bodies is to minimize exposure to reduce risk of transmission by deferring less urgent visits (i.e., Alberta College of Speech-Language Pathologists and Audiologists, 2020; College of Audiologists and Speech-Language Pathologists of Manitoba, 2020; College of Audiologists & Speech-Language Pathologists of Newfoundland and Labrador, 2020; College of Audiologists and Speech-Language Pathologists of Ontario, 2020; College of Speech and Hearing Health Professionals of British Columbia, 2020; Nova Scotia College of Audiologists and Speech-Language Pathologists, 2020; Ordre des orthophonistes et audiologistes du Québec, 2020; Saskatchewan Association of Speech-Language Pathologists and Audiologists, 2020). This can cause anxiety for hospital-based S-LPs if individuals are forced to decide on who should/should not receive care for concerns such as upgrading diet textures or high-level communication concerns. Fears of risk to the clinician can also be amplified by inconsistency in messaging regarding PPE use between different institutions and agencies, as well as shortages in PPE. Balancing personal risk with wanting to give the best care possible can also manifest as ethical concerns or moral distress when staff are redeployed to work outside their usual scope of practice. Greenberg et al. (2020) reported that staff may feel they are putting patients or coworkers at risk because of their own inexperience or indecision. Strategies to support redeployed team members must also acknowledge the ethical and psychosocial concerns that may arise for these individual clinicians, as is mentioned in the Staff section to follow.

A clear area of distress for healthcare providers across professions is the desire to give the best care possible

Table 1		
Projected and Approximate Number of Patients With Coronavirus Disease Requiring Hospital Resources in Canada		
	April–May approximate daily admissions peak	**January 2021 projection**
Total hospitalizations	3000	15516.83 [9476.94, 23523.8]
Total intensive care unit admissions	500	3728.53 [2239.47, 5688.24]

Note. Data for approximate cases of Coronavirus Disease in first wave from the Public Health Agency of Canada (2020), projections data for January 2021 from the Institute for Health Metrics and Evaluation (2020). Values in square brackets indicate the 95% confidence interval for each projection. Data retrieved November 25, 2020.

when resources are limited during pandemic times. Within the speech-language pathology scope, some of these decisions that teams may wish to discuss before concerns arise include who should/should not access instrumental assessment and how to prioritize patients within caseloads. Additionally, staff should be supported if the plan of care reflects a shortage in equipment or resources. For example, clinicians may be unable to conduct instrumental assessments due to increased processing time for endoscopes or reduced access to videofluoroscopy assessment suites for individuals with suspected/confirmed COVID-19, resulting in situations where staff feel unable to provide the best care possible and need to rely on clinical assessments alone. Similarly, clinicians may benefit from additional support in situations where equipment or medication shortages are the reason for non-delivery of an intervention. This example is analogous to the work of Greenberg et al. (2020), in which they describe the scenario as being made to decide which of two equally sick patients receives a specific intervention, knowing that one is not expected to survive, due to shortages of equipment. In these cases, team members need to be supported in how to approach their clinical decision-making as the focus of care shifts from curative to more solely comfort based.

The shift from person-centred care to community-based care may also raise ethical concerns for clinicians, given that the person-centred approach is embraced by many clinicians and institutions when considering the continuum of body function and structure, activity, and participation in the context of personal and environmental factors (World Health Organization, 2002). On a local level in many jurisdictions, the COVID-19 pandemic has created restrictions to visits from family caregivers with the aim of limiting transmission of COVID-19. This could create ethical concerns or moral distress for staff who see psychosocial impacts of visitor restrictions on their patients. Also, this may potentially impact the sense of giving the best care possible due to an inability to conduct face-to-face education and teaching regarding swallowing or communication disorders. This is especially the case within vulnerable populations such as those approaching end-of-life, individuals with cognitive impairment, individuals who experience communication barriers, patients experiencing serious or critical illness, and individuals with mental health concerns.

Across the variety of ethical concerns that may arise during pandemic times, staff need to be supported to voice and discuss issues that may cause moral distress. As such, recommendations on how to support staff are discussed in the forthcoming Staff section.

