

# Critical care – influencing and campaigning

## Introduction

Here you will find information and resources to:

- Influence your local decision makers and budget holders.
- Raise awareness of the role of speech and language therapy in critical care.

There are also resources to support you to:

- Demonstrate the value of your service.
- Develop your leadership skills.

Please note: the resources in this section are provided for informational purposes only. No endorsement is expressed or implied unless otherwise indicated, and while we make every effort to ensure this page is up to date and relevant, we cannot take responsibility for resources maintained by external providers.

Please **contact us** if you have any suggestions or feedback on these pages.

# Influencing stakeholders

In these pages you will find information, resources and the [\*\*RCSLT Position statement: Speech and language therapists working in adult and paediatric critical care units \(PDF\)\*\*](#). These will help you influence your local decision makers and budget holders, and include sections on:

- Benefits of providing a speech and language therapy service
- Risks of not providing a speech and language therapy service
- Staffing and skill mix
- Statistics
- **National policy**
- Recommended knowledge and skills for speech and language therapists:
  - [\*\*RCSLT Tracheostomy competency framework \(PDF\)\*\*](#) – download the [\*\*Word version\*\*](#).
  - The Faculty of Intensive Care Medicine:
    - Guidance on MCA and DoLS
    - Standards, research, safety and quality in intensive care

Visit the RCSLT's [\*\*local influencing\*\*](#) pages to find more general information and resources that will help you demonstrate to your local stakeholders how you:

- Deliver their objectives
- Improve outcomes for them
- Improve outcomes for people who benefit from speech and language therapy

You can also find more general information to you influence local decision makers on the RCSLT website:

- Leadership resources
- How to measure outcomes
- Evidence based practice

## Campaigning to Raise Awareness

Raising awareness of speech and language therapy is as important as ongoing commitment alongside service development.

RCSLT's [\*\*Giving Voice pages\*\*](#) provide tips for demonstrating how speech and language therapy makes a difference to individuals and the broader society across the UK.

RCSLT guidance on [\*\*raising awareness\*\*](#) explores how SLTs can raise awareness of their profession.

[\*\*Social media\*\*](#) also offers wider opportunities for raising awareness, learning and discussion.

## Social Media

**Social media** offers wider opportunities for raising awareness, learning and discussion. Popular forms of social media include:

- Facebook sites
- Twitter handles
- LinkedIn groups

These are a few suggestions for group Twitter handles related to critical care (this list is not exhaustive):

- UK group of SLTs working in critical care: [@CriticalCareSLT](#)
- RCSLT Tracheostomy Clinical Excellence Network: [@RCSLTTracheCEN](#)
- Intensive Care Society, UK: [@ICS\\_updates](#)
- Paediatric Intensive Care Society: [@PICSociety](#)
- British Association of Critical Care Nurses: [@BACCNUK](#)
- International Tracheostomy Collaborative: [@ITC\\_Trachy](#)
- National Tracheostomy Collaborative (UK): [@NTSP\\_UK](#)
- The Association of Chartered Physiotherapists in Respiratory Care: [@TheACPRC](#)
- Specialist subsection of the Royal College of Occupational Therapists supporting OTs working in Critical Care: [@CriticalCareOT](#)
- Critical Care Specialist Group (CCSG) of the British Dietetic Association: [@BDACriticalCare](#)
- The Pediatric Neurocritical Care Research Group: [@PNCRGtweets](#)
- interviews with > 120 survivors of ICU: [@criticalcarerecover](#)
- The Paediatric Early Rehabilitation / Mobilisation during Intensive Care feasibility study: [@PermitStudy](#)
- European Society of Intensive Care Medicine: [@ESICM](#)
- European society of paediatric and neonatal intensive care professionals: [@ESPNIC\\_Society](#)
- Critical care reviews project: [@CritCareReviews](#)
- Critical Care Journal: [@Crit\\_Care](#)
- Paediatric Critical Care Medicine Journal: [@PedCritCareMed](#)

# Benefits of providing a speech and language therapy service

There is increasing evidence to demonstrate the impact of speech and language therapy involvement to influence local budget holders, decision makers and other stakeholders.

