# **Guiding Your Team to Greater Autonomy**



## Feeding delays can have an impact on patient outcomes



- An estimated 1/3 of patients enter hospital malnourished<sup>1</sup>
- An additional 1/3 will develop malnutrition during their stay<sup>1</sup>



In one study, 1/5 of hospitalised patients 65 years of age or older had an average nutrient intake of less than 50% of their calorie needs<sup>2</sup>



Malnutrition can result in nearly 3x higher hospitalisation costs and nearly 3x longer hospital stay<sup>3</sup>

## **Consequences of malnutrition in hospital patients**



Patients with malnutrition have:





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1.Tappenden KA, et al. J Acad Nutrition Dietetics 2013;113(9):1219–37; 2. Barker LA, et al. Int J Environ Res Public Health 2011;8(2):514–27; 3. Guenter P, et al. J Qual Patient Safety 2015;41(10):469–73; 4. Lim SL, et al. Clin Nutrit 2012;31(3):345–50; 5. Corkins MR, et al. J Parenteral Enteral Nutr 2014;38(2):186–95; 6. BAPEN report. The cost of malnutrition in England and potential cost savings from nutritional interventions. 2015 Available from http://www.bapen.org.uk/pdfs/economic-report-short.pdf Last accessed June 2020.

ΔVΔNOS

### Achieving early enteral nutrition is vital

Achieving early enteral nutrition in critically ill patients is associated with:<sup>1-4</sup>



Fewer major complications (including infections)

Reduced hospital stay

Cost savings

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Identifying and treating malnutrition appropriately and implementing the NICE clinical guidance<sup>5</sup> can lead to potential estimated cost savings of £126,649,987<sup>6</sup>



1. Managing Adult Malnutrition in the Community 2017 Available from: www.malnutritionpathway.co.uk Last accessed April 2020; 2. Harvey S, et al. *Health Technol Assess* 2016;20:28; 3. Doig G, et al. *Intensive Care Med* 2009;35:2018–27; 4. Elke G, et al. *Critical Care* 2016;20:117; 5. NICE CG32 2006. Available from: www.nice.org.uk/Guidance/cg32 Last accessed April 2020; 6. BAPEN report. The cost of malnutrition in England and potential cost savings from nutritional interventions. 2015 Available from http://www.bapen.org.uk/pdfs/economic-report-short.pdf Last accessed June 2020.

## Giving patients the nutritional support they need



- Enteral nutrition is preferred over parenteral nutrition in people who are malnourished or at risk of malnutrition<sup>1-3</sup>
  - Unless there is upper gastrointestinal dysfunction (e.g. non-functional, inaccessible or perforation) or enteral nutrition is inadequate

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### If the GUT works – Use it!





#### ΔνΔΝΟΣ

### Nasogastric feeding: Safety implications

### Main causes of harm caused by misplaced feeding tubes<sup>1</sup>

- Misinterpretation of x-rays
- Feeding despite aspirate between pH6 and pH8
- Instilling water before obtaining aspirate
- No checking of tube placement

The main causal factor leading to harm

## Nasogastric feeding: Patient safety alert and assessment

NPSA, NHS England and NHS Improvement published the number of events where fluids or medication were introduced into the respiratory tract or pleura via a misplaced nasogastric or orogastric tube<sup>1,2</sup>



- Studies suggest this may be a considerable underestimate, with inadvertent placement into the bronchi occurring in 2–4% of blind placements<sup>3</sup>
- This suggests a potential rate of misplaced tubes in the UK of 5,000–110,000 per annum, with the potential to cause significant morbidity and mortality<sup>3</sup>
- Furthermore, rates of pneumothorax from bronchial tube placements may be as high as 18.7–26%, with an associated mortality of 2.7–4%<sup>3</sup>

#### ΔνΔΝΟS

NPSA. Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants. 2011. Available from: http://www.procurement.wales.nhs.uk/23814.file.dld Last accessed April 2020; 2. NHS Improvement. Patient Safety Alert NHS/PSA/RE/2016/006. Nasogastric tube misplacement: continuing risk of death and severe harm. 2016. Available from: https://improvement.nhs.uk/uploads/documents/Patient\_Safety\_Alert\_Stage\_2\_-\_NG\_tube\_resource\_set.pdf. Last accessed April 2020; 3. Smithard D, et al. *Dysphagia* 2015;30:275–285; 4. Lei K, et al. *Crit Care* 2007;11(Suppl 2):P151.

