Rural STEMI

Section 1: Case Summary

Scenario Title:	Rural STEMI
Keywords:	STEMI, MI, Rural,
Brief Description of Case:	Inferior STEMI at Remote Nursing Station, RUDI contacted for support and ROSE contacted for further support

Goals and Objectives	
Educational Goal:	To practice managing a critical patient in a remote setting utilizing RTVS resources
Objectives: (Medical and CRM)	1- Practice the management of STEMI in a remote setting 2- Build relationships between nursing stations and Real Time Virtual Support pathways 3-Improve telemedicine and SIM tele-facilitation skills of healthcare providers doing virtual medicine 4- Consider logistical challenges in transferring patients from remote northern communities in the winter
EPAs Assessed:	

Learners, Setting and Personnel				
Target Learners:	☒ Junior Learners	☒ Senior Learners	☒ Staff	
	☐ Physicians	☐ Nurses	☐ RTs	☒ Inter-professional
	☐ Other Learners:			
Location:	☐ Sim Lab	☒ In Situ	☐ Other:	
Recommended Number of Facilitators:	Instructors:			
	Confederates:			
	Sim Techs:			

Scenario Development	
Date of Development:	August 5, 2020
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Section 2A: Initial Patient Information

A. Patient Chart					
Patient Name: John Prince			Age: 55	Gender: Male	Weight: 100 kg
Presenting complaint: Chest pain continuous for last 1 hour, exertional over last 2 weeks					
Temp: 36.6	HR: 80	BP: 175/80	RR: 16	O_2Sat: 96%	FiO_2: RA
Cap glucose: 9.0			GCS: (E V M) 15 (4,5,6)		
Triage note: Chest pain constant for last hour, intermittent over last 2 weeks. Mild nausea, no vomiting.					
Allergies: NKDA					
Past Medical History: HTN DM2 GERD			Current Medications: Ramipril 5mg po daily Metformin 1g po BID Pantoprazole 40mg po daily		

Section 2B: Extra Patient Information

A. Further History
History provided by the patient The chest pain is central, squeezing, non pleuritic and radiating to his Jaw and Left shoulder 7/10. He has mild nausea with the pain. He has no back pain, no sob, no cough, no fever, no leg swelling. He has a history of GERD but this is nothing like that. The pain came on while he was sitting on the couch watching tv and hasn't gone away. He has been getting pain like this over the last 2 weeks with exertion but it would resolve with rest. PMHx: as above; PSHx: Cholecystectomy 2y ago; Social Hx: No ETOH, 10py smoking hx, quit 20y ago, no drugs FHx: 2 Brothers and his father have had heart attacks, father died of a stroke at 65.

B. Physical Exam	
List any pertinent positive and negative findings	
Cardio: NS1S2 No Murmurs	Neuro: Grossly normal, no focal deficits
Resp: GAEB No C/W	Head & Neck: Normal
Abdo: Soft non-tender, no masses	MSK/skin: Normal
Other: Mildly diaphoretic, Pain not reproducible with palpation or movement	

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Section 3: Technical Requirements/Room Vision

A. Patient
☒ Mannequin *Adult, if available*
☒ Standardized Patient (as alternative)
☐ Task Trainer
☐ Hybrid
B. Special Equipment Required
In Situ Simulation utilizing participants usual facilities and equipment. Mannequin if available.
C. Required Medications
Whatever is available on site. SIM will utilize: Nitro, Morphine, ASA, Clopidogrel, IV fluids, Oxygen, Ramipril, Atorvastatin, Metoprolol
D. Moulage
None
E. Monitors at Case Onset
☐ Patient on monitor with vitals displayed ☒ Patient not yet on monitor
F. Patient Reactions and Exam
Include any relevant physical exam findings that require mannequin programming or cues from patient (e.g. – abnormal breath sounds, moaning when RUQ palpated, etc.) May be helpful to frame in ABCDE format. Normal Physical exam findings.

