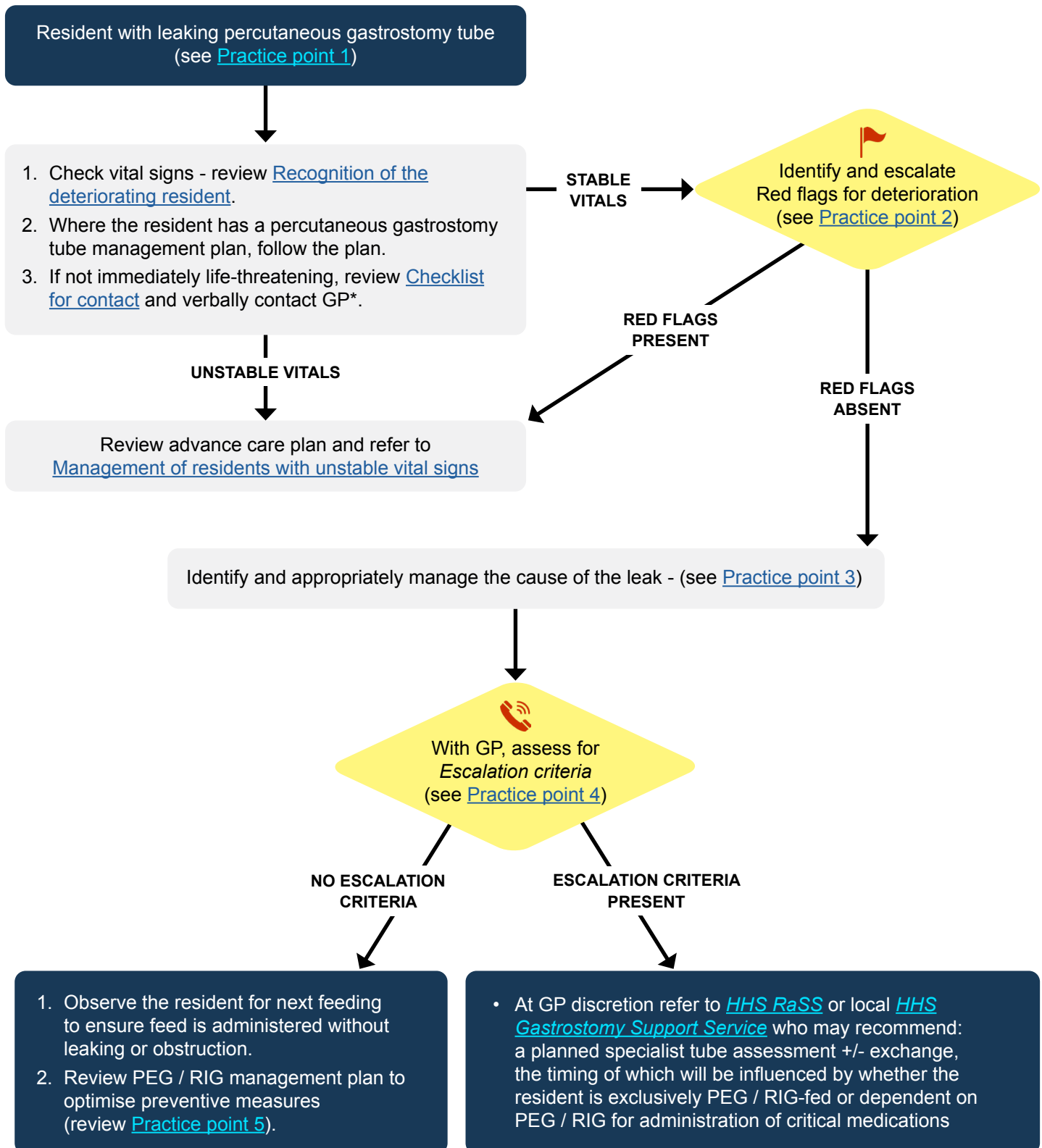


Percutaneous Gastrostomy tubes:

Trouble-shooting a leaking Percutaneous Endoscopic Gastrostomy (PEG) / Radiologically Inserted Gastrostomy (RIG)



*Where timely, arrange telehealth or face-to-face GP review

Percutaneous gastrostomy tubes: Trouble-shooting a leaking PEG / RIG practice points

