SCRIPT

CONFUSION AND SPEECH IMPAIRMENT

SCENARIO #648

NAME
MARY BOYLE

SPECIALTY
Neurology

SCENARIO DIFFICULTY
INTERMEDIATE

SIMULATION ENVIRONMENT
PRE HOSPITAL

TARGET
Paramedics

This patient is not a real patient and the clinical case, while clinically plausible, is fictional.

BODY INTERACT™
CLINICAL EDUCATION

Scenario

General description of the scenario info. Corresponds to the initial information presented to the trainee when selecting this scenario.

Title
Confusion and speech impairment

Context
Mrs. Boyle is normally fit and well. Today, after an office dinner out, she returned back home and her husband found her on the living floor very confused.

Briefing
Female, 33 years old. Was found collapsed on the floor confused and with slurred speech after returning from dinner with some company colleagues. Her husband called Emergency Medical Services. On arrival, he reports that he last saw her well three hours ago, before she left home.

General learning objective
In this scenario, the learner should:
Identify acute stroke.
Perform neurological assessments through stroke screening (FAST, FAST-ED, or race scale).
Evaluate eligibility for transport to a stroke center.

Specific learning objectives
Important when questioning the patient:
Characterize the main complaints (confusion and slurred speech) and determine the onset time
Ask about similar situations in the past, further co-morbidities, regular medication, alcohol or smoking habits

Fundamental in ABCDE:
Perform vital signs vigilance in acute care (blood glucose, blood pressure, oxygen saturation)
Evaluate the presence of stroke mimics
Apply stroke screening (FAST, FAST-ED, race scale) and search for neurological deficits

About the treatment:
Pre-notify stroke unit
Employ the correct decision for transportation (hospital, stroke ready hospital, or comprehensive hospital)

Environment
Pre Hospital

Specialty
Neurology

Difficulty
Intermediate

Editors
Angels Initiative

Patient characteristics

Characterization of the patient's demographic, habits, behavior and specific status effects.

Avatar

First name
Mary

Last name
Boyle

Age (years)
33

Gender
Female

Race/Ethnicity
Caucasian

Hair color
Dark blonde

Eye color
Blue

Smoker
No

Conscious
Yes

Sedated
No

Confused
Yes

Agitated
No

Last meal over 2h
Yes

Facial palsy
0

Speech impairment
Yes

Patient parameters

These parameter values are used by the simulator to initialize this scenario.

Systolic arterial blood pressure (mmHg)
145

Diastolic arterial blood pressure (mmHg)
85

Heart rate (bpm)
95

O2 saturation (%)
91

Respiratory rate (/min)
20

Blood glucose (mg/dL)
90

Temperature (ºC)
36.7

Hemoglobin (g/dL)
14

Urinary output (mL/kg/h)
0.8

Weight (kg)
62

Height (cm)
174

BMI
20.5

Potassium (mEq/L)
4.1

Sodium (mEq/L)
133

ABCDE assessment

The items below characterize the patient's physical examination and monitoring findings on admission.

Airway		
Airway observation	Not a priority	Airway is open, not obstructed and safe.
Breathing		
O2 Sat (%)	1st Priority	91 %
Pulmonary auscultation	2nd Priority	Clear to auscultation.
Respiratory rate (breath/min)	1st Priority	20 /min
Circulation		
Blood pressure (mmHg)	1st Priority	145/85 mmHg
Capillary refill time (seconds)	2nd Priority	1 second
Heart auscultation	2nd Priority	Regular rate and rhythm.
Heart rate (bpm)	1st Priority	95 bpm
Pulse palpation	Not a priority	Central - Amplitude: normal; Rhythmic; Peripheral - Amplitude: normal; Rhythmic.
Disability		
Blood glucose (mg/dL)	1st Priority	90 mg/dL
Glasgow Coma Scale	1st Priority	13 (E-3; V-4; M-6)
Pupil light reflex	2nd Priority	Right eye: 4 mm; Right eye light: 2 mm; Left eye light: 7 mm Left eye: 7 mm; Right eye light: 2 mm; Left eye light: 7 mm

Exposure

Abdominal palpation	Not a priority	No rigidity. No pain. No guarding or signs of peritoneal irritation. No masses or palpable organomegalies.
Temperature (°C)	1st Priority	36.7º

Dialogues

This is a complete list of all the possible dialogue lines both by the health practitioner (on the left) and respective responses by the patient (on the right).

Medical condition

01. Can you tell me your name and your age?	1st Priority	Ahmm.. Mary...
02. What happened to you?	1st Priority	I don't know... with some friends.
03. Are you feeling any pain?	1st Priority	I... terrible... heeadache.
04. When did you last feel well?	1st Priority	My husbaaand... where is he?
05. Did you lose your senses?	2nd Priority	I dooon't... remeeember.
06. Do you have any health issues?	2nd Priority	No.
07. Are you having any problems with your eyesight?	2nd Priority	I doooon't...