Listed below are some of the benefits of providing a speech and language therapy service, within a range of impairments specific to critical care patients:

## Secretion management

- Patients with dysphagia are at risk of either dry mouth, or unable to manage their saliva. SLTs can provide advice and support to manage these conditions through mouth care advice, behavioural strategies or recommendations for pharmacological management. Patients may benefit from oral desensitisation or a Facial Oral Tract Therapy approach to improve these impairments (Hansen & Jakobsen, 2010; McRae, 2011; Prendergast, Kleiman, & King, 2013).
- For children, speech and language therapy intervention may limit the degree of oral aversive behaviours/Avoidance Restrictive Food Intake Disorder (ARFID) and tube dependence (Sharp et al., 2017) and aim to facilitate normal feeding development where possible to the child's potential.

## Facilitate weaning

- SLTs can contribute to successful ventilator and tracheostomy weaning programmes alongside multi-professional colleagues such as physiotherapists. This enhances effective secretion management and airway evaluation using FEEs. This improves options for communication and swallowing (Bonvento, Wallace, Lynch, Coe, & McGrath, 2017; Sutt et al., 2016; Frank, Maeder, & Sticher, 2007; Hales, Drinnan, & Wilson, 2008; McGowan, Gleeson, Smith, Hirsch, & Shulldham, 2007).

## Communication options

- Specialist and/or individualised management of voice and speech and language difficulties. This aims to maximise communication ability and may include the use of speaking valves and Above Cuff Vocalisation (ACV) (McGrath et al., 2018; Sutt et al., 2016; Freeman-Sanderson A, et al., 2016);
- Providing advice and strategies to family members and MDT staff to facilitate communication between staff and patient (Mobasheri et al., 2016) including consideration of AAC options.

- Facilitate communication developmental to child's potential through verbal/non verbal means (**Costello et al, 2010**).
- Reducing delirium and psychological impact through enabling communication and decision-making (**Traube et al., 2017**).
- Early identification of Prolonged Disorders of Consciousness (PDOC) versus locked-in syndrome (**RCP guidelines, 2015**).

## Swallowing function

- Evaluation of the causes contributing to dysphagia, utilising instrumental assessments to identify the area of breakdown and developing a specific intervention to rehabilitate swallowing, aiming for safe oral intake (Logemann, 1997; Langmore, 2000).
- Reducing the risk of complications of dysphagia, such as aspiration pneumonia, dehydration, malnutrition and disuse atrophy. This may require the use of therapeutic behavioural strategies, alternative food textures or non-nutritive food trials. Considerations should be made for nutritional and medication needs, with decisions about alternative feeding to be made in discussion with the wider team. (UK National Tracheostomy Safety Project, 2013).
- There has been increased interest in the potential utilisation of neuromuscular and pharyngeal electrical stimulation for dysphagia rehabilitation and these may be utilised in the future. Currently usage is restricted following evaluation by NICE (National Institute for Health and Care Excellence, 2018; **Sproson, Pownall, Enderby, & Freeman, 2017**; Restivo and Hamdy, 2018; Marcus et al., 2019).

## Capacity Assessments

- Facilitate and support Mental Capacity Assessments and Best Interest Decisions (Jayes, Palmer, & Enderby, 2017). For children and young people (< 18 years) SLTs should facilitate communication to ensure inclusion in any decision-making process. (UN Convention on the Rights of the Child).

## MDT working

- Benefit of SLTs in MDT tracheostomy teams (Bonvento et al., 2017; Frank et al., 2007); raising awareness of the importance of laryngeal function for speech, swallowing and weaning (Hafner, Neuhuber, Hirtenfelder, Schmedler, & Eckel, 2008; Heidler, Bidu, Friedrich, & Voller, 2015; Rose, 2011).

## Improved outcomes and reduced complications

- Early speech and language therapy intervention can reduce time to wean or return to voice and have an impact on length of time in critical care or hospital (Freeman-Sanderson et al., 2016; Sutt et al., 2015; Cameron et al., 2009; Pryor et al., 2016).

# Risks of not providing a speech and language therapy service

There is increasing evidence to demonstrate the risks of not providing speech and language therapy involvement, to influence local budget holders, decision makers and other stakeholders.

Although not always apparent, risks are often linked to delayed interventions or increased complications. In the first instance, benefits should be highlighted and focused on for service development.

Listed below are some of the risks of not providing a speech and language therapy service, within impairments specific to critical care patients:

## Swallowing disorders (dysphagia)

- Delay in identification and management of dysphagia.
- Increased complications such as aspiration pneumonia, respiratory impairment and mortality.
- Increased length of stay for additional clinical management.
- Delay to commencing safe oral intake.
- Compromised psychosocial wellbeing for prolonged NBM periods.
- Compromised nutrition and hydration.
- Risk of readmission secondary to aspiration.
- Disuse atrophy.
- Weaning delay or failure.
- Post-extubation complications.