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Section 4: Confederates and Standardized Patients

Confederate and Standardized Patient Roles and Scripts	
Role	*Description of role, expected behavior, and key moments to intervene/prompt learners. Include any script required (including conveying patient information if patient is unable)*
	A standardized patient could provide the history information above, otherwise this can be provided by facilitator.

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Section 5: Scenario Progression

Scenario States, Modifiers and Triggers				
Patient State/Vitals	Patient Status	Learner Actions, Modifiers & Triggers to Move to Next State		Facilitator Notes
1. Baseline State Rhythm: NSR ST elevation inferior HR: 80 BP: 175/80 RR: 16 O_2SAT: 96% RA T: ^oC 36.6 GCS: 15	*Clutching chest, 7/10 chest pain radiating to jaw and Left shoulder*	<u>Expected Learner Actions</u> ☐ IV, O2, Monitors ☐ EKG, Labs (hbg, glc, troponin, all point of care) ☐	<u>Modifiers</u> - Nitro will drop BP to 90/50 <u>Triggers</u> - RN calls RUDI with EKG result (2)	No xray available
2. RUDI on ZOOM Vitals unchanged (if nitro was given patient BP 90/50)	Unchanged (if nitro given, more nauseated) Patient still clutching chest	<u>Expected Learner Actions</u> ☐ Connect to RUDI doc through Zoom or telephone. They help with Hx and Physical with RN. ☐ Share EKG through secure app ☐ IV fluids 100/h (bolus if BP dropped due to Nitro) ☐ Morphine ☐ Identify Inferior STEMI on EKG	<u>Modifiers</u> -If initial telephone call, RUDI doc asks to switch to Zoom to visualize pt. -Nitro will drop BP to 90/50 <u>Triggers</u> -STEMI identified, decision that TNK is indicated, but not available	
3. STEMI Protocol Vitals unchanged	Pain improved to 5/10 with morphine	<u>Expected Learner Actions</u> ☐ Locate STEMI PPO ☐ Evaluate contraindications (none found) ☐ PTN call initiated ASAP	<u>Modifiers</u> - Nitro will cause BP to drop to 90/50 <u>Triggers</u> - Protocol initiated – 1 hour passes (4)	
4. 1 Hour later Vitals unchanged	Patient unchanged, Pain 6/10	<u>Expected Learner Actions</u> ☐ RUDI calls ROSE ☐ ROSE and RUDI decide patient needs transfer for TNK / PCI, but must make overnight plan ☐ PTN initiated	<u>Modifiers</u> -PTN called – Will be delayed until morning at least pending weather <u>Triggers</u>	

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Appendix A: Laboratory Results

CBC WBC Hgb Plt Lytes Na K Cl HCO_3 AG Urea Cr Glucose Extended Lytes Ca Mg PO_4 Albumin TSH VBG pH pCO_2 pO_2 HCO_3 Lactate	Cardiac/Coags Trop D-dimer INR aPTT Biliary AST ALT GGT ALP Bili Lipase Tox EtOH ASA Tylenol Dig level Osmols Other B-HCG

