Learning Package

Health
Hunter New England
Local Health District

Enteral Nasogastric Tube (Adult): Insertion and management V2

Sites where Learning package applies:	All HNE Health sites where an adult patient receives care
Target audience:	Medical Officers, Registered Nurses, Registered Midwives, Enrolled Nurses
Learning Outcomes, On completion of this package you will be better able to:	• Identify key anatomical landmarks relevant to NG tube insertion and management • Identify indications and contraindications for NG tube insertion • Identify the equipment required for different clinical scenarios which require NG tube insertion • Describe the insertion and securing procedure for an NG tube • Explain how correct NG tube placement is confirmed • Outline care of a patient with an NG tube
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Version Number and Date:	Enteral Nasogastric Tube (Adult): Insertion and management LP: 17:01

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- NSW Health PD2009_019 Fine Bore Nasogastric Feeding Tubes for Adults Policy
- NSW Health Policy Directive PD2017_032 Clinical Procedure Safety
- Enteral and Nasogastric Tube Care – Adult_HNELHD CG – (under review – TBA)
- Enteral Nasogastric Tube Insertion (Adult) HNELHD CP 18_15
- Administering Medications via Enteral Tube (Adult) HNELHD CP 17_20
- Removal of an Enteral Nasogastric Tube (Adult) HNELHD CP 18_10
- Enteral Feeding Maintenance (Adult) HNELHD CP 18_07
- Kangaroo™ ePUMP Enteral Feeding Pump (Adult) HNELHD CP 18_08
- Nasogastric Suction – Intermittent and Continuous (Adult) HNELHD CP 18_09
- **See Reference Section for *Additional Related Documents* – page 29**

Is this package recorded in My Health Learning?	Yes
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Review date	August 2021

Enteral Nasogastric Tube (Adult): Insertion and management

Learning Package

August 2018

NSW GOVERNMENT Health
Hunter New England Local Health District

Learning Package Overview

Purpose:

This enteral Nasogastric (NG) tube adult: Insertion and management package is for Registered Nurses, Midwives and Medical officers working within areas where NG tube insertion and management is a part of their role, to develop skills in the practice of NG tube insertion and management.

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The learning package is to be reviewed every 3 years or earlier if changes in NSW Health or HNELHD policy or clinical practice change.

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Introduction

Insertion of a nasogastric tube is considered a (Level 1) high risk invasive procedure. Every clinician involved in the procedure is responsible for ensuring the processes for clinical procedure safety are followed. Please read Clinical Procedure Safety: PD2017_036.

This package provides an introduction to the concepts and principles of insertion and care of Nasogastric (NG) tubes in adult patients (>16yrs).
Insertion of nasogastric tubes are generally performed by suitably trained registered
Nurses, midwives, enrolled nurses and medical staff. All staff are required to refer to hospital policy before attempting to perform insertion of nasogastric tube.
A Nasogastric (NG) tube is a tube that is passed through the nose and down through the nasopharynx and oesophagus into the stomach. It is a flexible tube with bidirectional flow potential.
Common therapeutic indications for NG tube use include the following:

- Decompression of the gastrointestinal tract (GIT)
- Gastric lavage
- Diagnosis and assessment
- Nutritional support
- Medication administration

Disclaimer

This learning package has been prepared by health professionals employed in Hunter New England Local Health District. While all care has been taken to ensure that the information is accurate at the time of development, the authors recommend that all information is thoroughly checked and contextualised before applying into practice.

Aim

The aim of the package is to provide the theoretical knowledge that underpins practice in the insertion and management of Enteral NG tubes.

Learning Outcomes

Completion of this package is the first step towards developing competence in managing NG tube insertion. Competence refers to the combination of skills, knowledge, attitude, values and abilities that underpin effective and/or superior performance related in this case to management of a patient requiring a NG tube.

Following completion of this learning package the participant will be able to:

- Identify key anatomical landmarks relevant to NG tube insertion and management
- Identify indications and contraindications for NG tube insertion
- Identify the equipment required for different clinical scenarios which require NG tube insertion
- Describe the insertion and securing procedure for an NG tube
- Explain how correct NG tube placement is confirmed
- Outline care of a patient with an NG tube

Pre-requisites:

There is no prior learning required to undertake this learning package. Prior to undertaking a practical assessment participants are required to be current in completion of mandatory training modules on HETI including:

- Hand Hygiene,
- Management of invasive devices,
- Recognition of the deteriorating patient.

Full benefits of completing the package will be attained by working in a relevant clinical area

The package is designed to guide you through the literature and clinical issues related to NG tube insertion and management.
On completion and submission of this learning package (Step 1) a record of your completion will be added to your learning record in HETI online. To be credentialed (Step 2) you will be required to undertake a practical assessment in NG tube insertion, using a relevant assessment tool. This enables knowledge to become translated to practice at an agreed standard.

How to use this resource:

- This resource has been written from a Hunter New England Area Local Health District perspective and is not specific to any one health facility. Throughout the package procedures from the John Hunter Hospital have been mentioned as an example of practice, these may need to be contextualised in your local clinical setting.
- The readings enhance the learning and are therefore recommended. These can be accessed online (journal articles) through CIAP. If you experience difficulty locating these readings please seek assistance from your hospital / health facility library.

Assessment process

- You are required to complete this package to finalise Step 1 of the learning pathway. Completion of this section will be recorded in your HETI online learning history under the title: Nasogastric Tube (Adult): Insertion and management. The package can be returned to a senior nurse/ educator with the relevant knowledge and skills in NG tube insertion and management who will mark it and provide you with feedback.
- After the package has been completed and reviewed you will need to have a practical assessment. Assessment may occur in a clinical or simulated environment. This finalises the assessment process through translation of knowledge to skills.

Reflection tool

At the completion of the learning package there is a tool for you to reflect on your learning. This guides your reflection on how the package meets your professional development needs, and how might you apply the learnings into practice. It is a useful document to include in your professional portfolio.