## Communication

- Frustration from loss of speech.
- Inability to communicate effectively or consent.
- Increased length of stay.
- Undiagnosed laryngeal injuries and concomitant voice disorders.
- Compromised psychosocial well-being.
- Speech/Language delay and disorder.
- Compromised social and pragmatic skills.



## Staffing and skill mix

SLT staffing and skill mix in critical care is an area of keen discussion, as achieving the right levels will have an impact on the delivery of care. In planning speech and language service development, the following information provides comprehensive support:

- A minimum staffing level of 0.1 wte SLTs per bed is recommended to deliver a service in critical care. This may increase depending on local patient complexity and service delivery. This should include both direct patient contact time, team discussions and strategic involvement. This is supported and stated in national guidance set out by the Intensive Care Society ([GPICS, 2019](#)) (p.56).
- SLTs should undertake training and supervised experience to gain the skills and competencies required to work in critical care.
- Speech and language therapy assistants (SLTAs) and junior SLTs can be supported to deliver therapy programmes for patients in critical care under [supervision](#) of an experienced SLT clinician.
- The AHP Critical Care Professional Development Framework ([CCPDF, 2018](#)) is designed to support professional and clinical skills development at post-registration, aligning with four pillars of practice:
  - 1. Clinical Practice
  - 2. Facilitation of Learning
  - 3. Leadership
  - 4. Research, Evidence and Improvement

It is recommended that SLTs utilise this framework alongside their AHPs colleagues, seeking support from senior clinicians and management.

- Speech and language therapy service configurations will be different depending on the local requirements and services must be involved in discussions about optimal staffing and levels of service provision, including five day or seven day services ([NHS England Service Specification, 2019](#)).
- Equity of services should be reviewed through bench-marking and national peer review process.
- Levels of knowledge, skills and safe practices must be maintained through CPD and local audit processes. It is the responsibility of the SLT with expertise in critical care to share knowledge and skills with other SLTs and healthcare colleagues within the service ([HCPC Standards of conduct, performance and ethics](#)).
- Examples of good practice and quality improvement must be promoted throughout local/regional uni-disciplinary and multi-professional networks for example, RCSLT networks,

Clinical Excellence Networks, Journal Clubs, Allied Health Professional (AHP) networks, critical care network meetings.

- It is recommended that SLTs collaborate with other disciplines working in the critical care environment, on training, development, audit and research. There should be local discussion and negotiation regarding multidisciplinary role boundaries and associated competencies, e.g. suctioning, initial cuff deflation assessment, provision of low tech augmentative and alternative communication and screening of communication/swallowing disorders.

## Statistics

This data can help you understand the critical care environment, changing trends and requirements for future service development and workforce training.

It also illustrates the importance of speech and language therapy in a critical care environment, and can therefore, be used to help influence local budget holders, decision makers and other stakeholders:

- In 2018, the Intensive Care Society reported 220,000 admissions across 328 units and 4,587 beds over a year compared to 2011 data reporting a provision of 3,747 critical care beds across 156 ICUs. As admissions are increasing every year (1996 – 85,000 admissions; 2000 – 120,000; 2009 – 201,000), so does the complexity of patients. (ICS, 2018)
- The increased use of healthcare technologies raises the expectation of survival and whilst overall mortality is falling the focus is on long term outcomes and survivorship. Literature now supports active rehabilitation in the intensive care environment in recognition of its long term benefits. This includes a focus on communication, eating and drinking. (GPICS, 2019)
- The NCEPOD report (2014) identified an increase in percutaneous over surgical tracheostomy insertions, and variable care of the cuffed tubes. They report that 52% of those with trachea had dysphagia and 57% had early referral to SLT. Only 27% critical care patients had input from SLT. Their key recommendations were:
  - Involvement of SLT in critical care units needs to be facilitated to provide high quality communication strategies particularly for more complex patients.
  - Swallowing difficulty in tracheostomy patients should be clearly recognised requiring referral to SLT.
  - Swallowing difficulty in tracheostomy patients should be the subject of ongoing study.
- NTSP reports that 10-15% of UK ICU patients will have a tracheostomy-this includes 14,000 adults and 1200 children with tracheostomies. Involvement of allied health professionals such as respiratory physiotherapy and speech and language therapy are seen as essential to support weaning, speech and swallowing (McGrath & Wallace, 2014).
- Post extubation dysphagia is thought to affect up to 60% of adult ICU patients with a reported 50% incidence of aspiration associated with increased length of stay, reintubation and mortality (**Macht** et al., 2012; **Kim** et al., 2015; **Brodsky** et al., 2016). A systematic review of nine studies reported an 83% incidence of laryngeal injury following orotracheal intubation, with half of patients experiencing dysphagia and one in five having vocal fold immobility (Brodsky et al., 2018). There is less literature on paediatrics but Kohr et al., (2003) noted that 18% of 50 children presented with dysphagia following open heart procedures whilst Yi et al., (2013) reported 24% in 35 infants undergoing similar procedures.

