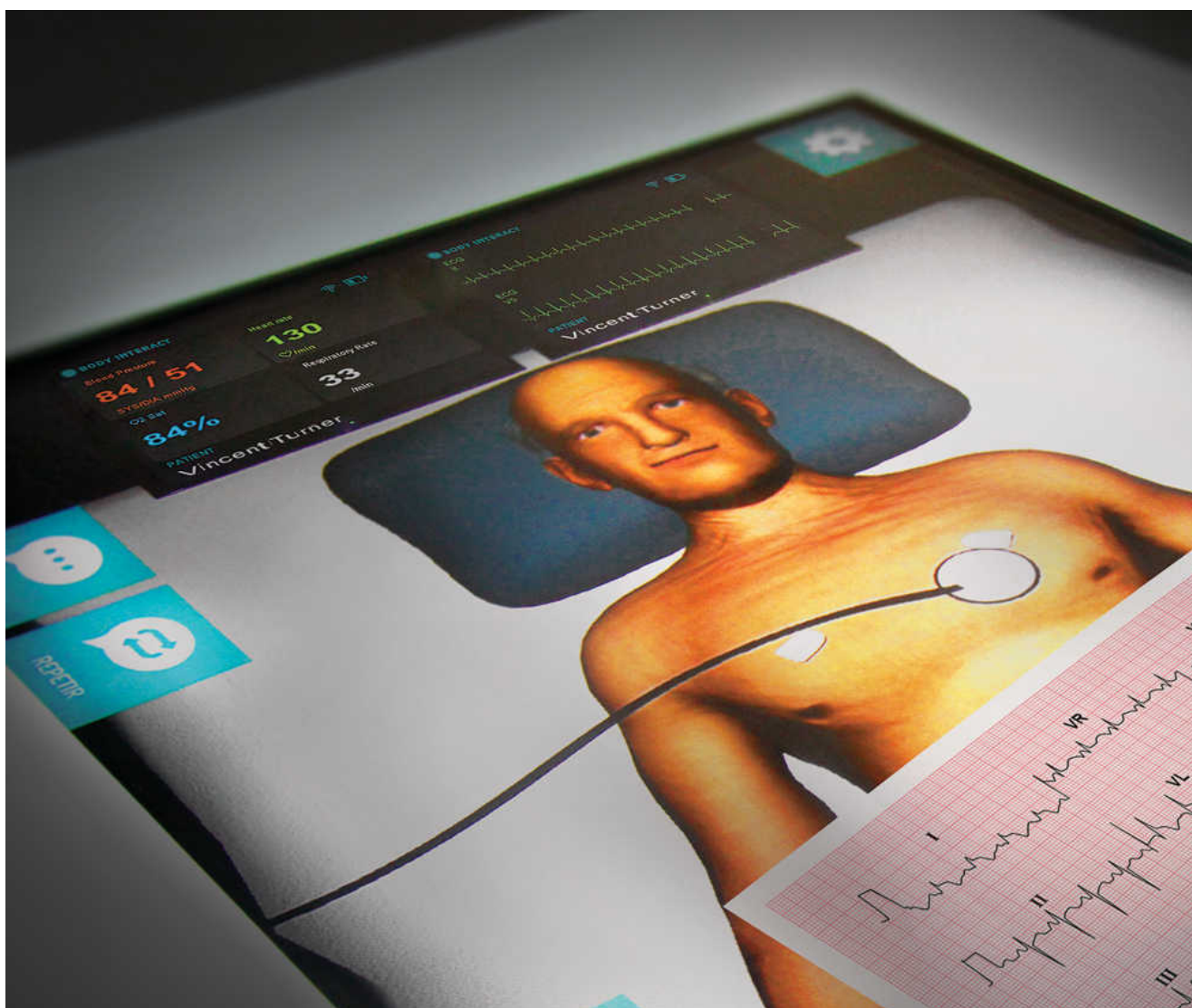


BODY INTERACT™

CLINICAL REASONING EDUCATION



SCENARIO 32 - IRENE CORNELL

MEDICAL CATEGORY: NEUROLOGY

CASE DIFFICULTY: ADVANCED

SIMULATION ENVIRONMENT: EMERGENCY ROOM

These patients are not real patients and their clinical cases, whilst clinically plausible, are fictional.