08. Do you feel any weakness in your limbs?	1st Priority	I don't... think so...
09. How are you in terms of mobility?	2nd Priority	I caaaan... I just... need to reest.

Medication

10. Are you taking any medication?	1st Priority	Where... am I?
11. Have you started any new medication?	2nd Priority	Ahmm... nooo.

Nutrition

12. When was the last time that you had something to eat?	1st Priority	I caaan't remeeember....

Risk factors

13. Do you have any allergies?	2nd Priority	No.
14. Do you use any illicit drugs?	2nd Priority	No.
15. Do you smoke?	2nd Priority	No.

16. Do you drink with meals?

Maybeeee....

2nd Priority

17. Have you been under any stress lately?

Ahmm, I don't know...

Not a priority

Diagnostic strategies

The items below characterize the test results that are possible during this scenario, including rules that may condition test results.

Decision aids

FAST scale — 1st Priority — i.1

Facial droop: Both sides of the face move equally
Arm drift: One arm drifts compared to the other
Speech: Slurred and inappropriate words

FAST-ED scale — 1st Priority — i.1

Facial droop: 0 - Both sides of the face move equally
Arm weakness: 1 - One arm drifts down <10 seconds
Speech: 1 - Speech content clearly abnormal or names 1-2 items correctly
Receptive aphasia: 1 - Patient does not understand e.g does not show two fingers
Gaze deviation: 0 - No deviation, eyes move to both sides equally
Denial: 0 - Patient is weak and recognize it
Neglect: 0 - Patient recognize his/her weak arm
Total score: 3 - Immediate transport to the closest stroke ready hospital

Race scale — 1st Priority — i.1

Facial palsy: 0 - Facial move is normal, symmetric
Arm motor function: 1 - Maintain the arm against gravity <10 seconds
Leg motor function: 1 - Maintain the leg <5 seconds

		Head and gaze deviation: 0 - Absent Agnosia/Negligente: 0 - There is no asomatognosia nor anosognosia Aphasia/ Language: 1 - Perfom one task correctly Total score: 3

Electrophysiology

12-Lead ECG	2nd Priority	Sinus rhythm.

Notes

NOTE: Decision aids FAST, FAST-ED or Race scale will be scored if the user performs one of the three.

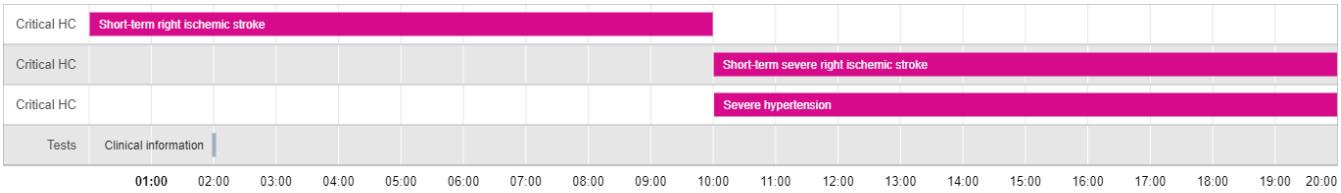
Initial notifications

Initial notifications presented to the trainee after a specified amount of time after starting the simulation

Medical test	Time	
Clinical information	02:00	Comprehensive Stroke Center | 30 minutes away Hospital | 10 minutes away Stroke Ready Hospital | 20 minutes away