Evaluation

A form is included at the end of the Learning Package for completion by the learner. All feedback is appreciated and assists in development of a quality program. Please return the completed evaluation to: *Peter Cocking: CNC wound management, IV and enteral/parenteral* *peter.cocking@hnehealth.nsw.gov.au*

ABBREVIATIONS & GLOSSARY

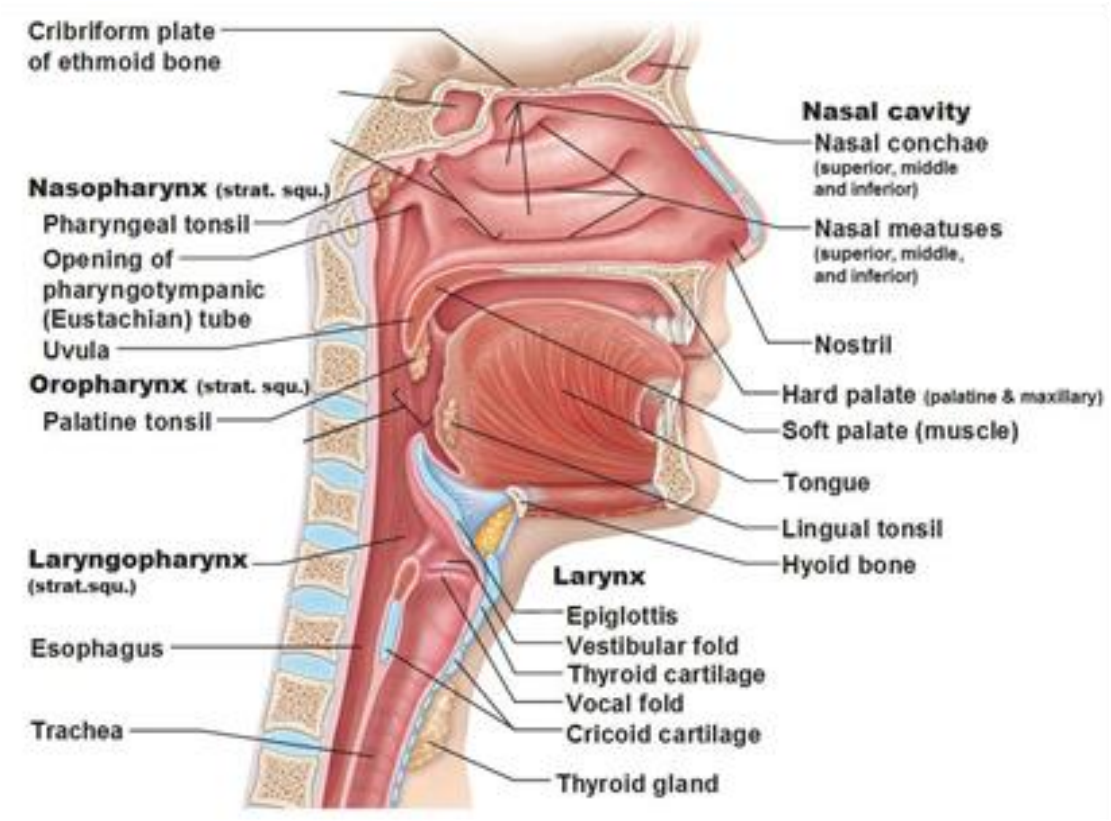
ENFit	A new enteral-specific connection system designed to eliminate the risk of medications and nutritional formula intended for enteral administration from being delivered via other routes (e.g. IV or airway)
NG	Nasogastric
NGT	Nasogastric tube
PPE	Personal Protective Equipment

SECTION 1:

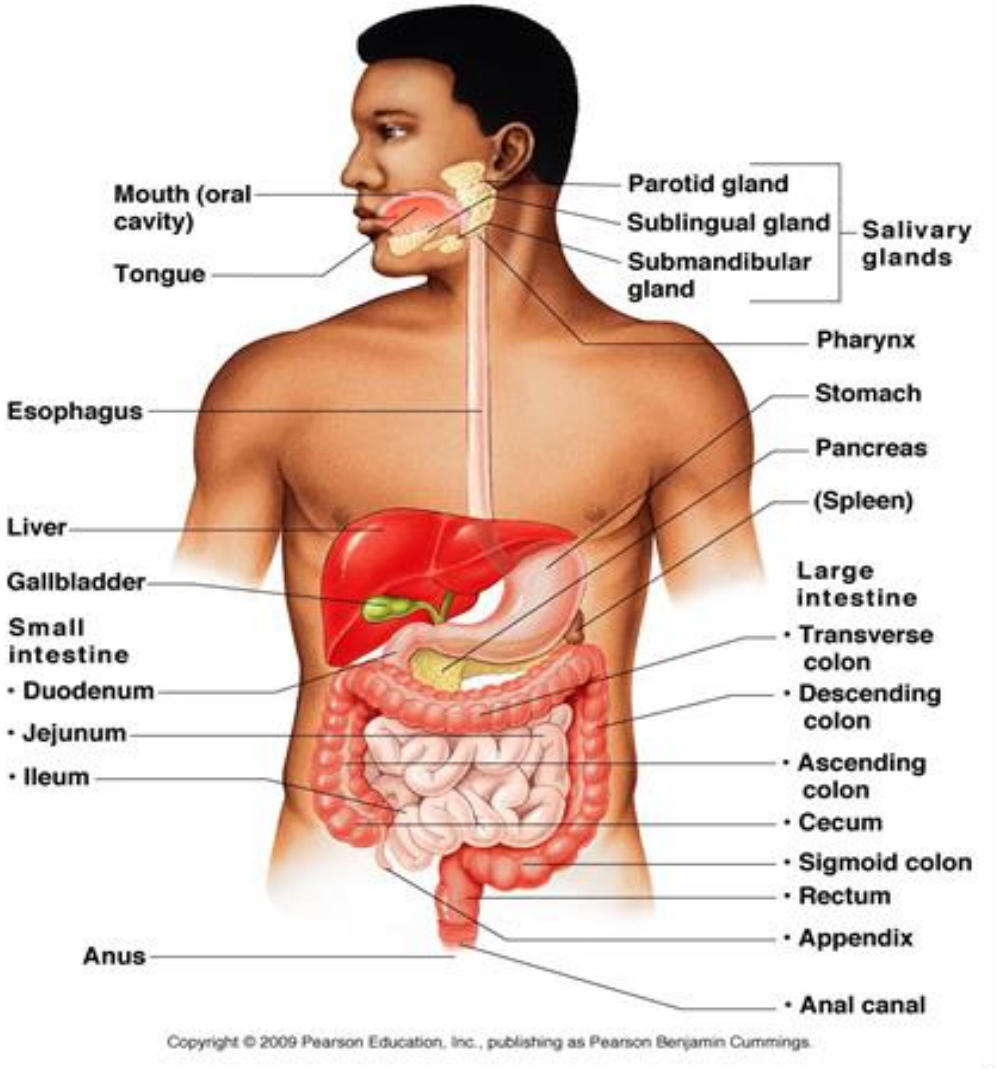
Learning outcome related to this section:

- Identify key anatomical landmarks relevant to Enteral NG tube insertion and management

Knowledge of the size and condition of the landmarks are used to determine the size of tube and length of placement. Being aware of the anatomy will assist clinicians in being able to troubleshoot during insertion. This is because the tube is passed through the nasal cavity and down into the throat. When it enters the oropharynx and glides down the posterior pharyngeal wall gagging may occur. Once it passes the pharynx and enters the oesophagus the passage into the stomach is unobstructed. Knowledge of anatomy also enables early recognition of misplacement in the event that the tube has passed through the larynx into the trachea and down into the bronchi and lungs.