Scope

This discussion aims to address gaps in the speech-language pathology literature base related to pandemic planning in the healthcare sector and to act as a model for the use of a quality improvement mindset to guide emergency plans. The aim of this article is to also provide preliminary recommendations for speech-language pathology teams planning for future waves of COVID-19 or other surges in care related to infectious diseases by providing systems-level recommendations to augment the works of Namasivayam-MacDonald and Riquelme (2020), Kho et al. (2020), and Fritz et al. (2020) by incorporating factors from the complex environments in which hospital-based S-LPs work.

Method

The author for this article is a practice leader for speech-language pathology and clinician with experience in long-term care, rehabilitation and complex continuing care, training in quality improvement/patient safety, and a background in practice-based research. The Stuff, Staff, Space, and Systems framework used for this article is based on the work of Christian et al. (2008) and later modified by Arya et al. (2020) for application in COVID-19. Downar and Seccareccia (2010) employed this framework to systematically describe recommendations for pandemic planning for intensive care and palliative care. The Stuff, Staff, Space, and Systems framework also aligns with quality improvement as it provides a brainstorming guide to identify potential systems-level contributors to a quality problem—in this case, challenges related to a global pandemic.

This is similar to the use of cause-and-effect diagrams, otherwise known as fishbone or Ishikawa diagrams, which is an essential quality improvement tool used to examine areas that may contribute to a quality problem in order to identify potential areas for improvement (Harel et al., 2016; Institute for Healthcare Improvement, 2017). Although cause-and-effect diagrams are a mainstay in quality improvement processes, this specific framework was not selected for this article given its main aim of identifying contributors to a specific existing problem to generate hypotheses for solutions, rather than identifying possible future areas requiring review as needed for pandemic planning. An exhaustive search of the literature was not completed to identify a specific framework given the aim of this article—modelling quality improvement and systems thinking. Moreover, given the dearth of literature on the topic in speech-language pathology and the arrival of the second wave of COVID-19 cases in Canada, there is an urgent need to expedite pandemic guidelines.

Recommendations and items for review within the framework were initially drafted in detail in March 2020 by the author based on (a) collaboration with a clinical S-LP with experience in acute care, intensive care, and long-term care, (b) observations from clinical experiences during the first wave of COVID-19 cases in Canada, and (c) institutional practices regarding COVID-19 planning. Draft recommendations were shared with four clinical S-LPs on March 24, 2020. These individuals represent a range of experience across hospital-based settings, including acute care, intensive care, rehabilitation, and long-term care, and were identified through the author's professional network. Written comments were collected until saturation (i.e., when no additional items were identified) in June 2020. The aim of this process was to identify key areas for consideration with clinical examples to elucidate points, rather than generate an exhaustive list of all possible details, pieces of equipment, etc.

Comments were integrated into revisions by the author and detailed review of the article in its entirety was conducted by a clinical S-LP, a mental health clinician/researcher, and a master's of public health candidate with clinical experience in occupational therapy and long-term care. The author identified non-S-LP participants from her professional network and engaged them to obtain perspectives from an interprofessional lens given the mental health and public health issues identified through the initial brainstorming process. Revisions and review were conducted to ensure accurate representation of comments and feedback and concluded July 25, 2020.

The goal of this process was to quickly identify recommendations for pandemic planning. However, the timeliness of the processes for gathering clinician input and document review were modulated by clinicians' primary responsibilities, including clinical caseloads and academic priorities. Research ethics review was not required because the study met criteria for exemption for such a review based on institutional process for confirming that the project was deemed improvement in quality and not human subject research.

Understanding the Problem: A Systematic Approach

S-LPs work in systems with complex processes, complex relationships, and variable physical environments. This inter-reliance between the S-LP and hospital systems necessitates consideration of the larger healthcare environment when pandemic planning. As with understanding a patient's swallowing or communication disorder, understanding the system in which a speech-language pathology service works may be more thoroughly and efficiently tackled through a well thought out assessment. Similar to a clinical assessment, a systems assessment requires a plan and a framework to proactively assess potential problems before they arise and to help to plan for future events. In the case of COVID-19, this means taking a systems view of the speech-language pathology service with the dual lens of infection transmission and patient surges as potential challenges. This article is not intended to be all-inclusive nor to tackle all potential issues related to pandemic planning for S-LPs. Instead, this article acts as a guide on how to apply systems-thinking related to surge and pandemic planning by focusing on common issues that may be generalized to multiple speech-language pathology teams, acknowledging that individual teams must identify how their issues diverge from others and why (Mohta & Sampathkumar, 2020).