Case 32
Irene Cornell

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OVERVIEW



CONTEXT		When taking care of her grandchildren, Irene suddenly felt difficulty in moving her right arm. Her family also noticed she had facial asymmetry and was not talking properly.	
BRIEFING		Female, 72 years old. Sudden onset of speech impairment and right-sided weakness three hours ago. No previously known health conditions or medication.	
LEARNING OBJECTIVES	GENERAL	Recognize acute stroke	
	SPECIFIC	Start vital signs vigilance in acute care; Performance of neurological assessments (NIHSS); Blood pressure management in acute stroke; Knowledge of contraindications to alteplase.	
PATIENT CHARACTERIZATION		Patient name:	Irene Cornell
		Age (years):	72
		BMI:	28.7 (overweight)
		Sex:	Female
		Weight (kg):	80
		Height (cm):	167
		Weight (lb):	176
		Height (in):	66
		Chronic conditions:	Hypertension.

Notes: These patients are not real patients and their clinical cases, whilst clinically plausible, are fictional.

ABCDE ASSESSMENT

CATEGORY	PARAMETERS	EVALUATION	PRIORITY
AIRWAY	Breath sounds	Normal	1st Priority
	Airway observation	clear	1st Priority
BREATHING	Signs of respiratory distress	Tachypnea	1st Priority
	Respiratory rate	32/min	1st Priority
	Chest excursion	Tachypnea	1st Priority
	Chest deformity, raised JVP, chest drains	Normal	1st Priority
	O2 Sat	88%	1st Priority
	Chest percussion	Right: 1R- resonance; 2R- resonance; 3R- resonance; 4R- resonance; 5R- dullness. Left: 1L- resonance; 2L- resonance; 3L- superficial cardiac dullness; 4L- superficial cardiac dullness; 5L- resonance.	Not a Priority
	Chest palpation	2L- normal; 2R- normal	Not a Priority
	Pulmonary auscultation	Normal	2nd Priority
CIRCULATION	Hands and digits	Pink and warm	1st Priority
	Heart rate	130 bpm	1st Priority
	Peripheral pulses	Carotid- strong and regular; Radial- strong and regular, equal on both sides; Femoral- strong and regular, equal on both sides; Dorsalis pedis- strong and regular, equal on both sides.	Not a Priority
	Blood pressure	215 / 110 mmHg	1st Priority
	Capillary refill time (CRT)	1.3 seconds	Not a Priority
	Heart auscultation	Normal	2nd Priority
	Urinary output	139 mL/kg/h / 11120 mL/h	2nd Priority
DISABILITY	External hemorrhage (wounds), drains, concealed hemorrhage	No	2nd Priority
	Pupils (size, equality and reaction to light)	Equal and reactive to light	2nd Priority
	Level of consciousness (Glasgow Coma Scale)	12 (E4-V3-M5)	2nd Priority
	Blood Glucose	112 mg/dL / 6.216 mmol/L	1st Priority

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EXPOSURE	<i>Full body (front)*</i>	Normal	Not a Priority
	<i>Full body (back)*</i>	Normal	Not a Priority
	Abdomen percussion	6R- tympanic; 7R- tympanic; 6L- tympanic; 7L- tympanic.	Not a Priority
	Abdomen palpation	Soft, depressible, painless. No visceromegaly.	Not a Priority
	Temperature	36.3 °C / 97.34 °F	2nd Priority

* In the current version of the case, these procedures are not implemented.

Clinical Information

Source:	Emergency medical team report
Previous medication:	Family member informed that patient does not take any medication.
Other information:	Onset of speech impairment, drowsiness and right sided weakness 3 hours ago.
Note:	This information will appear automatically 3 minute after the start of the simulation.