Overview of anatomy



Activity 1:
Look at the pictures above, list the things that might affect the passage of a NG tube?

-
-
-

Section 2:

Learning outcomes related to this section:

- Identify indications and contraindications for NG tube insertion
- Identify the equipment for different clinical scenarios which required an NG insertion

Indications

Diagnostic indications for NG tube insertion include the following:

- Evaluation of upper gastrointestinal (GI) bleeding (ie: presence, volume)
- Aspiration of gastric fluid content
- Identification of the esophagus and stomach on a chest xray
- Administration of radiographic contrast to the GI tract

Therapeutic indications for NG tube insertion include the following:

- Gastric decompression, including maintenance of a decompressed state after endotracheal insertion, often via the oropharynx
- Relief of symptoms and bowel rest in the setting of small-bowel obstruction
- Aspiration of gastric content from recent ingestion of toxic material
- Administration of medication
- Nutrition
- Bowel irrigation

State Government Victoria (2008) Clinical skills in hospital project. Nasogastric therapy.

Contraindications

Do not insert nasogastric tubes for patients who:

- Have oesophageal varices or signs of long standing alcohol abuse including hepatomegaly
- Wernicke-Korsakoff's syndrome, telangiectasia – patients are at higher risk of damage to the oesophageal wall causing veins to bleed uncontrollably
- Have had upper gastrointestinal stricture/obstruction – perforation of the gastrointestinal tract may occur by the tube being pushed through the walls
- Are post-gastrectomy/oesophagectomy – may cause trauma to the anastomosis
- Are post-oesophageal / head and neck surgery – may damage or create orifices/ fistula around surgery site. Inadvertent insertion of tube into other anatomical structures may occur
- Have severe maxillary trauma / nasal injuries / possible base of skull fractures – tube may be incorrectly inserted into other anatomical structures e.g. intracranial or tracheopulmonary. *Use an **orogastric** tube instead*
- Have had plastics reconstruction to mouth, nose or oropharynx which may have led to changes in the anatomy
- Have a suspected spinal injury – tube normally requires hyperflexion of the neck which may lead to permanent damage

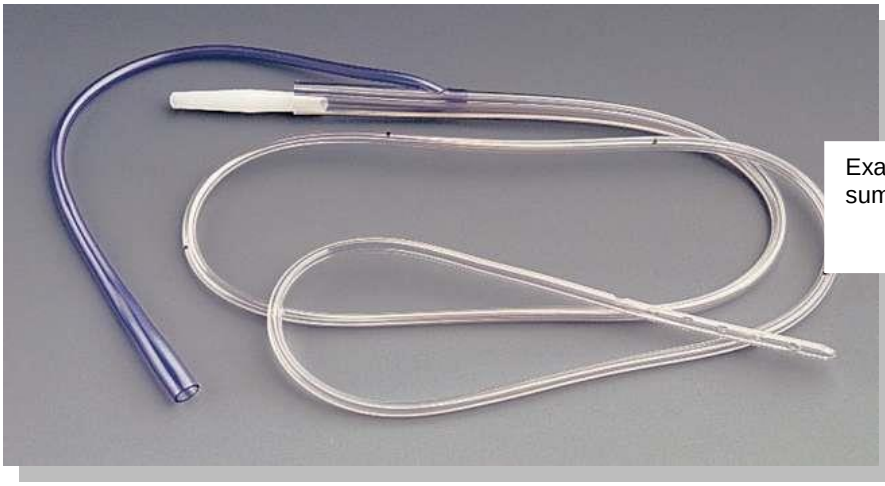
Rarely in extenuating circumstances, the need may arise to perform insertion of NG tube in the above conditions. On these occasions, only a Medical Officer and RN experienced in insertion of an NG tube should perform the procedure.

Types of Nasogastric tubes

There are a variety of nasogastric tubes available and indications for use may vary depending on the patient's age, clinical condition and nutrient requirements.

Wide bore nasogastric tube (e.g. Salem sump)

A wide bore nasogastric tube is used for gastric decompression. It can also be used initially until enteral feeding tolerance is demonstrated by the patient. Once this occurs the wide bore can be replaced with a fine bore feeding tube.



Example of Salem sump nasogastric tube

Activity 1: Case study

Mary Smith, a 76 year old female was admitted with nausea and vomiting, a painfully distended abdomen and recent weight loss. Bowels not open for 3 days.
Diagnosis: - acute bowel obstruction
Past medical history: - Hypertension, Gastric oesophageal reflux disease, chronic airways limitations, Previous surgery for adenocarcinoma 3 years ago. Long term heavy smoker. There is a risk of aspiration so decompression of the gastric contents is planned by the surgical team.

What should be done for the patient in preparation prior to inserting a Salem sump NG tube?

- ☐ Verify medical order
- ☐ Undertake required documentation and checking procedure
- ☐ Check allergies to all materials
- ☐ Ensure that the patient has received appropriate information to provide informed consent and, that patient identification, correct procedure and correct site process is completed prior to the procedure
- ☐ The patient is given a clear explanation of the procedure
- ☐ Patient’s must be able to understand and cooperate with instructions
- ☐ All the above.