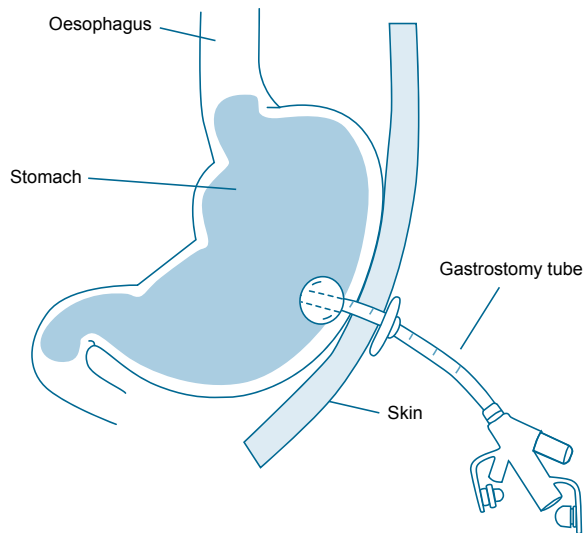
1) Recognising a leaking percutaneous gastrostomy tube (PEG / RIG)

Recognising a leaking percutaneous gastrostomy tube early may assist in successful management.

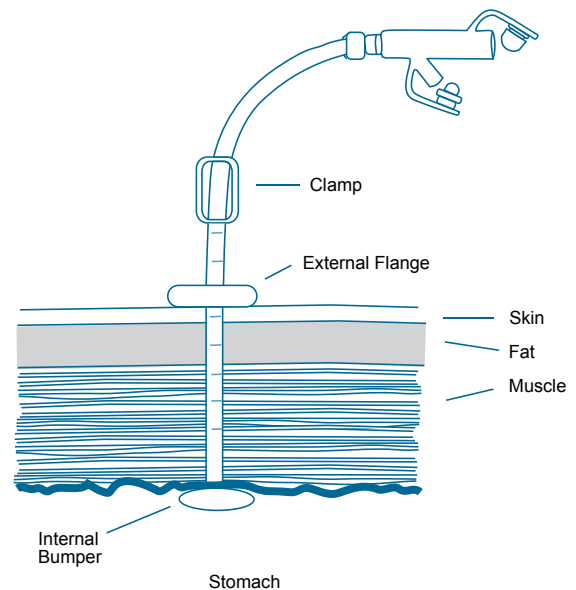
Suspect a leaking tube if there are any of the following:

1. Fluid secretions are seen to leak around the gastrostomy: test with a pH strip to determine if acidic (suggests gastric fluid - note if the resident is on a proton pump inhibitor such as pantoprazole or omeprazole gastric fluid may not be acidic on pH testing).
2. Skin around the gastrostomy is excoriated, red, irritated and / or oozing.

Placement of a ballooned gastrostomy tube



Cross-section: non-ballooned tube



NSW Agency for Clinical Innovation and the Gastroenterological Nurses College of Australia. A Clinician's Guide: Caring for people with gastrostomy tubes and devices from pre-insertion to ongoing care and removal. Sydney: ACI; 2015. Available from: https://aci.health.nsw.gov.au/_data/assets/pdf_file/0017/251063/ACI-Clinicians-guide-caring-people-gastrostomy-tubes-devices.pdf

2) Red flags for a leaking percutaneous gastrostomy tube (PEG / RIG)



If any of the following red flags are identified in residents who have a leaking percutaneous gastrostomy tube, review the resident's advance care plan, consult resident or substitute health decision maker (or nominated decision support person) and refer to [Management of residents with unstable vital signs pathway](#).

The following are considered red flags in the resident with a leaking percutaneous gastrostomy:

- Vital signs in the red or danger zone - refer to [Recognition of the deteriorating resident](#)
- Severe abdominal pain on attempting to flush gastrostomy tube or on administration of feeds (ensure that feed administration is ceased)
- Suspected bowel obstruction: abdominal distension, vomiting, lack of passage of flatus and bowel motions

Percutaneous gastrostomy tubes: Trouble-shooting a leaking PEG / RIG practice points

3) Assessment of the resident with a leaking percutaneous gastrostomy tube: cause of leak

Assess for cause of leaking percutaneous gastrostomy tube (PEG / RIG):