# Known consequences of enteral tube misplacement

If enteral tube misplacement is not identified before feeding is commenced, the consequences can be serious, including:<sup>1-3</sup>





## Reduce the time-to-feed to minimise the risk of malnutrition

Facilitate early Provide real-Key components to the solution for Efficiently place time feedback CORTRAK\* to address:1-4 during placement 1-4 Reduce the need for endoscopy and multiple x-rays to confirm tube placement  $(NJ and NG)^{1-3}$ Reduce the Reduce patient burden on improves the iournev<sup>1,3,4</sup> Direct tubes to desired feeding placement<sup>1-3</sup>



## Guided Placement addresses the challenges and provides the solution

#### **Ensuring prompt enteral tube placement**

Efficient placement <sup>1-3</sup>	Timely feeding <sup>1-3</sup>	Reduced burden <sup>1-3</sup>
<ul> <li>Visualisation at bedside</li> <li>Direct tubes to desired feeding placement with real-time feedback</li> <li>Immediately identify misplaced tubes</li> <li>Minimise complications, such as lung placements</li> </ul>	<ul> <li>Can significantly reduce the time-to-feed</li> <li>More efficient than blind placements</li> </ul>	<ul> <li>Address feeding needs more quickly</li> <li>Can improve patient outcomes</li> <li>Save time and resources</li> <li>Reduce patient suffering</li> </ul>
78.0%–98.4% tubes successfully placed <sup>1–4</sup>	66% reduction in the time between order for tube placement and initiation of feeding <sup>2</sup>	Saving of \$150-\$232 per tube <sup>2,4</sup>



# Guided placement facilitates nasointestinal feeding

 CORTRAK\* facilitates post-pyloric tube insertion at the bedside and reduces the need for confirmatory x-rays, allowing early enteral feeding<sup>1-7</sup>

- Placement of post-pyloric tubes take on average 42 mins for blind placement vs 15.5 mins for CORTRAK<sup>+,6</sup>

- 66% reduction in the time between order for tube placement and initiation of feeding<sup>4</sup>
- With CORTRAK\*, even patients with delayed gastric emptying can receive more effective nutrition compared to using prokinetics alone<sup>2</sup>

#### Δνδνος

<sup>†</sup>Based on a systemic literature review of nine studies. 1. Taylor S, et al. *Br J Nurs* 2014;23:352, 354–8; 2. Taylor J, et al. *J Parenter Enteral Nutr* 2010;34:289–294; 3. Wang X, et al. *J Invest Surg* 2014;27:21–26; 4. Gray R, et al. *Nutr Clin Pract* 2007;22:436–444; 5. Stockdale W, et al. Poster presented at the American Society for Parenteral and Enteral Nutrition Meeting, 2007; 6. Smithard D, et al. *Dysphagia* 2015;30:275–285; 7. NICE MIB48 2016. Available at: www.nice.org.uk/advice/mib48/chapter/Appendix#table-7-overview-of-the-powers-et-al-2011-study Accessed April 2020.

### **Guided placement the solution**

#### Supporting patient care by confirming that CORTRAK\* is:

Q	Accurate	<ul> <li>CORTRAK* virtually eliminates the risk of tube misplacement (0% vs. 1.77% misplacements with conventional methods)<sup>+,1</sup></li> <li>o However, tube misplacements can occur if healthcare professionals are not suitably trained<sup>2</sup></li> <li>Tube position with CORTRAK* is 97.5% accurate when confirmed with x-ray<sup>+,1</sup></li> </ul>
••	Fast	<ul> <li>CORTRAK* reduces:</li> <li>The average time to start of enteral feeding to 11.5 hours vs. 21.5 hours for blind placement<sup>+,1</sup></li> <li>The mean intubation time to 9.6 minutes vs. 11.6 minutes with blind placement, or 122 minutes with blind placement plus x-ray confirmation (p&lt;0.001)<sup>3</sup></li> <li>The mean placement time in critically ill patients to 7.6 minutes with successful placement even after gastrointestinal surgery<sup>3</sup></li> </ul>
T	Economical	<ul> <li>More rapid and safer tube insertion is cost effective compared to blind placement using a variety of estimates, settings and outcomes<sup>+,1</sup></li> </ul>



#### ΔνΔΝΟΣ

### **CORTRAK\*: Feeding Tube placement without delay**



- An electromagnetic stylet provides real-time location information on the tube tip placement within a patient's anatomy<sup>1</sup>
- On-screen visualisation provides immediate feedback on tube entry into the upper airway, allowing repositioning before final placement <sup>1,2</sup>

### **Cost savings with CORTRAK\***

In a 14-month retrospective review of 39 tube placements in 38 patients, CORTRAK\* was associated with:<sup>1</sup>



NICE advice for CORTRAK\* reports cost savings of £41 to £143 per placement (based on 2 conference abstracts and 4 published studies)<sup>2</sup>

**CORTRAK\*** delivers real cost savings by reducing the need for x-rays and parenteral nutrition<sup>1,3,4</sup>

• In addition, CORTRAK\* can help reduce the unnecessary exposure to X-ray radiation<sup>1,4</sup>



### **CORTRAK\*:** reducing **RISK**, reducing **COST**