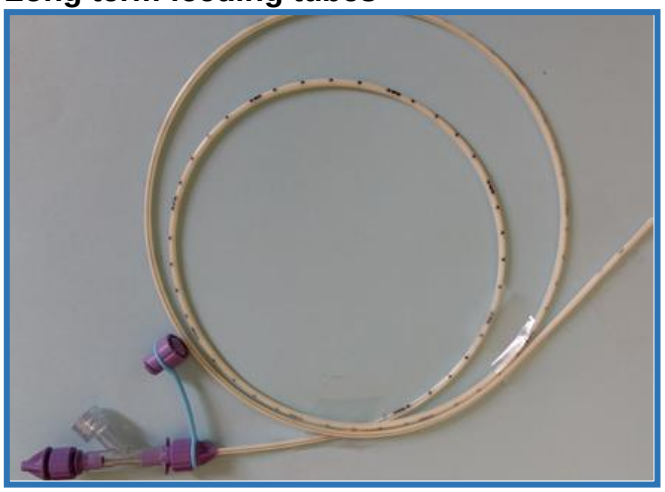
What type and size of nasogastric tube is required for decompression?

- ☐ Salem sump 16 Fr
- ☐ Soft bore feeding tube12 Fr
- ☐ Salem sump 12 Fr
- ☐ Nasojejunal tube 10 Fr

Fine bore nasogastric tube

A fine bore nasogastric tube is a narrow bore tube passed into the stomach or post pyloric via the nose as a means of administering a patient's nutritional needs when they are unable to maintain adequate oral intake. Fine bore nasogastric tubes are long term devices that can remain insitu up to six (6) weeks and can come with or without a guide-wire.
Finer soft bore nasogastric tubes result in less tissue damage than wide, harder nasogastric tubes, although increase risk of blockage.

Long term feeding tubes



Clear labelling must be used to alert clinical staff that the device is in use for enteral feeding.

Reading: HNELHD Enteral Feeding Tube Guideline: Adult (available on the intranet)

BE AWARE THAT

- Critically ill patients may be at increased risk of NG tube complications e.g. patients with neurological deficits.
- Insertion of a NG tube into a patient with no or diminished reflexes may cause accidental insertion into other anatomical structures.
- Caution is required when inserting NG tubes in patients on anticoagulants or who have impaired blood clotting.
- Caution is required when inserting NG tubes in patients with a tracheostomy because of the risk in inadvertent tracheal intubation (particularly patient's with un-cuffed tracheostomy tubes).
- A NG tube may cause gastric contents to leak from the stomach causing oesophageal erosions in patient with gastro-oesophageal reflux.

Enteral feeding and intravenous equipment must never be interchanged

SECTION 3:

Learning outcome related to this section:
- Describe the insertion and securing procedure for an NG tube

Nasogastric tube insertion

Risks associated with insertion

1. Incorrect insertion and placement of nasogastric tubes:

Poor technique or using the incorrect procedure to insert or check tube placement can result in adverse patient outcomes including:

- Trauma to surrounding tissues
- Pneumothorax;
- Aspiration associated with tube dislodgement;
- Pneumonitis from nasogastric feeds being deposited into the lungs; and
- Misplacement of the tube into the lungs or rarely, in patients with cribriform plate disruption, intracranial insertion.

Activity 2:

Strategies to reduce risk

Consider the patient's anatomy and risks posed by NG tube insertion. What comfort measures can you take to ensure patient safety and that the patient experiences minimal discomfort during the procedure?

-
-
-
-

DO…

- Ensure that insertion of a NG tube is ordered by a medical officer, with the order and the rationale for insertion of the NG tube documented in the patient's health care record
- The patient must be assessed that they do not have a contraindication or potential complications for insertion of a NG tube
- Check the patient's allergies, including to Lignocaine (Lidocaine) and tape
- Use feeding tubes that are opaque with markings to enable accurate measurement, identification and documentation of tube position
- Undertake patient observations pre and post-insertion of the NG tube. Observations must include temperature, pulse, blood pressure, respiratory rate and oxygen saturation; and be documented in patient's health care record
- Confirm the position of the nasogastric tube radiologically after insertion.
- Consider referring the patient to radiology for insertion of the NG tube under imaging if the patient is known to have oesophageal varices, strictures or severe coagulopathy.

DO NOT….

- Do not reinsert the guide-wire after tube insertion or to advance tube at any time.
- Do not refrigerate NG tubes prior to insertion, as this will make the tube rigid and may cause trauma during insertion.

TIPS

- This procedure can be uncomfortable.
- Apply Lidocaine (lignocaine) and phenylephrine spray (CoPhenylcaine) to the nares, nasopharynx and oropharynx and lidocaine (lignocaine) gel applied along the tube after measuring tube. (Avoid blocking holes in the tube) – (*Lidocaine (lignocaine) and phenylephrine (CoPhenylcaine Forte) nasal spray and lidocaine (lignocaine) 2% gel for insertion of enteral nasogastric tube in adults HNELHD N/MIM 18_24*)
- For patients with a dry mouth but impaired gag reflex moisten the mouth with a moist cotton bud prior to requesting them to swallow or ask them to sniff to lift the soft palate.

The following principles are essential for tube insertion:

- Verify correct patient, procedure and site

You must verify the correct patient by confirming full name, date of birth and a 3rd identifier such as MRN with the patient and against the health care record. Then verify the correct procedure is being performed on the correct site. A NSW Health Procedural Safety Checklist – refer to PD2017_032 Clinical Procedure Safety must be completed.

- Obtain patients consent

You must obtain consent before insertion of a nasogastric tube. Verbal consent is sufficient, but it must be voluntary and informed. This must be documented in the progress notes. The only circumstances where consent is not required is in an emergency, or if the person is unconscious.

- Guard against introducing contamination

The most effective method of protecting against contamination during insertion of a nasogastric tube is by ensuring adequate hand hygiene and a clean insertion technique.

- Only ever make two attempts at insertion

If you cannot insert a nasogastric tube on the 1st or 2nd attempt, seek help from a clinician who is experienced in insertion of a nasogastric tube.
If the patient has had a difficult insertion of a nasogastric tube previously and you don't feel confident it is preferable to seek help earlier rather than later and learn from a more experienced clinician.

- Check the nasogastric tube and monitor the patient regularly

As a minimum, patients' with a Nasogastric tube should have placement checked at least 4/24 by nursing/midwifery staff and once a day by the Surgical/Medical team especially if the tube is being used for suction. Observe for signs of NG tube malposition, ensure the nasogastric tube is secured appropriately, measure and document general observations, assess respiratory function, nausea and vomiting and document findings.

Activity 3:

What is a contraindication for nasogastric tube insertion in an adult patient from the list below?

- ☐ Nausea and vomiting
- ☐ Fractured skull
- ☐ Ileostomy
- ☐ They have an allergy to skin prep

After greeting the patient you explain why and how an NG is to be inserted, answered her questions and gain verbal consent.