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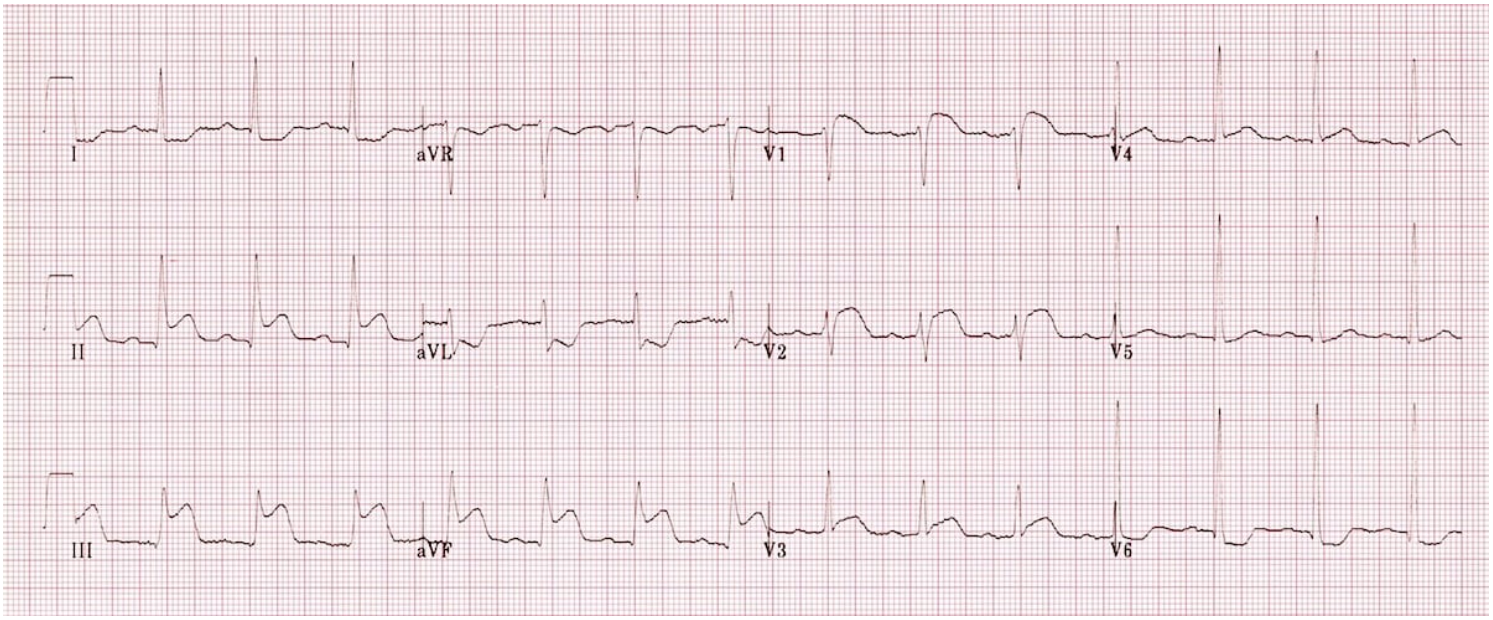
Appendix B: ECGs, X-rays, Ultrasounds and Pictures

Paste in any auxiliary files required for running the session. Don't forget to include their source so you can find them later!



ECG: https://litfl.com/wp-content/uploads/2018/08/ECG-Right-ventricular-infarction-1.jpg

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Appendix C: Facilitator Cheat Sheet & Debriefing Tips

Include key errors to watch for and common challenges with the case. List issues expected to be part of the debriefing discussion. Supplemental information regarding any relevant pathophysiology, guidelines, or management information that may be reviewed during debriefing should be provided for facilitators to have as a reference.

Nitro in inferior stemi if RV involvement

Communication challenges via ZOOM, Internet connection, multiple callers, mute function, video placement, etc.

Locating Northern health PPOs – requires logging in to northern health physician resources. Requires 2 factor authentication if not on a Northern Health computer which needs to be set up through ITS 1-888-558-4357.

What labs, investigations, monitors, drugs are available in different rural centres? POC Troponin?

References

1. Thomas, JJ and Brady, WJ. Acute Coronary Syndrome. In: Rosen's Emergency Medicine: Concepts and Clinical Practice 9ed, Walls RM (Ed), Elsevier, Philadelphia, PA, 2018, pp. 891 – 928.
2. Thomas, L and Goldstein, JA. Right Ventricular Myocardial Infarction. In: UpToDate, Post, TW (Ed), UpToDate, Waltham MA, 2020
3. Reeder, GS and Kennedy, HL. Overview of the Acute Management of ST-Elevation Myocardial Infarction. In: UpToDate, Post, TW (Ed), UpToDate, Waltham MA, 2020

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