DIALOGUES

Specification of dialogues with the patient during simulation:

PATIENT PRESENTS BROCA APHASIA DUE TO STROKE						
CATEGORY	Question Availability	#	QUESTION	PATIENT REPLY	REPLY CONDITIONAL	PRIORITY
Medical condition	-	1	How are you feeling?	Boo... streen...	-	1st Priority
	After question 1 is asked	2	What happened to you?	Remeen... leeff...	-	1st Priority
	-	3	Tell us about any health conditions you might have.	Diabee...know..	-	2nd Priority
	-	4	Feeling pain?	Stree... boo...	-	1st Priority
	-	5	Do you have diabetes?	Haavv... laa...	-	1st Priority
	-	6	Any recent weight changes?	Boo... streen...	-	Not a Priority
	-	7	History of severe illness?	Remeen... leeff...	-	2nd Priority
	After question 2 is asked	8	Time since symptom onset?	Diabee...know..	-	1st Priority
Medication	-	9	Do you have any allergies?	Stree... boo...	-	2nd Priority
	-	10	Taking any medication?	Haavv... laa...	-	1st Priority
Nutrition	-	11	Medication side-effects present?	Boo... streen...	-	2nd Priority
	-	12	Describe your diet.	Remeen... leeff...	-	Not a Priority
	-	13	Last time you ate?	Diabee...know..	-	Not a Priority
	-	14	What did you eat last time?	Stree... boo...	-	Not a Priority
	-	15	Snacks between meals?	Haavv... laa...	-	Not a Priority
Activity	-	16	Do you take dietary supplements?	Boo... streen...	-	Not a Priority
	-	17	Have there been changes in appetite?	Remeen... leeff...	-	Not a Priority
	-	18	How much do you walk each day?	Diabee...know..	-	Not a Priority
	-	19	What were you doing when you felt ill?	Stree... boo...	-	2nd Priority
Risk factors	-	20	Physical effort at time of event?	Haavv... laa...	-	Not a Priority
	-	21	Recently under stress?	Boo... streen...	-	2nd Priority
	-	22	Frequency of alcohol consumption?	Remeen... leeff...	-	Not a Priority
	-	23	Do you have high blood pressure?	Stree... boo...	-	2nd Priority
	-	24	High cholesterol present?	Haavv... laa...	-	2nd Priority
	-	25	Are you a smoker?	Boo... streen...	-	2nd Priority

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PATIENT IS NORMAL						
CATEGORY	Question Availability	#	QUESTION	PATIENT REPLY	REPLY CONDITIONAL	PRIORITY
Medical condition	-	1	How are you feeling?	I feel the right half of my body weak.	-	1st Priority
	After question 1 is asked	2	What happened to you?	Suddenly I couldn't move my right arm.	-	1st Priority
	-	3	Tell us about any health conditions you might have.	Up until now, I never had anything special.	-	2nd Priority
	-	4	Feeling pain?	No, only just a feeling of weakness on half of my body.	-	1st Priority
	-	5	Do you have diabetes?	Not that I know of.	-	1st Priority
	-	6	Any recent weight changes?	I think I have kept the same weight.	-	Not a Priority
	-	7	History of severe illness?	Up until now, I never had anything special.	-	2nd Priority
	After question 2 is asked	8	Time since symptom onset?	Three hours ago.	-	1st Priority
	-	9	Do you have any allergies?	No.	-	2nd Priority
Medication	-	10	Taking any medication?	I'm not taking any medication.	-	1st Priority
	-	11	Medication side-effects present?	But I'm not taking any medication.	-	2nd Priority
Nutrition	-	12	Describe your diet.	I eat about everything. I'm not picky.	-	Not a Priority
	-	13	Last time you ate?	It was lunch.	-	Not a Priority
	-	14	What did you eat last time?	I had some barbecue meat with rice and salad.	-	Not a Priority
	-	15	Snacks between meals?	Yes, sometimes I eat between lunch and dinner, when I'm hungry.	-	Not a Priority
	-	16	Do you take dietary supplements?	No, I don't take supplements.	-	Not a Priority
Activity	-	17	Have there been changes in appetite?	I think my appetite has been the same.	-	Not a Priority
	-	18	How much do you walk each day?	I normally don't exercise regularly. I only walk near my house.	-	Not a Priority
	-	19	What were you doing when you felt ill?	I was taking care of my grandchildren at my house.	-	2nd Priority
Risk factors	-	20	Physical effort at time of event?	Yes, I was playing with my grandchildren.	-	Not a Priority
	-	21	Recently under stress?	No, I'm retired now.	-	2nd Priority
	-	22	Frequency of alcohol consumption?	No, I don't usually drink alcoholic drinks.	-	Not a Priority
	-	23	Do you have high blood pressure?	Yes, my doctor told me that I have.	-	2nd Priority
	-	24	High cholesterol present?	Not that I know of.	-	2nd Priority
	-	25	Are you a smoker?	No, I never smoked in my life.	-	2nd Priority