What are the complications of nasogastric tube insertion

- ☐ Rhinitis, pharyngitis, sinusitis, oesophagitis
- ☐ Nasal septum pressure injuries
- ☐ Nasopharyngeal ulcers
- ☐ Hoarseness
- ☐ Gastric ulceration
- ☐ All of the above

READING:

HNELHD has a comprehensive guideline relating to Enteral Nasogastric Tube Insertion (Adult) HNELHD CP 18_15: This document is available on the PPG intranet site. Read this document for detailed instruction on how to insert a nasogastric tube.

How do you verify the correct patient?

- ☐ Name and MRN
- ☐ Full name, date of birth and MRN
- ☐ MRN and date of birth
- ☐ Ask the patient if they are having an NG tube inserted

What is the correct method to measure the distance or length to insert a NG tube in an adult patient for decompression?

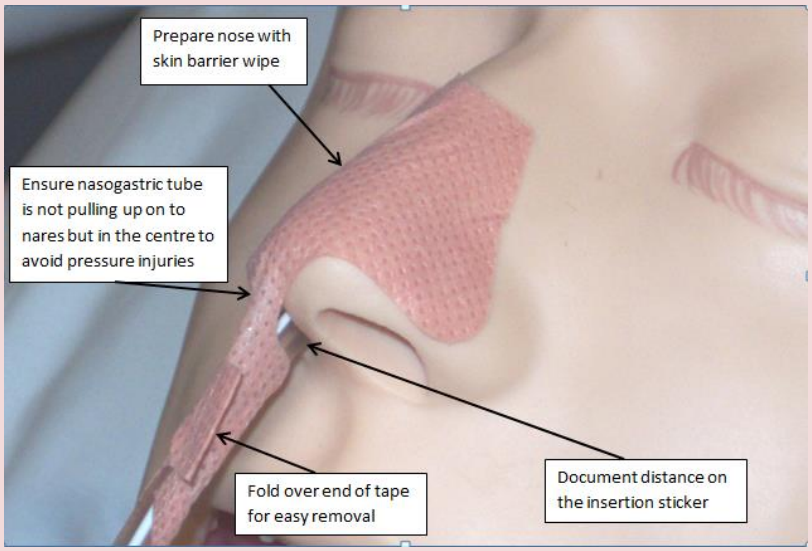
- ☐ Tip of nose to navel
- ☐ Tip of nose to xiphisternum
- ☐ Tip of nose to ear lobe then to xiphisternum

What are the next steps with securing the NG tube?

- ☐ Use skin preps
- ☐ Use nasal securement tape and fold over the last 5mm
- ☐ Ensuring no pressure on the nares
- ☐ document exit measurement at the nare on the nasogastric insertion -label
- ☐ All of the above

Practice Alert

Correct tapping helps to avoid a pressure injury.
Ensure tape does not pull upwards to place pressure on the anterior nares. Securing of the nasogastric tube:



Nasogastric tube insertion checklist

- Alcohol based hand rub
- PPE: non-sterile gloves, goggles/face shield, gown
- Trolley
- Appropriate NG size directed by specialist. For bowel decompression a 16Fr and for enteral feeding a 12 Fr
- Lidocaine (lignocaine) and phenylephrine (CoPhenylcaine) nasal spray, lidocaine (lignocaine) gel or lubricant gel
- pH indicator strips with 0.5 gradations or paper with a range of 0 to 6 or 1 to 11
- ENFit or tapered syringe as per NG design
- Emesis bag
- Absorbent towel or sheet
- Cup of water & straw
- Kidney dish (to keep syringe)
- Anti-reflux valve (not recommended; if used, must be assessed regularly and replaced if blocked)
- Nasal Securement Tape – Adults
- Skin barrier wipes
- Material tape
- Large alcohol wipes to clean trolley
- Gastro Enteric Tube Insertion label (Stock item number - 2HHELB002) for health record documentation.
- Enteral feeding sets, syringes and accessories – refer to:

http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0015/147201/Enteral_Feeding_Connectors.pdf
http://intranet.hne.health.nsw.gov.au/clinical_equipment_products_and_consumables?a=155445

Activity 4:
Mr Jones is 65 year old admitted with pancreatitis and you have just inserted a nasogastric tube. He weighs 90kgs; the length of tube required is 52cm. The pH is 4 and position has been checked and confirmed by x-ray. The label below needs to be added to Mr Jones notes. Please complete the label.

Gastro Enteric Tube Insertion label _2HHELB002

Gastro/Enteric tube insertion label

Full name: _____ MRN: _____

Reason for tube insertion: ☐ Decompression ☐ Feeding

Type of tube: ☐ Wide bore ☐ Small bore feeding tube ☐ Size: _____

Placement: ☐ R ☐ L ☐ Nasogastric ☐ Oro-gastric ☐ Post pyloric

Inserted by: ☐ MO ☐ RN ☐ RM ☐ EN

Insertion date: _____ **Time:** _____ **Exit length at nare:** _____ cms

pH result: ☐ < 5 ☐ 5 or >5 ☐ Gastric fluid aspirated use for suction

☐ **Guidewire removed and intact if present:**

Name: _____ **Signature:** _____

X-ray must be performed before anything is administered through the tube.
If tube is malpositioned, removal and reintroduction is required.
Do not re-insert the guidewire whilst the tube is in-situ in the patient.

STUDENT DO NOT PRINT

X-ray attended: ☐ Yes ☐ No Date: _____ Time: _____

Position checked: ☐ Non rotated film ☐ Tube follows the oesophagus

☐ Bisects the carina or bronchi ☐ Crosses the diaphragm in the midline

☐ Clearly visible below the left hemi-diaphragm ☐ **Final exit length at nare:** ____ cms

X-ray checked by MO: Date: _____ Time: _____

☐ **Enteral tube can be used for administration purposes:**

Feeding ☐ Yes ☐ No **Drugs** ☐ Yes ☐ No

Name: _____ **Signature:** _____

2HHELB002 120618

Case study

After checking the surgical order to commence enteral feeds what must happen prior to using the gastric tube for feeding?