Domain	Identification		Management
Device	Tube damaged	<ul style="list-style-type: none">Inspect the tube for cracks, beading, or warpingFill an ENFit Enteral syringe with warm tap or sterile water. Attach to feeding port and gently flush the tube and check site of leak	Refer to HHS RaSS or HHS Gastrostomy support service
	Tube blocked	<ul style="list-style-type: none">Gently flush tube and assess for resistance / inability to flush	Refer to Percutaneous gastrostomy tubes: Trouble-shooting a blocked Percutaneous Endoscopic Gastrostomy (PEG) / Radiologically Inserted Gastrostomy (RIG)
	Inflation volume of retention balloon less than manufacturer guidance (for devices with balloon)	<ul style="list-style-type: none">Check the retention balloon volume against the volume recommended by the manufacturer and the resident's gastrostomy care planNote: Once water has been removed from the retention balloon there is high risk of tube dislodgement until the balloon is refilled – avoid this by taping the PEG bolster plate / external flange securely to the resident's skin to ensure that the tube does not accidentally dislodge during balloon check (remove tape after balloon check completed)	Ensure retention balloon volume is as recommended by manufacturer instructions: follow manufacturer instructions on how to do this
	Balloon rupture (for devices with balloon)	<ul style="list-style-type: none">Water withdrawn from the balloon should be clean and transparent – cloudy water may indicate balloon ruptureDiagnose a ruptured balloon by retesting balloon volume 2 to 4 hours from initial test	Refer to HHS RaSS or HHS gastrostomy service where balloon rupture is identified
	Stabilise the device	<ul style="list-style-type: none">Excessive traction or pulling on the device may cause leakage	Stabilise the device as per the resident's gastrostomy care plan and avoid traction / pulling on the device
	Fit of bolster plate / external flange	<ul style="list-style-type: none">Bolster or external flange should rest gently on the skin with only a 3 to 5 mm gap between skin and plate when gentle traction is applied – if it is too loose or too tight, leakage can occur	Check that the bolster / external flange is at the level recorded on the resident's gastrostomy plan; Note: Correct position of the bolster / external flange requires observation of the resident in both lying and sitting positions
	Buried bumper syndrome	Suspect if: <ul style="list-style-type: none">Tube is fixed (unable to push tube in and out: gentle traction should allow the external flange to be lifted 2 to 5 mm from skin)Abdominal pain and tenderness at siteIncreasing volumes of peristomal leakageBreakdown of skin at siteBleeding at PEG / RIG siteRecurrent peristomal infections	Refer to HHS RaSS or HHS Gastrostomy Support service
	Resident factors	Infection of PEG / RIG site	<ul style="list-style-type: none">Suspect if PEG / RIG site is surrounded by skin that is red, tender and there is purulent discharge (pus)
Delayed gastric emptying		<ul style="list-style-type: none">Suspect in residents with Parkinson disease, multiple sclerosis, diabetes, residents prescribed opioids or GLP1 analogues	<ul style="list-style-type: none">GP to review indication for opioids where these are prescribedGP to consider trial of a pro-kinetic agent, e.g. domperidone
Constipation		<ul style="list-style-type: none">Assess resident for constipation	Refer to the Constipation pathway on how to assess and manage constipation
Bowel obstruction		<ul style="list-style-type: none">GP to assess resident for potential bowel obstruction: abdominal distension, pain, vomiting and lack of passing of flatus / bowel motions	Where bowel obstruction is suspected, refer to Management of the Resident with unstable vital signs
Enlarged gastric fistula		<ul style="list-style-type: none">Residents who are very frail, nutritionally deplete and at risk of poor wound healing are at higher risk of an enlarged gastric fistulaThe risk of an enlarged fistula is higher if there is inappropriate lateral traction on the feeding tube, causing pressure on the wall of the tract	<ul style="list-style-type: none">Optimise resident nutrition and wound healingEnsure appropriate securing of the device, avoiding lateral traction
Rapid weight loss or weight gain		<ul style="list-style-type: none">Review resident weight charts to assess for rapid weight loss or weight gainAssess fit of the bolster to ensure that this remains appropriate	Refer to a dietitian

Percutaneous gastrostomy tubes: Trouble-shooting a leaking PEG / RIG practice points

4) Escalation criteria for a leaking enteral feeding tube (PEG / RIG)

First screen for red flags as above. Where there are no red flags, any of the following may prompt escalation to [HHS RaSS](#) (at GP discretion) or to the [HHS Gastrostomy Support Service](#):

1. Red flags in a resident who has conservative goals of care and does not wish to be transferred to hospital.
2. Tube appears damaged.
3. Suspected balloon rupture.
4. Progressively increasing volumes of peristomal leakage.
5. Breakdown of skin at site.
6. Bleeding at PEG / RIG site.
7. Recurrent peristomal infections.