- The inability to speak and the associated communication difficulties that result from requiring intubation and ventilation are a major cause of distress and frustration for critical care patients ([Tembo et al., 2015](#); [Carroll et al., 2007](#)). Approximately half of ICU patients are thought to potentially benefit from SLT involvement to support communication and the use of alternative and augmentative aids ([Happ et al., 2015](#)). These can provide people with opportunities to engage in their care ([Mobasheri et al., 2016](#)).
- Delirium in ICU has a reported incidence of between 45% to 87% in adults and 17% in children and depending on the type, can be a prognostic indicator for mortality ([Cavallazzi, 2012](#); [Traube et al., 2017](#)). SLTs may be able to support non-pharmacological approaches directed at improving nutrition, hydration and interaction, which has a positive impact on outcomes, as well as enabling communication, for example with the use of one way valves.
- **Paediatric Intensive Care Audit Network Summary Report (2017)** Healthcare Quality Improvement Partnership reports over 20,000 admissions to PICU in UK & Ireland 2014-2016 (a small increase on 2013-2015):
  - 146 (in England) and 194 (in NI) admissions per 100,000 children
  - Number of bed days increased by over 4% from 2014 -> 2016.
  - Reduction in mortality by around 4%
  - 2% of children are discharged and then readmitted as an emergency within 48 hours of discharge (adverse event).

## References

- Brodsky, M. B., Huang, M., Shanholtz, C., Mendez-Tellez, P. A., Palmer, J. B., Colantuoni, E., & Needham, D. M. (2016). Recovery of Dysphagia Symptoms after Oral Endotracheal Intubation in ARDS Survivors: A 5- Year Longitudinal Study. *Ann Am Thorac Soc*. doi:10.1513/AnnalsATS.201606-455OC
- Brodsky, M. B., Levy, M. J., Jedlanek, E., Pandian, V., Blackford, B., Price, C., . . . Akst, L. M. (2018). Laryngeal Injury and Upper Airway Symptoms After Oral Endotracheal Intubation With Mechanical Ventilation During Critical Care: A Systematic Review. *Crit Care Med*, 46(12), 2010-2017. doi:10.1097/ccm.0000000000003368
- Cameron, T. S., McKinstry, A., Burt, S. K., Howard, M. E., Bellomo, R., Brown, D. J., . . . O'Donoghue, F. J. (2009). Outcomes of patients with spinal cord injury before and after introduction of an interdisciplinary tracheostomy team. *Crit Care Resusc*, 11(1), 14-19.
- Carroll, S. M. (2007). Silent, Slow Lifeworld: The Communication Experience of Nonvocal Ventilated Patients. *Qual Health Res*, 17(9), 1165-1177. doi:10.1177/1049732307307334
- Cavallazzi, R., Saad, M., & Marik, P. E. (2012). Delirium in the ICU: an overview. 2(1), 49. doi:10.1186/2110-5820-2-49
- Costello, J. M., Patak, L., & Pritchard, J. (2010). Communication vulnerable patients in the pediatric ICU: Enhancing care through augmentative and alternative communication. *Journal of Pediatric Rehabilitation Medicine*, 3(4), 289-301. doi:10.3233/prm-2010-0140
- Frank, U., Maeder, M., & Sticher, H. (2007). Dysphagic patients with tracheotomies: A multidisciplinary approach to treatment and decannulation management. *Dysphagia*, 22(1), 20-29. doi:10.1007/s00455-006-9036-5
- Freeman-Sanderson, A. L., Togher, L., Elkins, M. R., & Phipps, P. R. (2016). Return of Voice for Ventilated Tracheostomy Patients in ICU: A Randomized Controlled Trial of Early-Targeted Intervention. *Crit Care Med*, 44(6), 1075-1081. doi:10.1097/ccm.0000000000001610
- Hafner, G., Neuhuber, A., Hirtenfelder, S., Schmedler, B., & Eckel, H. E. (2008). Fiberoptic endoscopic evaluation of swallowing in intensive care unit patients. *Eur Arch Otorhinolaryngol*, 265(4), 441-446. doi:10.1007/s00405-007-0507-6
- Hales, P. A., Drinnan, M. J., & Wilson, J. A. (2008). The added value of fibreoptic endoscopic evaluation of swallowing in tracheostomy weaning. *Clinical Otolaryngology*, 33, 319-324.