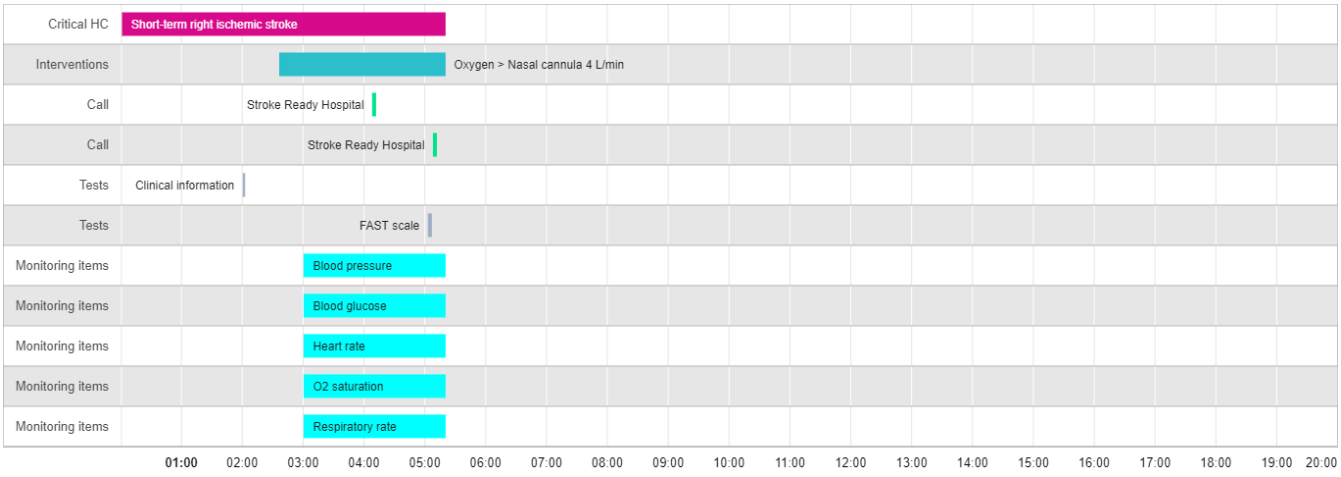
Baseline

This section is automatically generated and predicts scenario behavior assuming no actions by the trainee, which usually represents the worst-case scenario.



Optimal clinical approach

This section previews how the optimal approach resolves the scenario successfully. Comparison with Baseline may be useful to understand the scenario behavior.



Health conditions

This section characterizes the illnesses, or health conditions, the patient may be afflicted with in this scenario. These serve important foundational purposes in the scenario, as they can be used to: affect what the patient says in dialogues; influence how the patient deteriorates over time; condition examination, medical test and call results; and determine the adequate clinical approach required to solve the case successfully.

Critical health conditions

Severe hypertension

Description: Severely high blood pressure. Does not directly lead to other conditions.
Solution: Antihypertensive or vasodilator.

Short-term right ischemic stroke

Description: Moderate blockage of a blood vessel in the right brain, with an onset less than 4h30m ago. After some time leads to severe short duration right ischemic stroke.
Solution: Alteplase, as long as within therapeutic window; and thrombectomy.

Short-term severe right ischemic stroke

Description: Severe blockage of a blood vessel in the right brain, with an onset less than 4h30m ago. Does not directly lead to other conditions.
Solution: Alteplase, as long as within therapeutic window; and thrombectomy.

Treatment priorities

Treatment items that are considered necessary or adequate to solve this scenario are listed below. Notes: 1st Priority - mandatory items to solve the case successfully. 2nd Priority - optional items that are considered adequate, but are not essential. Not a Priority - unnecessary items that are considered inadequate or a waste of time.

i.2 - Call - Stroke Ready Hospital	1st Priority	Initial: Please gather more information regarding the patient's status and contact again.
Call > Stroke Ready Hospital		After stroke screening: The stroke team was notified.
i.3 - Interventions - Oxygen therapy	1st Priority	Due to sats lower than 95%
Interventions > Oxygen > High flow mask		
Interventions > Oxygen > Non-rebreathing mask		
Interventions > Oxygen > Nasal cannula		

i.32 - Call - Hospital Call > Hospital	Not a priority	After stroke sreening: We are not ready to receive and treat stroke patients.
i.33 - Interventions - IV peripheral catheter Interventions > Catheters & tubes > IV peripheral catheter	2nd Priority	
i.34 - Fluids & Electrolytes Medications > Fluids & Electrolytes > Fluids IV - Crystalloid	2nd Priority	
i.40 - Call - Comprehensive Stroke Center Call > Comprehensive Stroke Center	Not a priority	After stroke sreening: The patient's condition does not require transfer to a Comprehensive Stroke Center.

Differential diagnosis

Multiple choice question presented to the trainee in order to confirm whether they got the diagnosis right.

Question	What is the most likely diagnosis?
Correct answer	Acute ischemic stroke
3 Incorrect answers	Hypoglycemia
	Epileptic fit
	Drug intoxication

Ending messages

Feedback messages presented to trainees for particular successful or failed approaches and the respective conditional rules that trigger these messages.

Title	Type	Message	Conditional
Send patient to Hospital OR Comprehensive Stroke Center	**Failure**	This is the end of your virtual simulation scenario. Following the suspected stroke, the patient should have been	If Call Hospital OR Call Comprehensive hospital is requested, the case will end in failure.

		transferred to the nearest stroke center.
Stroke screening and send patient to Stroke Center	**Success**	Your practice meets the guidelines' requirements.

References

1. Powers WJ, Rabinstein AA, Ackerson T, et al. 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. *Stroke*. March 2018.

2. Lima Fabricio O., Silva Gisele S., Furie Karen L., et al. Field Assessment Stroke Triage for Emergency Destination. *Stroke*. 2016;47(8):1997-2002.

3. Pérez de la Ossa Natalia, Carrera David, Gorchs Montse, et al. Design and Validation of a Prehospital Stroke Scale to Predict Large Arterial Occlusion. *Stroke*. 2014;45(1):87-91.