- ☐ The Salem sump tube must be replaced with a soft bore feeding tube
- ☐ Ph test of aspirate to ensure equal or less than 5
- ☐ A chest x-ray to ascertain correct tube tip placement
- ☐ Check the tube measurement is correct on the NG tube
- ☐ All of the above

Reviewing the chest X-ray what are the determining factors that the NG tube tip is in the correct position

- ☐ The NG tube follows the oesophagus
- ☐ Bisects the carina or bronchi
- ☐ Crosses the diaphragm in the midline
- ☐ The tip clearly visible below the hemi-diaphragm
- ☐ All of the above

If enteral feeds are to continue, the salem sump should be replaced with a fine soft bore feeding tube when enteral feeds are tolerated and no longer than 14 days?

❑ True or ❑ False

SECTION 4

Learning outcome related to this section:

- Explain how correct NG tube placement is confirmed
- Outline care of a patient with an NG tube

Management of a patient with an NG tube inserted

Confirming placement of nasogastric tube

It is recognised that the best method of determining nasogastric tube location is provided by reliably obtained and interpreted X-ray that visualises the entire course of the tube. However, many factors, including exposure to radiation, delay in obtaining and interpreting radiographs, risk of tube misplacement while moving the patient, and the cost to the patient, contribute to the need for other methods for confirming tube placement.

When to re-check the nasogastric tube position?

- Following initial insertion
- Before administering each feed and /or giving medication
- At least once per shift during continuous feeds
- Following episodes of respiratory distress vomiting, retching or coughing. Note: the absence of coughing does not rule out misplacement or migration
- If suspicion of tube displacement, e.g. poor tolerance to feed, reflux of feed into the throat, discomfort in the throat, change in tube length is suspected.
- If the patient has been transferred from one clinical area to another.

- Check for pressure injuries to the nares and tape secure regularly and retape prn. If a pressure injury observed retape to a different position or remove and replace using another enteral route i.e. the other nostril.
- Document if enteral tube removed on the enteral tube removal label as per Removal of an Enteral Nasogastric Tube (Adult) HNELHD CP 18_10.
- Provide regular mouth care. Refer to Minimum Standards of Patient Care for Adult Inpatients HNELHD Pol 14_06 and Oral Care for the Paediatric and Adult Patient (Non Intensive / High Dependency Care) HNELHD GandP 17_26 or Oral Care for the Adult Intensive Care/Critical Care Unit Patient HNELHD GandP 17_31
- While nasogastric tube is in situ for decompression, observe each shift for presence of bowel sounds, decreased abdominal distension, drainage, flatus or spontaneous bowel movement that indicates return of peristalsis. Document observations in patients' health record and maintain an accurate fluid balance chart, also weigh 1 to 2 times per week.

Nursing Considerations

- Check NG placement every 4 hours and before feeding
- Check regularly for potential nasal pressure injuries
- Change tape PRN
- Regular mouth care and check tube not coiled in the back of the mouth
- Assess if the patient can speak if unable the tube maybe malposition through the vocal cords into the trachea
- Strict fluid balance
- If feeding tube - change the giving set every 24 hours.
- Document in the patient's medical records using the NG insertion sticker.
- If administering medications via NG tube: check compatibilities, use suspensions when able, deliver medications individually, never crush sustained release or enteric coated medications, always flush following medication administration, check with pharmacist.

Reading Administering Medications via Enteral Tube (Adult) HNELHD CP 17_20

- Never modify connections to fit IV infusion devices, use ENFit and appropriate infusion pump only.
- Use non touch technique to protect key parts when handling feeding equipment
- If the patient is immunocompromised, use sterile water for flushes and cleaning end of feeding tube with a disinfectant wipe.

Care of the person with NG TUBE ON SUCTION

- Always leave the side vent (blue tubing) open to atmosphere if on low continuous suction.
- Check the position of the NG tube every 4 hours.
- Check marking on tube relative to nose
- Aspirate tube with syringe
- Listen for "whistling" from the side vent if on low continuous suction.
- Flush main tube with 20ml water and side vent with air to ensure patency
- If fluid is coming up the side vent it means the main tube is blocked. Flush tube and side vent as above and reconnect to suction.

- Regular observation of nasal area for pressure injuries
- Frequent mouth Care
- Accurate fluid balance
- A NG tube that is not working is potentially harmful to the patient as it increases the risk of aspiration.

Reading Nasogastric Suction – Intermittent and Continuous (Adult) HNELHD CP 18_09

Further recommended readings

Fine Bore Nasogastric Feeding Tubes for Adults Policy

Metheny, N. A., & Titler, M. G. (2001). Assessing placement of feeding tubes. American Journal of Nursing, 101 (5). Found on CIAP ovid full text

Metheny, N. A. (2002). Inadvertent intracranial nasogastric tube placement. American Journal of Nursing, 102 (8). Found on CIAP ovid full text

Trouble shooting

To avoid complications ensure a thorough medical history is taken including previous surgery and injuries. Complications are reduced with soft bore feeding tubes although smaller tubes have an increased risk of blocking.

Gastrointestinal

During insertion of a NG tube damage can occur anywhere along the gastrointestinal tract so never force the tube. The tube passes through the esophageal sphincter can lead to gastric contents refluxing causing esophagitis with associated pain and also pulmonary aspiration. The patient may require gastric acid suppression to alleviate the symptoms.

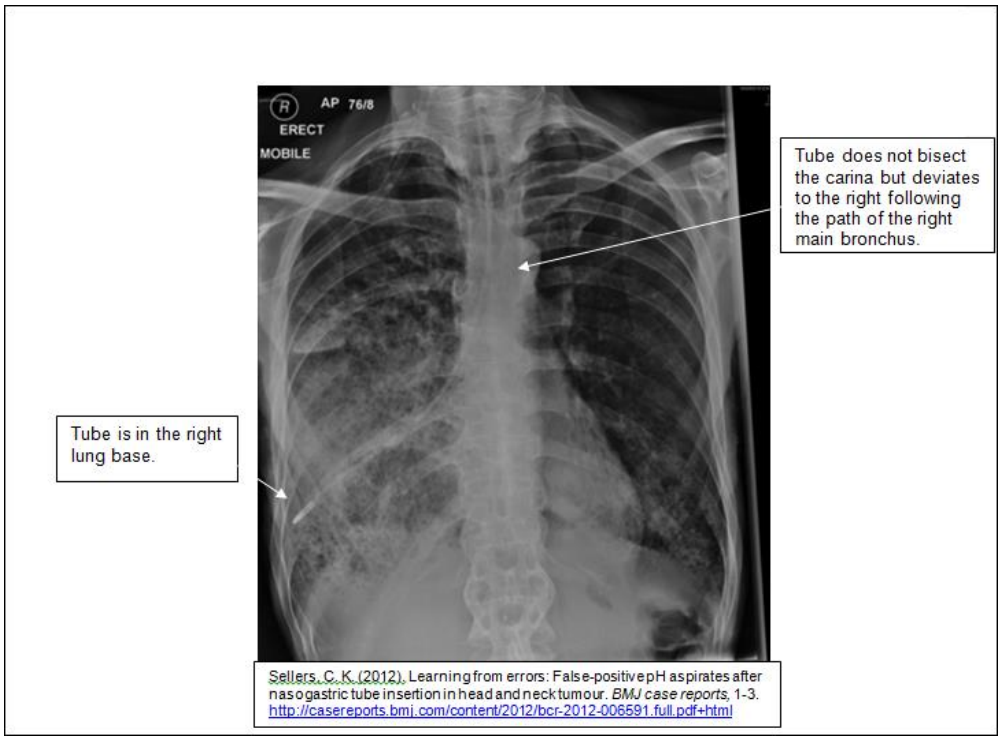
The tube can cause gastric ulceration through pressure and suction. Observe aspirated gastric contents to ensure nil bleeding and if observed the treating team should be notified immediately.