INITIAL SIMULATION CONDITIONS		
CATEGORY	DESIGNATION	COMMENTS
Signs & symptoms	Broca aphasia	Due to Stroke
	Right sided weakness including facial asymmetry	Due to Stroke
Acute conditions at case start	Stroke	-
	Increased blood pressure	Due to Stroke
	Tachycardia	Due to Stroke
	Tachypnea	Due to Stroke
	Hypoxia	Due to Stroke
Parameters at case start:	Blood pressure (mmHg): 215 / 110	
	Heart rate (bpm): 130	
	Respiratory rate (/min): 32	
	O ₂ saturation (%): 88	
	Blood glucose (mg/dL): 112	Blood glucose (mmol/L): 6.22
	Temperature (°C): 36.3	Temperature (°F): 97
	Hemoglobin (g/dL): 14.9	
Urinary output (mL/kg/h): 0.61		

SEQUENCING OF CLINICAL CONDITIONS

Description of the predefined evolution of the patient's state:

SIMULATION TIME (MIN)	EVENT
0	Initial conditions: - Left ischemic embolic stroke - Increased blood pressure - Tachycardia - Tachypnea - Hypoxia
1	
2	
3	
4	
5	
6	
7	- Left ischemic embolic stroke causes Severe Left ischemic embolic stroke
8	
9	
10	
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20	

Note: If alteplase is administered with systolic blood pressure ≥ 185 and diastolic blood pressure ≥ 110 , the patient suffers a severe intracranial hemorrhage.

EXAMINATION PROCEDURES

Examination procedures relevant for the case with detailed results:

CATEGORY	TEST NAME	HEALTH CONDITIONS	TEST	RESULT
Physical exam	Glasgow coma scale	ISCHEMIC EMBOLIC LEFT STROKE OR NO STROKE	Eye opening	4 - Spontaneous
			Verbal response	3 - Words
			Motor response	5 - Localizing
			Total result	12 - Moderate impairment of consciousness
		SEVERE EMBOLIC LEFT STROKE	Eye opening	3 - To sound
			Verbal response	2 - Sounds
			Motor response	5 - Localizing
			Total result	10 - Moderate impairment of consciousness
		AFTER TIMELY ALTEPLASE	Eye opening	4 - Spontaneous
			Verbal response	4 - Confused
			Motor response	6 - Obey commands
			Total result	14 - Mild impairment of consciousness
		AFTER UNTIMELY ALTEPLASE	Eye opening	4 - Spontaneous
			Verbal response	3 - Words
			Motor response	5 - Localizing

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	Pupils (size, equality and reaction to light)	ALTEPLASE	Total result	12 - Moderate impairment of consciousness
		HEALTH CONDITIONS ALTEPLASE OVERDOSE OR HIGH BLOOD PRESSURE AND ALTEPLASE ADMINISTERED	TEST	RESULT
			Eye opening	2 - To pressure
			Verbal response	2 - Sounds
			Motor response	5 - Localizing
			Total result	9 - Moderate impairment of consciousness
Initial	Equal and reactive to light			
Deterioration to severe intracranial hemorrhage	Mydriatic left pupil and left oculomotor nerve lesion			

DIAGNOSTIC STRATEGIES

Complementary strategies for diagnosis relevant for the case:

CATEGORY	TEST NAME	RESULT DESCRIPTION	PRIORITY
Imaging	Carotid Doppler Ultrasound	No significant alterations	2nd Priority
	Head CT	Spontaneous hyperdensity in the M1 segment of the left middle cerebral artery. This information needs to be integrated clinically but it is likely related to an acute thrombus. There are no visible acute parenchymal lesions. The cerebral cisterns and ventricles are of normal volume. Small hypodensities present in left internal capsule and subcortical white matter bilaterally in presumed relation to chronic lesions of small vessel disease. There are no signs of bone fractures. ASPECTS: 10	1st Priority
	Cerebral angio CT	Occlusion of M2 segment of left MCA	1st Priority
	Cerebral perfusion CT	Mismatch in the area of left parietal temporal lobe	1st Priority
	Transcranial doppler	M1 Left Occlusion	2nd Priority
Lab tests	Arterial blood gas	Increased pCO2 value; no significant additional alterations	Not a Priority
	Biochemistry	No significant alterations	2nd Priority
	Complete blood count	No significant alterations	2nd Priority
	Coagulation Tests	No significant alterations	2nd Priority
Electrophysiology	Electrocardiogram	Sinus rhythm, no morphological changes	2nd Priority
Decision aids	Stroke Scale (NIHSS)	HEALTH CONDITIONS	
		TEST	RESULT
		1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma.	0 - Alert, Keenly responsive
		1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct.	2 - None correct
		1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly.	0 - Both tasks correctly
		2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation.	0 - Normal
		3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness).	0 - No visual loss
		4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis.	2 - Right side partial paralysis
		5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or joint fusion.	3 - No effort against gravity, limb falls
		ISCHEMIC EMBOLIC LEFT STROKE OR NO STROKE 5.b- Motor Left Arm (10" sitting at 90°, supine at 45°)	0 - No drift

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		6.a- Motor Right Leg (5" lying at 30°)	2 - Some effort against gravity; Drifts down to bed
		6.b- Motor Left Leg (5" lying at 30°)	0 - No drift
		7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion.	0 - Absent
		8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss).	2 - Severe to total sensory loss
		9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia.	2 - Severe aphasia
		10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier.	0 - Normal
		11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality.	0 - No abnormality
		Total	13 - Moderate stroke
		HEALTH CONDITIONS	TEST
		1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma.	1 - Not Alert; but arousable by minor stimulation
		1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct.	2 - None correct
		1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly.	2- None task correctly
		2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation.	2 - Forced deviation
		3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness).	2 - Complete hemianopia
		4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis.	2 - Right side partial paralysis
		5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or join fusion.	4 - No movement
		5.b- Motor Left Arm (10" sitting at 90°, supine at 45°)	0 - No drift
		6.a- Motor Right Leg (5" lying at 30°)	4 - No movement
		6.b- Motor Left Leg (5" lying at 30°)	0 - No drift
		7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion.	0 - Absent
		8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss).	2 - Severe to total sensory loss
		9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia.	2 - Severe aphasia
	SEVERE ISCHEMIC EMBOLIC LEFT STROKE		

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		10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier.	2 - Severe dysarthria; Mute/anarthric	
		11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality.	0 - No abnormality	
		Total	25 - Severe stroke	
	HEALTH CONDITIONS	TEST	RESULT	
		1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma.	0 - Alert, Keenly responsive	
		1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct.	1 - One correct	
		1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly.	0 - Both tasks correctly	
		2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation.	0 - Normal	
		3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness).	0 - No visual loss	
		4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis.	1 - Right side minor paralysis	
		5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or join fusion.	2 - Some effort against gravity; Drifts down to bed	
	AFTER TIMELY ALTEPLASE	5.b- Motor Left Arm (10" sitting at 90°, supine at 45°)	0 - No drift	
		6.a- Motor Right Leg (5" lying at 30°)	2 - Some effort against gravity; Drifts down to bed	
		6.b- Motor Left Leg (5" lying at 30°)	0 - No drift	
		7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion.	0 - Absent	
		8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss).	1 - Mild to moderate sensory loss	
		9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia.	1 - Mild to moderate aphasia	
		10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier.	0 - Normal	
		11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality.	0 - No abnormality	
		Total	8 - Moderate stroke	1st Priority
	HEALTH CONDITIONS	TEST	RESULT	
		1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma.	0 - Alert, Keenly responsive	
		1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct.	0 - Both correct	