5) Percutaneous gastrostomy tube management plan: prevention of tube leak

Percutaneous gastrostomy tube management plan should encompass the following actions to prevent tube leak and complications of a leak:

1. Implement daily gastrostomy care:
 - Clean site with mild soap and water thoroughly twice a day - dry after cleaning, with care to dry around the tube and under the bolster plate / external flange
 - Flush the tube a minimum of twice daily, before and after bolus feeds or every 4 hours if continuous feeds and before and after each medication
 - Rotate tube gently through 360 degrees (unless otherwise advised by the HHS Gastrostomy service)
 - Confirm tube position against gastrostomy care plan prior to use
 - Monitor for evidence of site leak / signs of infection
 - Protect peristomal skin with a barrier wipe such as Cavilon No-sting barrier film
2. Weekly checking of retention balloon volume as recommended by manufacturer instructions - balloon should be checked by those with an appropriate scope of practice and training.
3. Adequate stabilisation of the device and avoiding traction / pulling on the device.
4. Fit of the bolster plate / external flange, with 3 to 5 mm between the skin and the plate when gentle traction is applied: check fit with resident lying and sitting. The bolster plate / external flange should only be adjusted by those with an appropriate scope of practice and training.
5. Optimise the Resident's bowel assessment and management to prevent constipation as this is a frequent cause of leaking gastrostomy tubes.

Percutaneous gastrostomy tubes: Trouble-shooting a leaking PEG / RIG practice points

1. Pironi L, Boeykens K, Bozzetti F, Joly F, Klek S, Lal S, et al. ESPEN guideline on home parenteral nutrition. Clin Nutr. 2020;39(6):1645-66.
2. Boullata JI, Carrera AL, Harvey L, Escuro AA, Hudson L, Mays A, et al. ASPEN Safe Practices for Enteral Nutrition Therapy [Formula: see text]. JPEN J Parenter Enteral Nutr. 2017;41(1):15-103.
3. PEG and PEG-J insertion and ongoing management. Princess Alexandra Hospital, Metro South Health; 2020.
4. Roveron G, Antonini M, Barbierato M, Calandrino V, Canese G, Chiurazzi LF, et al. Clinical Practice Guidelines for the Nursing Management of Percutaneous Endoscopic Gastrostomy and Jejunostomy (PEG/PEJ) in Adult Patients: An Executive Summary. J Wound Ostomy Continence Nurs. 2018;45(4):326-34.
5. Boeykens K, Duysburgh I, Verlinden W. Prevention and management of minor complications in percutaneous endoscopic gastrostomy. BMJ Open Gastroenterol. 2022;9(1).
6. Dandele LM, Lodolce AE. Efficacy of agents to prevent and treat enteral feeding tube clogs. Ann Pharmacother. 2011;45(5):676-80.
7. Ley D, Saha S. Everything that You Always Wanted to Know About the Management of Percutaneous Endoscopic Gastrostomy (PEG) Tubes (but Were Afraid to Ask). Dig Dis Sci. 2023;68(6):2221-5.
8. Sealock RJ, Munot K. Common Gastrostomy Feeding Tube Complications and Troubleshooting. Clin Gastroenterol Hepatol. 2018;16(12):1864-9.
9. NSW Agency for Clinical Innovation and Gastroenterological Nurses College of Australia. A Clinicians Guide: caring for people with gastrostomy tubes and devices from pre-insertion to ongoing care and removal. 2015. https://aci.health.nsw.gov.au/_data/assets/pdf_file/0017/251063/ACI-Clinicians-guide-caring-people-gastrostomy-tubes-devices.pdf accessed 2/2024.
10. Ghevariya VP, V.; Momeni, M.; Krishnaiah, M.; Anand, S. Complications associated with percutaneous endoscopic gastrostomy tubes. Annals of Long-term care. 2009.

Percutaneous gastrostomy tubes: Trouble-shooting a leaking PEG / RIG version control

Pathway	Percutaneous Gastrostomy tubes: Trouble-shooting a leaking Percutaneous Endoscopic Gastrostomy (PEG) / Radiologically Inserted Gastrostomy (RIG)				
Document ID	CEQ-HIU-FRAIL-00026	Version no.	3.0.0	Approval date	12/04/2024
Executive sponsor	Executive Director, Healthcare Improvement Unit				
Author	Improving the quality of care and choice of care setting for residents of aged care facilities with acute healthcare needs steering committee				
Custodian	Queensland Dementia, Ageing and Frailty Clinical Network				
Supersedes	PEG tube: trouble shooting a leaking tube v 2.0.0				
Applicable to	Residential aged care facility registered nurses and General Practitioners in Queensland RACFs, serviced by a RACF acute care support service (RaSS)				
Document source	Internal (QHEPS) and external				
Authorisation	Executive Director, Healthcare Improvement Unit				
Keywords	PEG tube complications, RIG tube complications, Leaking PEG, Leaking RIG, percutaneous endoscopic gastrostomy tube leakage				
Relevant standards	Aged Care Quality Standards: Standard 2: ongoing assessments and planning with consumers Standard 3: personal care and clinical care, particularly 3(3) Standard 8: organisational governance				