Hansen, T. S., & Jakobsen, D. (2010). A decision-algorithm defining the rehabilitation approach: 'Facial oral tract therapy'. *Disabil Rehabil*, 32(17), 1447-1460. doi:10.3109/09638280903556482

Happ, M. B., Seaman, J. B., Nilsen, M. L., Sciulli, A., Tate, J. A., Saul, M., & Barnato, A. E. (2015). The number of mechanically ventilated ICU patients meeting communication criteria. *Heart & Lung*, 44(1), 45-49. doi:10.1016/j.hrtlng.2014.08.010

Heidler, M. D., Bidu, L., Friedrich, N., & Voller, H. (2015). Oral feeding of long-term ventilated patients with a tracheotomy tube. Underestimated danger of dysphagia. *Medizinische Klinik-Intensivmedizin Und Notfallmedizin*, 110(1), 55-60. doi:10.1007/s00063-014-0397-5

Jayes, M., Palmer, R., & Enderby, P. (2017). An exploration of mental capacity assessment within acute hospital and intermediate care settings in England: a focus group study. *Disability and Rehabilitation*, 39(21), 2148-2157. doi:10.1080/09638288.2016.1224275

Kim, M. J., Park, Y. H., Park, Y. S., & Song, Y. H. (2015). Associations between prolonged intubation and developing post-extubation dysphagia and aspiration pneumonia in non-neurologic critically ill patients. *Ann Rehabil Med*, 39. doi:10.5535/arm.2015.39.5.763

Kohr, L. M., Dargan, M., Hague, A., Nelson, S. P., Duffy, E., Backer, C. L., & Mavroudis, C. (2003). The incidence of dysphagia in pediatric patients after open heart procedures with transesophageal echocardiography. *Ann Thorac Surg*, 76(5), 1450-1456.

Macht, M., Wimbish, T., Clark, B. J., Benson, A. B., Burnham, E. L., Williams, A., & Moss, M. (2012). Diagnosis and treatment of post-extubation dysphagia: results from a national survey. *J Crit Care*, 27(6), 578-586. doi:10.1016/j.jcrc.2012.07.016

Marcus, S., Friedman, J., Lacombe-Duncan, A., & Mahant, S. (2019). Neuromuscular electrical stimulation for treatment of dysphagia in infants and young children with neurological impairment: a prospective pilot study. *BMJ Paediatrics Open*, 3, e000382. doi:10.1136/bmjpo-2018-000382

McGowan, S. L., Gleeson, M., Smith, M., Hirsch, N., & Shuldham, C. M. (2007). A pilot study of fiberoptic endoscopic evaluation of swallowing in patients with cuffed tracheostomies in neurological intensive care. *Neurocritical Care*, 6(2), 90-93. doi:10.1007/s12028-007-0024-x

McGrath, B., & Wallace, S. (2014). The UK National Tracheostomy Safety Project and the role of speech and language therapists. *Current Opinion in Otolaryngology & Head and Neck Surgery*, 22(3), 181-187.

McGrath, B. A., Wallace, S., Wilson, M., Nicholson, L., Felton, T., Bowyer, C., & Bentley, A. M. (2018). Safety and feasibility of above cuff vocalisation for ventilator-dependant patients with tracheostomies. *Journal of the Intensive Care Society*, 0(0), 1751143718767055.

doi:10.1177/1751143718767055

McRae, J. (2011). Dry mouth in spinal cord injury: causes and treatment. *Dental Nursing*, 7(8), 446-449.