Pulmonary

Inadvertent placement of the NG tube into the trachea or lung can cause devastating complications. These include pneumonia and abscesses by administrating medications and feeds. Perforation of the trachea and lung leading to tracheal esophageal fistula and pneumothorax respectively also can occur. It is imperative that NG tube placement is checked with an x-ray prior to anything being introduced through it or any doubt about its position. Other complications are rrhinitis, pharyngitis, sinusitis, nasopharyngeal ulcers and hoarseness.

Malposition

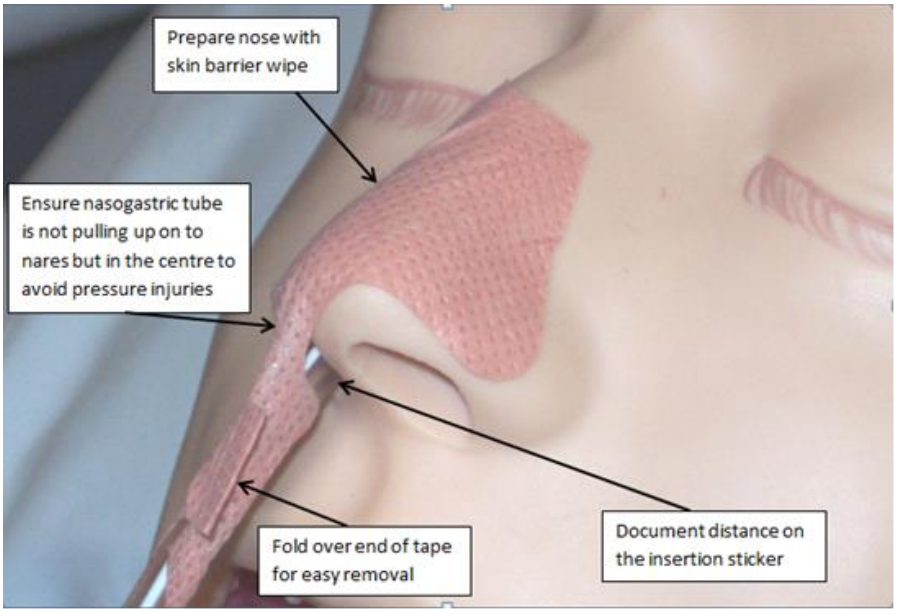
X-ray image of in-correct nasogastric tube position



If the patient can't speak, gags or coughs excessively during insertion may indicate malposition of the NG tube so pull back immediately until the patient settles then recommence insertion.

Nasal pressure injuries

Due to taping against the nares pressure injuries can result with associated deep tissue damage. Ensure when taping that the NG tube is not pulled up against the nares but in the centre. Regularly observe skin integrity and retape, refer to securing of the nasogastric tube below.



Cranial injury

Due to surgery or injury cribriform plate can be damaged leading to inadvertent intracranial intubation. A thorough history and/or suspicion of cribriform plate injury a NG tube is to be avoided.

Case Study

Marys Salem sump NG tube has just been replaced with a fine soft bore feeding tube as it has been in for 14 days. The person that inserted the soft bore feeding tube has removed the guidewire prior to x-ray and the x-ray indicates the tube's tip needs to be inserted further to be positioned in the stomach.

What is the correct action?

- ☐ Reinsert the guidewire while the soft bore feeding tube is insitu
- ☐ Remove and reinsert a new soft bore feeding tube and repeat x-ray
- ☐ Try to push the NG tube in further
- ☐ Notify radiology to repeat the x-ray

Mary after 4 weeks no longer required the soft bore feeding tube. After confirming the need for removal of the nasogastric tube was documented in patient's health record, you remove the feeding tube.

Removal of the Nasogastric Tube

The principles of removal of NG tube are similar to insertion and include:

- Patient Preparation
- Staff Preparation
- Equipment Requirements
- Adherence to procedure Steps
- Documentation of removal