Given the lack of speech-language pathology-specific publications on frameworks to guide pandemic planning, this analysis is conducted using the Stuff, Staff, Space, and Systems framework of Downar and Seccareccia (2010), based on Christian et al. (2008) and modified by Arya et al. (2020). Main recommendations and items that require consideration when pandemic planning for speech-language pathology services are highlighted in **Table 2**.

Stuff

The Stuff of a clinical S-LP service during a pandemic requires consideration for what is involved in direct patient care, what is necessary for direct patient care, how materials and supplies are maintained and cleaned, and how materials and supplies are sourced. Individual clinical interactions are best conducted with the use of single patient use/disposable items where possible, and with cleaning of all equipment that is shared between patients (Speech Pathology Australia, 2020). When planning for a service, this must be extended to consideration of what the process is for obtaining and cleaning equipment. It is also appropriate to determine what resources may be in short supply or difficult to obtain for the purpose of ordering/stockpiling adequate amounts of these resources (Sprung et al., 2010). The following process is proposed for identifying equipment and material needs during a pandemic:

1. Identify all necessary equipment and all equipment components required for the service. Examples include computers used for instrumental assessments, equipment used for food stimuli preparation, and food stimuli. This list should include equipment that has historically been necessary as well as equipment that is newly needed due to pandemic/surge circumstances (e.g., specific PPE).

2. Determine which scenarios require shared equipment

and situations in which single-use items can be substituted; for example, low- versus high-tech augmentative and alternative communication tools.

3. Determine supply of items—existing stock versus needed stock—and consider which items require replenishing or new ordering and which items may require stockpiling due to changes in supply or delivery.

4. Ensure role clarity by identifying the individuals responsible for ordering/monitoring/maintaining items

to ensure an adequate supply is maintained as much as possible.

5. Review processes for on-going ordering/monitoring/ maintaining single-use supplies and shared equipment.

6. Identify how these processes may differ from routine practice during pandemic times, for example, how changes in delivery models or supply may impact food stimuli availability/procurement or possible enhanced cleaning needs.

Table 2

Recommendations and Considerations for Speech-Language Pathology Service Pandemic Planning

Stuff	Staff	Space	Systems
Suggestions			
• Determine procedures requiring single-use versus shared materials • Identify "stuff" that may be impacted by changes in delivery/availability • Determine supplies that may need to be stockpiled; both new and existing materials/equipment • Review processes for ordering single-use supplies • Review processes for maintaining shared equipment • Routinely review guidelines on personal protective equipment with infection prevention and control colleagues	• Review roster of available team members • Limit cross coverage between affected and unaffected areas • Advocate for additional staffing when extra spaces are created to accommodate anticipated occupancy surges • Review technical skills of team members • Encourage staff to seek help and rely on other team members • Support staff learning needs • Advocate for supports for personal challenges of team members • Create forums for staff to reflect and share experiences • Communicate proactively to help staff sort large amounts of information, and to ensure trust and transparency • Advocate for transparent and routine communication from institutional and systems-level leadership	• Consult with other departments on use of shared spaces • Review cleaning practices for spaces • Allow for extra time between uses to allow for adequate cleaning and falling/ventilation of droplets. • Review transportation practices for patients • Conduct assessments/interventions at bedside when able • Promote physical distancing within spaces • Schedule use of spaces to ensure limits to transmission • Consider use of unorthodox spaces • Consider universal masking in shared spaces	• Defer/reschedule non-essential/emergent visits • Transition to virtual care where able • Determine high risk procedures • Review screening and triaging practices • Review management practices for situations where access to testing/instrumental assessment is limited • Collaborate with other members of the interprofessional team to meet higher than usual needs • Discuss role blurring and role clarity with interprofessional team members when areas of practice overlap