Mobasheri, M. H., King, D., Judge, S., Arshad, F., Larsen, M., Safarfashandi, Z., . . . Darzi, A. (2016). Communication aid requirements of intensive care unit patients with transient speech loss. *Augment Altern Commun*, 32(4), 261-271. doi:10.1080/07434618.2016.1235610

National Institute for Health and Care Excellence. (2018). Interventional procedure overview of transcutaneous neuromuscular electrical stimulation for oropharyngeal dysphagia in adults. NICE.

Prendergast, V., Kleiman, C., & King, M. (2013). The Bedside Oral Exam and the Barrow Oral Care Protocol: translating evidence-based oral care into practice. *Intensive Crit Care Nurs*, 29(5), 282-290. doi:10.1016/j.iccn.2013.04.001

Pryor, L., Ward, E., Cornwell, P., O'Connor, S., & Chapman, M. (2016). Patterns of return to oral intake and decannulation post-tracheostomy across clinical populations in an acute inpatient setting. *Int J Lang Commun Disord*, 51(5), 556-567. doi:10.1111/1460-6984.12231

Restivo, D. A., & Hamdy, S. (2018). Pharyngeal electrical stimulation device for the treatment of neurogenic dysphagia: technology update. *Medical Devices: Evidence and Research*, Volume 11, 21-26. doi:10.2147/meder.s122287

Rose, L. (2011). Interprofessional collaboration in the ICU: how to define? *Nurs Crit Care*, 16(1), 5-10. doi:10.1111/j.1478-5153.2010.00398.x

Royal College of Physicians, British Society of Rehabilitation Medicine, Multidisciplinary Association of Spinal Cord Injury Professionals, British Association of Spinal Cord Injury Specialists, & Spinal Injuries Association. (2008). Chronic spinal cord injury: management of patients in acute hospital settings: national guidelines. Concise Guidance to Good Practice series, No 9. Retrieved from London:

Sharp, W. G., Volkert, V. M., Scahill, L., McCracken, C. E., & McElhanon, B. (2017). A Systematic Review and Meta-Analysis of Intensive Multidisciplinary Intervention for Pediatric Feeding Disorders: How Standard Is the Standard of Care? *The Journal of Pediatrics*, 181, 116-124.e114. doi:10.1016/j.jpeds.2016.10.002

Sproson, L., Pownall, S., Enderby, P., & Freeman, J. (2017). Combined electrical stimulation and exercise for swallow rehabilitation post-stroke: a pilot randomized control trial. *International Journal of Language & Communication Disorders*. doi:10.1111/1460-6984.12359

Sutt, A. L., Caruana, L. R., Dunster, K. R., Cornwell, P. L., Anstey, C. M., & Fraser, J. F. (2016). Speaking valves in tracheostomised ICU patients weaning off mechanical ventilation–do they facilitate lung recruitment? *Crit Care*, 20, 91. doi:10.1186/s13054-016-1249-x

Sutt, A. L., Cornwell, P., Mullany, D., Kinneally, T., & Fraser, J. F. (2015). The use of tracheostomy speaking valves in mechanically ventilated patients results in improved communication and does not prolong ventilation time in cardiothoracic intensive care unit patients. *J Crit Care*, 30(3), 491-494. doi:10.1016/j.jcrc.2014.12.017

Tembo, A. C., Higgins, I., & Parker, V. (2015). The experience of communication difficulties in critically ill patients in and beyond intensive care: Findings from a larger phenomenological study. *Intensive and Critical Care Nursing*, 31(3), 171-178. doi:10.1016/j.iccn.2014.10.004

Traube, C., Silver, G., Gerber, L. M., Kaur, S., Mauer, E. A., Kerson, A., . . . Greenwald, B. M. (2017). Delirium and Mortality in Critically Ill Children: Epidemiology and Outcomes of Pediatric Delirium. *Crit Care Med*, 45(5), 891-898. doi:10.1097/ccm.0000000000002324

UK National Tracheostomy Safety Project. (2013). National Tracheostomy Safety Manual. Retrieved from [www.tracheostomy.org.uk](http://www.tracheostomy.org.uk)

Yi, S. H., Kim, S. J., Huh, J., Jun, T. G., Cheon, H. J., & Kwon, J. Y. (2013). Dysphagia in infants after open heart procedures. *Am J Phys Med Rehabil*, 92(6), 496-503. doi:10.1097/PHM.0b013e31828763f4