Feeding by Nasogastric Tube

**Target group:** Nursing students **Recommended number of participants:** 1-2 learners

**Simulation time:** 10 minutes **Debriefing time: 20 minutes**

# Curricular Information

## Learning Objectives

**After completion of the simulation and debriefing session, learners will able to:**

* Demonstrate appropriate safety precautions for a patient receiving fluid nutrition by tube administration
* Explain procedures to the patient using an appropriate communication framework
* Demonstrate ability to administer fluid nutrition via a nasogastric tube
* Assess and document patient intake

## Scenario Outline

In this scenario a 65-year-old female is in the surgical unit, one day post-operative after having a small tumor in the esophagus removed. She has a nasogastric tube in place, as she is currently receiving only fluid nutrition administered by tube. The learners are expected to take appropriate safety precautions, explain the procedures to the patient using an appropriate communication framework, aspirate and assess gastric content, administer fluid nutrition, and document intake and output.

## Debriefing

When the simulation is over, it is recommended that a facilitator-led debriefing be completed to discuss topics related to the learning objectives. The Event Log in Session Viewer provides suggested debriefing questions. Central discussion points could be:

* Safety precautions for a patient receiving fluid nutrition by tube
* Management of nasogastric feeding
* Communication with the patient

## Suggested References

Ferrie S, Daniells S, Gagnon S, et al. *Enteral nutrition manual for adults in health care facilities*. Dietitians Association of Australia. 2015. Retrieved from <https://daa.asn.au/wp-content/uploads/2015/04/Enteral-nutrition-manual-January-2015.pdf>

Pearce CB, Duncan HD. *Enteral feeding.* Nasogastric, nasojejunal, percutaneous endoscopic gastrostomy, or jejunostomy: Its indications and limitations. Postgraduate Medical Journal. 78(918):198-204. May 2002. doi: 10.1136/pmj.78.918.198

# Setup and Preparation

## Equipment

* Blood pressure cuff
* Patient gown
* Patient ID bracelet with name and date of birth
* Patient monitor
* Simulated standard fluid nutrition 1.2 kcal/mL
* Simulated stomach content, 50 mL
* SpO2 probe
* Hand hygiene station
* Stethoscope
* Tube feeding supplies - per local protocol (nasogastric tube 16 Fr and nasogastric feeding tube 12 Fr are recommended)
* Water for irrigation and hydration
* Universal precautions equipment

## Preparation Before Simulation

* Place 50 mL of simulated stomach content into the stomach reservoir.
* Insert a nasogastric tube into the patient stomach reservoir at a depth of 55 cm.
* Dress the simulator in a patient gown and place it in a hospital bed in Fowler’s position.
* Attach patient ID bracelet with name and date of birth.
* Print the patient chart from page 4 and hand it out to the learners after reading the learner brief to them. If you use an electronic patient chart, you can transfer the information to this system.

## Learner Brief

*The learner brief should be read out loud to the learners before the simulation starts.*

**Situation:** You are a nurse in a surgical unit and the time is now 11:00. You are caring for Mary West, a 65-year-old female who is one day post-operative after having a small tumor in the esophagus surgically removed.

**Background:** The patient had increasing discomfort and trouble swallowing over the past few weeks due to a benign tumor in the esophagus.

**Assessment:** The patient was assessed 3 hours ago, and all vital signs were within normal range. Pain was rated 3 and the patient did not request pain medication. She has a nasogastric tube in place, as she is currently receiving only fluid nutrition administered by tube. Tube depth has been steady at 55 cm. A fluid nutrition bolus of 340 mL was administered 3 hours ago, and 2 hours ago 250 mL water was administered. Residual volume was minimal both times.

**Recommendation:** She is due for a fluid nutrition bolus. Please take a few minutes to review her chart (hand out chart to learners) and then go see the patient.

# Customization of the Scenario

The scenario may form the basis for creating new scenarios with other or additional learning objectives. Making changes to an existing scenario requires careful consideration of what interventions you expect the learners to demonstrate, and what changes you will need to apply to learning objectives, progression of scenario, programming and support material. It is, however, a quick way to increase your pool of scenarios because you can reuse much of the patient information and several elements in the scenario programming and support material.

For inspiration, here are some suggestions on how this scenario can be customized:

|  |  |
| --- | --- |
| New Learning Objectives | Changes to the Scenario |
| Include learning objectives about using therapeutic communication and clinical reasoning skills. | Have the patient express discomfort with the procedure; for example, stomach cramps or nausea.  The patient should complain about the discomfort she is experiencing until the learners have taken appropriate actions to alleviate the discomfort, including using therapeutic communication skills. |
| Include learning objectives about recognizing dehydration and taking appropriate actions. | Have the patient show signs of dehydration; for example, slightly lowered blood pressure and amber-colored urine, and have the patient complain of thirst, fatigue, and dizziness. The intake and output sheet should also be adjusted to indicate dehydration.  The patient should complain about these symptoms until the learners take appropriate actions to hydrate the patient. |
| Include learning objectives about using clinical reasoning skills, including taking appropriate safety measures. | Fill the stomach reservoir with a larger residual volume from the previous feeding (note: the stomach can hold up to 500 mL).  The patient should not feel hungry and could be complaining about acid reflux. If the learners do not recognize the larger residual volume or do not take necessary safety precautions, the patient could make more remarks about feeling stuffed. |
| Include learning objectives about using clinical reasoning skills, including taking appropriate safety measures. | Change the stomach content to look like coffee grounds, to indicate bleeding in the stomach.  The patient may or may not show any symptoms. If the learners do not recognize the bleeding and take appropriate safety measures, the patient could ask if everything looks OK and complain about weakness or dizziness. |
| Include learning objectives about using communication skills and clinical knowledge. | Have the patient be unfamiliar with the procedure, to prompt the learners to provide patient education and answer questions.  The patient should ask relevant questions in accordance with the information that the learners provide. |