Table 2 (Continued)			
Recommendations and Considerations for Speech-Language Pathology Service Pandemic Planning			
Stuff	**Staff**	**Space**	**Systems**
Items for Consideration			
Assessment equipment and materials (clinical and instrumental) Therapy materials and supplies • Communication tools/materials • Food • Thickening agent Personal Protective Equipment	Staffing model • Models of care and cross coverage • Redeployment • Staffing shortages • Relief staff Technical skills/expertise of staff • Intensive care • Palliative care • Counselling/goals of care • Technical support for staff working outside their usual roles Mental health and moral distress • Personal challenges • Medico-legal • Mental health/moral injury • Intra-team communication and roles	Clinical • Therapy rooms • Instrumental assessment suites Non-clinical • Storage space • Administrative space	Within-service care practices • Trigger symptoms • Risks to providers • Patient flow • Communication with substitute decision makers Collaborations with other professionals • Daily care needs (e.g., feeding) • Availability of items for assessments and management (e.g., foods, modified diet textures) • Team meetings

It is important to consider not just the Stuff directly used by S-LPs, but also the items that may be used for therapeutic purposes that an S-LP recommends; for example, thickening agent or how possible changes in patient food delivery models may impact items available on texture-modified diets.

Ongoing dialogue with local infection prevention and control colleagues is recommended given the constantly evolving nature of infectious diseases during pandemics, particularly in the case of novel infectious agents such as COVID-19. In the case of COVID-19, dialogue around speech-language pathology procedures that are considered aerosol-generating is particularly vital (American Speech-Language-Hearing Association, 2020; Dysphagia Research Society, 2020; Fritz et al., 2020; Kho et al., 2020; Miles et al., 2020; Namasivayam-MacDonald & Riquelme, 2020;

Royal College of Speech and Language Therapists, 2020). Similarly, routine and transparent review of PPE practices in collaboration with infection prevention and control professionals around PPE use may be appropriate for the most up-to-date evidence on transmission risks. The role of the speech-language pathology service in the case of preparation for PPE use is being aware of potential issues of availability; knowing where PPE can be obtained; knowing how to appropriately select, wear, and remove PPE; identifying any service education needs related to appropriate use or point-of-care risk assessments (Interorganizational Group for Speech-Language Pathology and Audiology, 2010); advocating for adequate access to PPE; and considering the impact of PPE use on clinical interactions—assessments, conversations, therapeutic relationships, and counselling.

Staff

Preparation regarding speech-language pathology staffing in a pandemic aims to ensure safety of the workforce, maximize the human resource capacity of the workforce, and maintain quality patient care for both pandemic-related cases as well as usual disease processes that result in hospitalization.

Staffing Models

Usual S-LP clinical coverage models, communication practices between speech-language pathology services and leadership or management with regards to staffing, and reporting structures may impede or facilitate staffing solutions (e.g., in the case of department versus program versus hybrid management organizations). Cohorting of patients and staff, and dedicated teams may be beneficial in limiting transmission for infectious organisms (Liu, 2020; National Health Service England, 2020; Ontario Agency for Health Protection and Promotion [Public Health Ontario], Provincial Infectious Diseases Advisory Committee, 2020; Siegel et al., 2007), and as such, it is prudent for speech-language pathology teams to limit cross coverage and avoid unnecessary travel between affected and non-affected areas to reduce transmission and exposure risk to staff. However, this must also be weighed against limitations due to staffing numbers and the need for relief staff to alleviate pressures related to worker fatigue and staff reductions (e.g., illness). To this end, an inventory of all speech-language pathology staff members as well as their specific skill sets is appropriate, particularly given the impact of absenteeism, illness, and closure of childcare facilities (Sprung et al., 2010). The creation of extra spaces to accommodate anticipated occupancy surges may also necessitate advocacy for additional staffing.

Technical Skill Set

Team members' levels of expertise in different areas are important when considering staffing/coverage models and redeployment. It is prudent to acknowledge that there may be staff members who are required to work outside their usual area of expertise and that these staff members need to be provided with clinical support or supervision (Sprung et al., 2010). One obvious area of expertise is the care of patients requiring critical or intensive care. The acuity and complexity of medical care needs paired with the pace at which medical needs evolve in this patient group requires specific knowledge. It has also been suggested that a "core group" with this skillset or a group more specifically trained in high-consequence infectious diseases may be beneficial for not only clinical care, but also acting as champions for others within the service (Mohta & Sampathkumar, 2020).