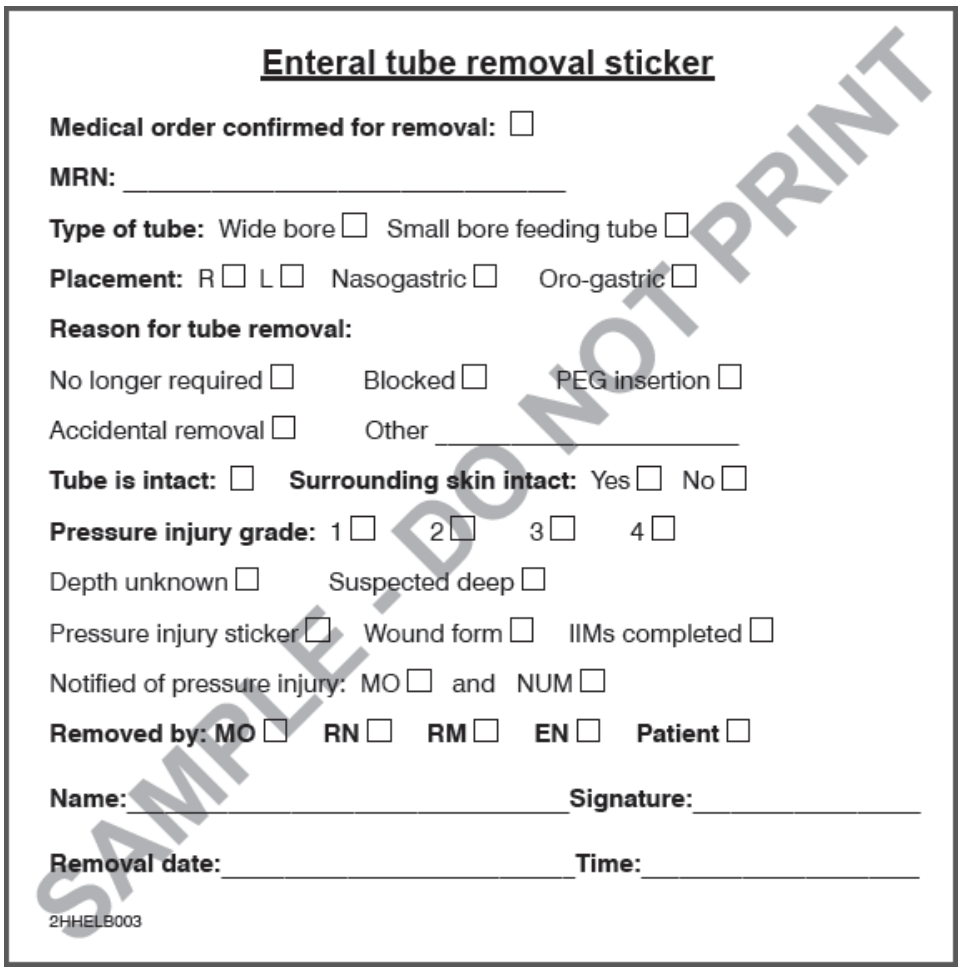
Activity 4:

Think about your responsibility when removing a NG tube:

- What equipment will you need?
- How will you assist the patient to minimise discomfort?

Reading: Removal of an Enteral Nasogastric Tube (Adult) HNELHD CP 18_10

Enteral tube removal sticker_2HHELB003



Enteral tube removal sticker

Medical order confirmed for removal: ☐

MRN: _____

Type of tube: Wide bore ☐ Small bore feeding tube ☐

Placement: R ☐ L ☐ Nasogastric ☐ Oro-gastric ☐

Reason for tube removal:

No longer required ☐ Blocked ☐ PEG insertion ☐

Accidental removal ☐ Other _____

Tube is intact: ☐ **Surrounding skin intact:** Yes ☐ No ☐

Pressure injury grade: 1 ☐ 2 ☐ 3 ☐ 4 ☐

Depth unknown ☐ Suspected deep ☐

Pressure injury sticker ☐ Wound form ☐ IIMs completed ☐

Notified of pressure injury: MO ☐ and NUM ☐

Removed by: MO ☐ **RN** ☐ **RM** ☐ **EN** ☐ **Patient** ☐

Name:_____**Signature:**_____

Removal date:_____**Time:**_____

2HHELB003

SAMPLE - DO NOT PRINT

Question

How is the removal of the soft bore feeding tube documented?

- ☐ No need to as it is already documented in the medical record
- ☐ Inform the consulting team
- ☐ Document removal on the Enteral tube removal label and place in the medical record
- ☐ Put a sticker on their nose stating soft bore feeding tube has been removed

Related Policy and Procedures Documents

NSW Health Policy Directive PD2011_015 Care Coordination: Planning from Admission to Transfer of Care in NSW Public Hospitals
NSW Health Policy Directive PD2009_060 Clinical Handover – standard key principles
Clinical Handover – Communication and Handover of Clinical Care 2009_060:PCP 2
Minimum Standards of Patient Care for Adult Inpatients HNELHD Pol 18_06
Oral Care for the Paediatric and Adult Patient (Non Intensive / High Dependency Care) HNELHD GandP 17_26
Oral Care for the Adult Intensive Care/Critical Care Unit Patient HNELHD GandP 17_31

Learning Package Evaluation

Please respond to the following questions:

1. The learning outcomes of the package were clearly identified and appropriate?	Yes	No
2. Was the content sufficient to meet to enable you to meet the learning outcomes?	Yes	No
3. The activities were interesting and supported the learning	Yes	No
4. The package was presented logically and the content was easy to follow and made sense.	Yes	No
5.The assessment process was clearly described	Yes	No

6. My most relevant learning(s) from this package were:

_____

_____

7. The learning('s) that I can immediately apply to practice are:

_____

_____

8. The least relevant component(s) of this package were:

_____

_____

9. Some suggestions I would make to improve the package would be:

_____

_____

10. Further comments:

_____

_____

Return to:
Insert {Contact name and details.}

Learning Package: Reflection on Learning

This document guides your reflection on the extent to which the package meets your professional development needs, and how you plan to apply your learning into practice. This tool is not part of the assessment process, and has been included as a document that you may wish to include in your professional portfolio.

Time taken to complete learning package:_____

What was your purpose in completing this learning package?

Did you achieve this by completing the learning package?

Reflecting on the content, what key learning have you obtained?

What learning will you apply to your practice immediately? How will you do this?

What learning needs have you identified as a result of completing this learning package?

How do you plan to address these needs?

Signature: _____Date:_____

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Appendix

Process for Assessment of clinical skills

- Insertion of a nasogastric tube is considered a (Level 1) high risk invasive procedure.
- Assessment of practice completes the training program for insertion and management of an Enteral Nasogastric tube. Undertaking this practice is determined by the clinicians individual and professional scope of practice.
- Complete and submit Learning Package for Enteral Nasogastric tube insertion and management.
- Observe at least one nasogastric tube insertion.
- Be supervised in inserting nasogastric tubes until assessed as clinically safe to complete the skill.
- Once requirements are completed, notify NUM/ manager to update scope of practice.
- Undergraduate medical nursing and midwifery students undertaking insertion of a nasogastric tube are to be supervised at all times.

Recognition of prior learning (RPL)

Where a clinician can demonstrate prior experience and skills in insertion of a nasogastric tube modification of the credentialing process can include the following:
Awareness of policies and guidelines relating to Enteral Nasogastric Tube Insertion (Adult) Enteral Feeding Tube Care HNELHD CG – Adult

Enteral Nasogastric Tube Insertion (Adult) HNELHD CP 18_15

Maintenance of skills/proficiency

Clinicians who have completed all phases of the insertion of a nasogastric tube program or have had RPL have a professional responsibility to maintain skills and seek learning opportunities when they no longer feel confident or have identified learning needs.