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		1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly.	0 - Both tasks correctly
		2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation.	0 - Normal
		3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness).	0 - No visual loss
		4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis.	1 - Right side minor paralysis
		5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or join fusion.	1 - Drift, drifts does not hit bed
	AFTER TIMELY THROMBECTOMY	5.b- Motor Left Arm (10" sitting at 90°, supine at 45°)	0 - No drift
		6.a- Motor Right Leg (5" lying at 30°)	0 - No drift
		6.b- Motor Left Leg (5" lying at 30°)	0 - No drift
		7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion.	0 - Absent
		8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss).	1 - Mild to moderate sensory loss
		9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia.	0 - No aphasia
		10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier.	0- Normal
		11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality.	0 - No abnormality
		Total	3 - Minor stroke
	HEALTH CONDITIONS	TEST	RESULT
		1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma.	1 - Not Alert; but arousable by minor stimulation
		1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct.	2 - None correct
		1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly.	2 - None task correctly
		2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation.	2 - Forced deviation
		3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness).	2 - Complete hemianopia
		4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis.	2 - Right side partial paralysis
		5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or join fusion.	3 - No effort against gravity, limb falls

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		<p>AFTER UNTIMELY ALTEPLASE</p>	<p>5.b- Motor Left Arm (10" sitting at 90°, supine at 45°) 0 - No drift</p> <p>6.a- Motor Right Leg (5" lying at 30°) 2 - Some effort against gravity; Drifts down to bed</p> <p>6.b- Motor Left Leg (5" lying at 30°) 0 - No drift</p> <p>7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion. 0 - Absent</p> <p>8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss. 2 - Severe to total sensory loss</p> <p>9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia. 2 - Severe aphasia</p> <p>10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier. 0 - Normal</p> <p>11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality. 0 - No abnormality</p> <p>Total 20 - Moderate to severe stroke</p>	
		<p>HEALTH CONDITIONS</p>	<p>TEST</p> <p>1.a- Level of Consciousness 0- Alert, Keenly responsive; 1-Not Alert; but arousable by minor stimulation; 2- Not Alert, requires repeated and strong stimulation;- 3-coma. 2 - Not Alert, requires repeated and strong stimulation</p> <p>1.b- LOC- Questions (month and age) 0- Both correct; 1- one correct; 2- none correct. 2 - None correct</p> <p>1.c- LOC - Verbal Commands (open/close eyes, grip/release non-paretic hand) 0-both tasks correctly; 1- one task correctly; 2- none task correctly. 2- None task correctly</p> <p>2- Best gaze (Only horizontal eye movements, voluntary or reflexive) 0- Normal; 1- partial gaze palsy; 2- forced deviation 2 - Forced deviation</p> <p>3- Visual fields (stimuli or threats in each eye's 4 quadrants) 0- No visual loss; 1- partial hemianopia ; 2- complete hemianopia; 3- bilateral hemianopia (blind/cortical blindness). 2 - Complete hemianopia</p> <p>4- Facial palsy 0- Normal; 1- Right side minor paralysis; 1- Left side minor paralysis; 2- Right side partial paralysis; 2- Left side partial paralysis; 3- Right side complete paralysis; 3- Left side complete paralysis. 3 - Right side complete paralysis</p> <p>5.a- Motor Right Arm (10" sitting at 90°, supine at 45°) 0- No drift; 1- drift, drifts does not hit bed; 2- Some effort against gravity; drifts down to bed; 3- No effort against gravity, limb falls; 4- No movement; UN - amputation or join fusion. 4 - No movement</p> <p>5.b- Motor Left Arm (10" sitting at 90°, supine at 45°) 0 - No drift</p> <p>6.a- Motor Right Leg (5" lying at 30°) 4 - No movement</p> <p>6.b- Motor Left Leg (5" lying at 30°) 0 - No drift</p> <p>7- Limb ataxia (finger-nose-finger; heel-shin) 0- Absent; 1- Present in one limb; 2- Present in two limbs; UN- amputation or join fusion. 0 - Absent</p> <p>8- Sensory (sensation to pinprick when tested or withdrawal from noxious stimulus) 0- Normal; 1- mild to moderate sensory loss; 2- Severe to total sensory loss. 2 - Severe to total sensory loss</p> <p>9- Best Language (name items, describe a picture, read sentences) 0- No aphasia; 1- mild to moderate aphasia; 2- severe aphasia; 3- mute, global aphasia. 3 - Mute, global aphasia</p>	
		<p>ALTEPLASE OVERDOSE OR HIGH BLOOD PRESSURE AND ALTEPLASE ADMINISTERED</p>		