Pandemic surge circumstances raise the possibility of needs outpacing resources, resulting in individuals not being able to receive life-prolonging treatments who would require palliative care (Arya et al., 2020; Downar & Seccareccia, 2010). There is also recognition that there is a high degree of mortality with COVID-19, and given the crucial role S-LPs play in palliative care (Kelly et al., 2016; Pollens, 2004; Speech-Language & Audiology Canada, 2016), it is expected that this skillset will similarly be essential for the care of individuals with COVID-19 (Irish Association of Speech & Language Therapists, 2020). It should also be noted that invasive life-prolonging treatments may not be consistent with the goals of care for an individual and that palliative care approaches for symptom management can be concurrent with life-prolonging therapies (World Health Organization, n.d.). Just as there needs to be a plan for ICU-level expertise within the speech-language pathology team, there also needs to be acknowledgment that the human resource capacity for those with palliative care expertise may be taxed by pandemic surge situations (Ontario Palliative Care Network, 2020; Radbruch et al., 2020). This necessitates training and support to all providers to build palliative care capacity and provide compassionate care, dignity, and to reduce social isolation and caregiver distress (Ontario Palliative Care Network, 2020; Radbruch et al., 2020). Regardless of whether a given patient receives a more life-prolonging versus palliative approach to care, a review of staff members' comfort and skills in counselling patients and substitute decision-makers during stressful times and ability to discuss goals of care with teams and/or patients and substitute decision-makers (e.g., related to dysphagia) is certainly appropriate.

Mental Health and Moral Distress

When considering issues that impact workforce capacity and workforce safety, it is imperative to consider both physical and psychological safety for team members. Both surge and pandemic circumstances certainly raise the possibility of anxiety amongst team members. In the case of COVID-19, Lai et al. (2020) reported a high level of mental health concerns amongst healthcare workers in affected institutions, including a high degree of reported symptoms of depression (50.4% of those surveyed), anxiety (44.6%), insomnia (34.0%), and distress (71.5%). It is suggested that healthcare providers be offered support, such as peer counselling, and routine contact with social support networks (Radbruch et al., 2020). Radbruch et al. (2020) suggested that self-monitoring and pacing of duties/responsibilities, and reliance on teams should be facilitated given the potential for a higher than normal level of exposure to dying, death, suffering and breathlessness, and social isolation.

Shanafelt et al. (2020) interviewed hospital staff on their concerns related to COVID-19 and found eight main sources of anxiety: (a) access to appropriate personal protective equipment, (b) the potential for exposure to COVID-19 and infecting family at home, (c) rapid access to testing following COVID-19 symptoms and possible workplace transmission, (d) uncertainty related to organizational support for personal and family needs during the pandemic, (e) childcare challenges related to care facility closures and working hours, (f) practical personal needs given working hours (e.g., food, housing, transportation), (g) ability to work competently if redeployed into a new area of work, and (h) lack of timely information and communication. This situation is similar to areas of distress related to the severe acute respiratory syndrome detailed by Maunder et al. (2008), which include distress related to quarantine, the need to provide care or treatment to affected colleagues, infection, family health, job stress, interpersonal isolation, and perceived stigma. Shanafelt et al. (2020) distilled their eight main concerns into five types of requests from staff: hear me, protect me, prepare me, support me, and care for me. This is further evidence that a systematic approach to surge and pandemic planning may help to alleviate some sources of anxiety and stress for workers—namely those related to preparation and protection via workplace procedures related to testing and PPE. The work of Shanafelt et al. (2020) also highlights the importance of organizational support for non-work challenges related to childcare, obtaining essential products like groceries or medications, or housing.