# Patient Chart

|  |  |
| --- | --- |
| **Patient name:** Mary West **Gender:** Female **Allergies:** No known allergies **DOB:** 18/10-XXXX | |
| **Age:** 65 years **Height:** 170 cm (67 in.) **Weight:** 61 kg (134 lb.) **MRN:** 00156330 | |
| **Diagnosis:** Benign tumor in esophagus **Adm date:** Yesterday | |
| **Facility:** Surgical unit **Advance directive:** No  **Isolation precautions:** None | |
|  | |
| |  | | --- | | **Past Medical History**  Increasing discomfort and trouble swallowing over the past few weeks due to a benign tumor in the esophagus. One day post-operative after having a small tumor in the esophagus surgically removed.  Appendectomy 15 years ago. | | |
|  | |
| **Notes** | |
| **Date/Time** |  |
| Yesterday | Patient transferred to unit from PACU. Nasogastric feeding tube in place.  Tube depth: 55 cm. Vital signs obtained /RN |
| Today, 08:00 | Patient rates pain 3, patient does not request pain medication. Residual volume of 40 mL returned. Fluid nutrition bolus (340 mL) administered via tube. Tube depth: 55 cm. Hydration status OK /RN |
| Today, 09:00 | Fluid bolus (250 mL) administered via tube. Residual volume of 110 mL returned. Tube depth: 55 cm. Hydration status OK /RN |
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| **Provider Orders** | |
| Activity: Out of bed as tolerated | |
| Diet: Fluid nutrition via nasogastric tube administration:  Administer 340 mL standard fluid nutrition 1.5 kcal/mL over 30 minutes, 5 times a day evenly dispersed, during waking hours.  Administer 250 mL water, 5 times a day evenly dispersed, during waking hours. | |
| Vital signs every 4 hours | |
| Asses hydration status every 4 hours | |
| Record intake and output | |
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| **Medical Administration Record** | |
| **Date/Time** |  |
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|  | |
| **Vital Signs** | |
| **Date/Time** |  |
| Today, 08:00 | **BP:** 135/85 mmHg **HR:** 85/min **RR:** 15/min **SpO2:** 99% **Temp:** 37.0oC (98.6oF) |
|  | **BP:**  **HR:** **RR:** **SpO2:** **Temp:** |

# Intake & Output

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Patient name:** Mary West **Gender:** Female **Allergies:** No known allergies **DOB:** 18/10-XXXX | | | | | | | | | | |
| **Age:** 65 years **Height:** 170 cm (67 in.) **Weight:** 61 kg (134 lb.) **MRN:** 00156330 | | | | | | | | | | |
| **Diagnosis:** Benign tumor in esophagus **Adm date:** Yesterday | | | | | | | | | | |
| **Facility:** Surgical unit **Advanced directive:** No  **Isolation precautions:** None | | | | | | | | | | |
|  | | | | | | | | | | |
| **Notes:** | | | | | | | | | | |
|  | **Intake** | | | | | **Output** | | | | |
| **Time/Date** | **Oral** | **NG** | **IV** | **IVPB** | **Other** | **Urine** | **Emesis** | **NG** | **Drains**  **type** | **Other** |
| **23-07** |  | 340 mL  250 mL |  |  |  | 270 mL |  |  |  |  |
| **Shift total** |  | 590 mL |  |  |  | 270 mL |  |  |  |  |
| **Time/Date** | **Oral** | **NG** | **IV** | **IVPB** | **Other** | **Urine** | **Emesis** | **NG** | **Drains**  **type** | **Other** |
| **07-15** |  | 340 mL  250 mL |  |  |  | 250 mL |  |  |  | 350 mL |
| **Shift total** |  |  |  |  |  |  |  |  |  |  |
| **Time/Date** | **Oral** | **NG** | **IV** | **IVPB** | **Other** | **Urine** | **Emesis** | **NG** | **Drains**  **type** | **Other** |
| **15-23** |  |  |  |  |  |  |  |  |  |  |
| **Shift total** |  |  |  |  |  |  |  |  |  |  |
| This is a worksheet to be used at the bedside to keep track of each intake and output. The totals will then be recorded on the 24 Hour Fluid Balance Sheet | | | | | | | | | | |
| **Fluid measurements:** 1 cc = 1 mL • 1 ounce = 30 mL • 8 ounces = 240 mL • 1 cup = 8 ounces = 240 mL  • 4 cups = 32 ounces = 1 quart or 1 liter = 1000 mL | | | | | | | | | | |