Case 32
Irene Cornell

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		10- Dysarthria (clarity of articulation of speech when reading or repeating words) 0- Normal; 1- mild to moderate dysarthria; 2-severe dysarthria; mute/anarthric UN-intubated or other physical barrier.	2 - Severe dysarthria; Mute/anarthric	
		11-Extinction and inattention (simultaneous bilateral visual and tactile stimuli; anosagnosia) 0- No abnormality; 1-Visual, tactile, auditory, spatial or personal inattention or extinction to one modality; 2- Profound hemi-inattention or extinction to more than one modality.	0 - No abnormality	
		Total	28 - Severe stroke	

Notes: CT = computed tomography; NIHSS = National Institutes of Health Stroke Scale

TREATMENT / INTERVENTION OPTIONS

Medication / intervention options to treat all patient's conditions.

This table contains treatments required to treat all relevant acute health conditions present in this case.

Each cell in the first column designates a condition and the cells to the right describe its treatment options.

The "type" and "category" columns refer to the location of the treatment item in Body Interact user interface (to be filled in only by the Body Interact team).

To treat:	TYPE	CATEGORY	DESIGNATION	DOSE	UNIT	ROUTE OF ADMINISTRATION	PRIORITY
INCREASED BLOOD PRESSURE	MEDICATION	ANTIHYPERTENSIVE	Labetalol	20	mg	IV bolus	1st Priority

Note: Blood pressure lowering should preferably be with non-vasodilator medication (note: With a high initial BP the nurse protocol states that she should notify the doctor. The doctor would have to follow the BP protocol and give IV Labetalol 10-20 mg over 1-2 minutes).

To treat:	TYPE	CATEGORY	DESIGNATION	DOSE	UNIT	ROUTE OF ADMINISTRATION	PRIORITY
ISCHEMIC EMBOLIC LEFT STROKE / SEVERE ISCHEMIC EMBOLIC LEFT STROKE	MEDICATION	FIBRINOLYTIC	Alteplase	0.9 mg/kg=72 mg	-	-	1st Priority
				10% of dose=7.2 mg	mg	IV bolus	
				90% of dose=64.8 mg	mg	IV over 1 hour	
	CALL		Stroke Unit *	The stroke unit is notified.		1st Priority	
CALL		Interventional Neuroradiologist	Thrombectomy - left MCA occlusion		1st Priority		

Note: Firstly, verify if there are contraindications for alteplase treatment (there are no contraindications).
*For Ischemic embolic stroke treatment, Call Stroke unit intervention, is an optional intervention.

To treat:	TYPE	CATEGORY	DESIGNATION	DOSE	UNIT	ROUTE OF ADMINISTRATION	PRIORITY
HYPOXIA	INTERVENTION	OXYGEN	Nasal cannula	-	-	-	1st Priority
			High flow mask	40	%	-	1st Priority

ENDING MESSAGES

Each ending message text is required to have no more than 200 characters (including spaces).

TYPE	CONDITIONAL	MESSAGE
Success	Successfully treated ischemic stroke without causing hemorrhagic transformation and normalized oxygen saturation and blood pressure	Congratulations, your practice meets the guidelines' requirements.

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Failure	Alteplase overdose or high blood pressure and alteplase administered	The patient suffered a severe intracranial hemorrhage, and underwent emergency neurosurgery. Recovered with severe permanent disability.
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DIFFERENTIAL DIAGNOSIS

Indication of the options of diagnostic answers that the user will be presented at the end of the simulation (multiple choice question):

DIFFERENTIAL DIAGNOSIS MULTIPLE CHOICE QUESTION	Correct answer	Ischemic stroke
	3 incorrect answers	Migraine headache
		Hemorrhagic stroke
		Meningitis

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