Staff may also feel the need for organizational support to aid in protection from a legal perspective for those required to work outside their normal areas of expertise (Sprung et al., 2010). Isolation and stress related to workplace transmission/the need to treat coworkers also highlight the importance of a team approach to pandemic planning to ensure that all voices are heard and that team members feel that communication is open and timely. Shanafelt et al. (2020) recognize that trust and open communication need to happen multi-directionally rather than solely top-down, and remind leaders that healthcare workers often may not ask for help, and thus should be encouraged to seek help and rely on team members when needed. This is particularly true for individuals redeployed to new areas of work. Mohta and Sampathkumar (2020) similarly advocated for trust and transparency amongst teams and advised that centralized communication within a service can be beneficial in helping team members to prioritize large amounts of incoming information. Trust and transparency are also paramount at an organizational level to ensure consistent messaging across interprofessional teams and programs, and to ensure that all members of an institution feel adequately informed and supported. There is opportunity here for all clinicians and leaders to advocate to organizational leadership teams for clear and frequent communication. Plans that allow for flexibility and contingency plans, including plans for succession or transfer of command may also help to build team resilience and foster a sense of trust and preparedness (Maunder et al., 2008; Schmidt, 2020).

It is important to note that stress and anxiety are distinct from moral injury, which is also likely to occur in the context of COVID-19 (Greenberg et al., 2020). Moral injury can be described as being knowledgeable of required care needs but being unable to meet these needs due to external controls, prompting providers to feel that they are in jeopardy of violating their moral or ethical code (Dean et al., 2019; Greenberg et al., 2020). Dean et al. (2019) further distinguished between moral injury and burnout by suggesting that burnout implies inadequate resilience on the level of an individual practitioner while moral injury is a challenge due to the structure and systems of the healthcare setting in which individuals work. As such, systems-level approaches may help to alleviate the potential of moral injury by better supporting and preparing members of a speech-language pathology service, as may some of the strategies outlined in the Systems section. Greenberg et al. (2020) posited that a forum for staff to safely discuss emotional and social challenges involved in caring for patients may be helpful, and that other structures, such as peer support programs, should be made available to raise awareness of moral injuries and barriers to mental health. They further suggest reflection to learn from challenging situations after crises have resolved to shift the narrative from one of trauma to one of meaning and learning.

Space

Space challenges during surge or pandemic times are related to infection control/transmission potential, availability of space, and efficient utilization of space. Some key considerations for spaces used by speech-language pathology services are:

- Who are the users of the space and who needs to be involved in consultations regarding the space?

- Are there nonstandard protocols that must be adhered to (e.g., enhanced cleaning, transportation practices, etc.)?

There must be diligent communication across departments as scenarios evolve to continually adapt processes and protocols. An example within the speech-language pathology scope is consultation with radiology

departments for videofluoroscopy use, including discussions on how to optimize space utilization for patients with and without COVID-19 infections. Across different types of clinical space, strategies to consider include:

- Conduct assessments/interventions virtually when able or at bedside rather than in shared spaces to reduce transportation across an institution (Sprung et al., 2010).

- Clean spaces between uses by different patients and plan for increased downtime between uses to allow for adequate cleaning and falling/ventilation of droplets.

- Allow for adequate physical distance between patients when they are using the same space (e.g., if group therapy continues for patients unaffected by COVID-19). Schedule patients with additional infection prevention and control precautions at the end of a block to allow for enhanced cleaning.

Spaces used for administrative purposes by S-LPs should also be discussed when planning for infectious pandemics. It is common for S-LPs to share office space. As such, consideration of the size of spaces for the purpose of adequate physical distance must be considered to maintain worker safety, to reduce the risk of transmission between workers, and to reduce the potential for multiple workers being unavailable for service due to exposures. Some strategies to consider include:

- Allow for extra space between workstations (e.g., leaving alternate workstations empty).

- Coordinate start times or schedules between staff to allow for sub-maximum capacity within office space.

- Explore with other hospital stakeholders the option of utilization of spaces that would not be in use during a pandemic (e.g., board rooms, auditoriums).

- Explore options for virtual work to allow for some elements of work to be done off-site.

- Review universal masking practices for staff in shared spaces.

Systems

Central to the speech-language pathology team's ability to adapt to surge and pandemic circumstances is the ability to adapt existing processes and evolve new ones to meet changes in service needs. Teams should consider both processes within the service as well as those requiring collaboration with other members of the interprofessional team.

Within-Service Care Practices

It is prudent for speech-language pathology teams to defer or reschedule non-essential/emergent visits or convert to virtual practice to limit risks related to face-to-face contact (Irish Association of Speech & Language Therapists, 2020; Royal College of Speech and Language Therapists, 2020; Sprung et al., 2010). Risk factors for non-delivery of service would need to include considerations for screening and triaging, with careful thought towards medical history and collaboration with interprofessional colleagues (Fritz et al., 2020; Speech Pathology Australia, 2020). Review of screening and triaging practices for visits that are deemed to be urgent or essential would assist team members by providing guidelines that are objective, ethical, transparent, and equitable, particularly when care resources are overcome by care needs (Sprung et al., 2010). The same screening and triaging strategies to reduce transmission risks and protect staff may help clinicians decide how resources are utilized amongst patients. It is important to note that while some speech-language pathology guideline documents interchange the use of screening and triaging, this discussion will refer to screening as the collection and review of information about an individual patient for the purpose of determining appropriateness for assessment, while triaging will refer to reviewing patients across a caseload for the purpose of prioritization. It may be beneficial to gradually alter triage criteria to transition from surge or pandemic phase triaging to routine prioritization (Sprung et al., 2010). This may be challenging given the unknown course of novel diseases, such as COVID-19, and thus may require routine review to maximize the right number of patients receiving the right care at the right time.

Process mapping is a useful strategy in healthcare quality improvement projects (Antonacci et al., 2018; National Health Service Institute for Innovation and Improvement, 2005). Teams may wish to use process mapping strategies to review the steps in screening/triaging processes to identify key factors influencing clinical decisions. Within the face-to-face visits that are deemed urgent or essential, teams should a priori determine which procedures they deem to be high risk and ensure that there is adequate training and access to equipment for these procedures (Fritz et al., 2020; Speech Pathology Australia, 2020; Sprung et al., 2010). Factors to consider when creating or adapting speech-language pathology service screening and triaging plans include:

- Readiness for assessment (e.g., level of alertness, respiratory status).

- Risk to patient if assessment or intervention is not done, including current risks and future risk of deterioration

or negative sequelae. It should also be noted that risk includes psychosocial risk by way of impact on quality of life. Teams may wish to consider the use of trigger symptoms that would prompt definitive and clear face-to-face assessments (Schmidt, 2020). Examples of trigger symptoms within the speech-language pathology scope of practice might include signs and symptoms of aspiration or sequelae of aspiration, or an inability to communicate needs and wants.

- Risk to provider with respect to transmission and how these risks might change over time. For example, if there is higher risk related to aerosol-generating procedures, such as high flow oxygen and the team plans to step this down over the next 24 hours, weighing the risk of delaying a swallowing intervention for that 24 hour period.

- Impact of and impact on patient flow between ward and ICU, transfer to other facilities or discharge home. In particular, assessments or interventions that may expedite discharge from hospital or ICU or outpatient visits that may prevent admission should have high priority (Royal College of Speech and Language Therapists, 2020). It should also be noted that COVID status may influence ability to discharge to external facilities, and thus may impact caseload (Grabowski & Joynt Maddox, 2020; Ontario Agency for Health Protection and Promotion [Public Health Ontario], Provincial Infectious Diseases Advisory Committee, 2020).

- How the sequence of patients seen or how caseloads are divided may impact risk of transmission and PPE conservation (e.g., "batching" those with COVID positive status).

- Likelihood of a change in swallow or communication status given progression of medical status in the case of re-referrals.

- Impact of consultation on decision-making if findings may influence goals of care discussions.

Factors that apply to the caseload should be reviewed routinely given the likelihood of quickly evolving medical status and can be applied across visit types (e.g., swallowing versus communication, clinical assessment versus instrumental assessment). Clear, objective, and transparent screening factors that are established before stressful situations occur can potentially alleviate distress related to perceived lack of preparation (Shanafelt et al., 2020; Sprung et al., 2010). In addition to reducing risk of exposure,

screening guidelines may help individual clinicians feel that their screening/triaging decisions are supported by well-thought-out team discussions and may reduce the sense of urgency by reducing decision making at the times of stress.

The ability to perform instrumental assessments that would usually be clinically indicated may also change under pandemic circumstances. In the case of dysphagia, instrumental assessments may be limited or unavailable due to reprocessing of endoscopes or institutional practices limiting transportation within the facility or limiting access to assessment suites for persons with suspected/confirmed COVID-19 infections. In these situations, it is prudent for speech-language pathology teams to consider how they might alter their management plans when instrumental assessments are unavailable. It is possible that this may result in unnecessarily conservative therapeutic recommendations. Teams should consider how recommendations may change for both in-hospital management plans and how clinicians advocate for follow-up services upon discharge from the hospital.

Pandemic-related precautions and local surges of cases may also impact patient flow and care capacity within organizations and to discharge destinations. This may actualize as delays to discharge from ICUs or from hospital due to lack of appropriate care spaces, and as such, speech-language pathology teams should consider how caseload management may need to be adjusted to accommodate localized fluxes in patient numbers. In the case of discharge destinations, it is also notable that community-based care for patients discharged home or to residential settings may be provided by external S-LPs (e.g., private practitioners, agencies). This may create gaps in care when speech-language pathology agencies temporarily close due to an inability to transition to virtual care and when there are restrictions to visiting for purposes that institutions deem "non-essential." In these situations, it is possible that hospital-based speech-language pathology services may need to liaise with local area community care coordinators regarding availability of services and may also need to consider these gaps in care when discharge planning.

Speech-language pathology teams should also be aware of how practices for communicating with decision-makers may change, particularly in light of potential restrictions to visitors (Ontario Agency for Health Protection and Promotion [Public Health Ontario], Provincial Infectious Diseases Advisory Committee, 2020). This might include changes in practice for discussions of goals of care, diet education, communication strategies and partner training, and feeding strategy education.

Collaborations With Other Professionals

Given the complexity of hospital environments, it is also prudent for speech-language pathology teams to consider interactions within larger interprofessional teams when planning for surges and pandemics. Central issues in interprofessional team functioning which impact S-LPs are those of *capacity* and *role clarity* (Sims et al., 2015; Suter et al., 2009). Different than usual capacity can impact the team at large via increased patient load or reduction in care being given by visitors when restrictions are placed to reduce transmission risks. For speech-language pathology services, this may impact how teams monitor and screen patients and influences daily care needs such as feeding. Capacity can also be different during surge or pandemic situations when supply chains are impacted. For example, speech-language pathology teams may need to work with food service providers to review how changes in food delivery practices may influence the ability to acquire test trays or items for swallowing assessments, but also how there may be changes in availability of items for patients receiving modified diet textures. Teams may thus need to devise new models of working to ensure that these changes do not negatively impact the quality of care.

Discussions of role clarity are important for interprofessional teams to consider how to effectively and efficiently deliver care, particularly when surges create scenarios where needs outpace resources and when transmission risks during pandemics may necessitate fewer face-to-face visits from members of the interprofessional team. One example is discussions with dietitian colleagues to determine how best to collaborate on diet education to patients to minimize exposure to team members. Similarly, interprofessional teams may also collaborate on how they may adapt practices related to team rounds or family meetings and may consider virtual means of these gatherings.

"Much like an individual person has little immunity to SARS-Co-V, the modern healthcare system has never 'experienced' a disruption like this before. Not even SARS, MERS, Ebola, H1N1" (Tseng, 2020b). When anxiety can result from novel, unknown circumstances, a systematic approach to speech-language pathology service preparation may alleviate stressors by promoting trust, transparency, and open communication. Despite the best of preparations, inexperience with novel situations certainly continues to raise the potential for anxiety and moral injury.

Conclusion

Pandemics and surges create situations that are challenging to individual clinicians, but also to broader teams and services, especially when dealing with previously unknown diseases. Novel situations, such as the one created by COVID-19, prompt clinicians and services to share experiences and to foster a culture of learning. This is particularly the case within speech-language pathology, as the dearth of literature on quality improvement and systems thinking relative to other professions forces a broader look to other disciplines to guide planning and modification of policies/practices for crisis management. In addition to providing guidance to speech-language pathology leaders and teams, this article acts as a call to both clinicians and researchers to collaborate to bridge the gap in quality improvement thinking within the field. In situations of pandemics or surges, speech-language pathology leaders and teams are urged to protect the workforce in their physical health but also mental health through transparent communication and systematic planning.

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