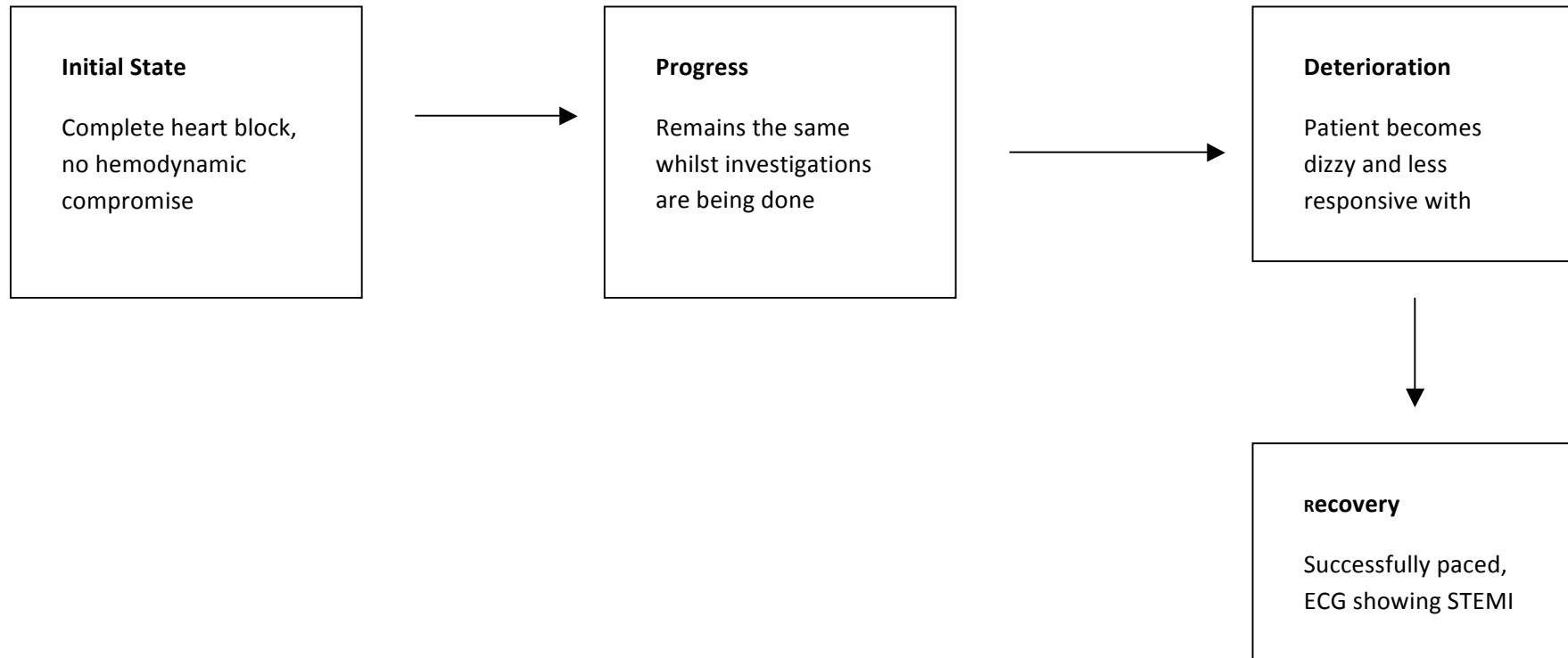


<p>Scenario: C7-2</p>	<p>Patient: Kelvin Klein</p>	<p>Simulator SIMMAN 3G preferred</p>
<p>Case Summary: 70 year old man with a history of AMI, CCF and a pacemaker presents following a syncopal episode. He is alert and has a neck collar in situ. He is in severe bradycardia with a rate of 40. ECG showing complete heart block and non-capturing pacemaker. He has had a meal 30 minutes ago. He becomes pale and hypotensive needing urgent pacing +/- isoprenaline infusion and a new pacemaker. A repeat ECG shows that he has had a STEMI – ST elevations in anterior-lateral leads.</p>		<p>Participant Briefing: 70 year old man BIBA following a syncopal episode at home. He has a history of AMI, CCF and a pacemaker insertion. The triage person has put him into Resus and you have been asked to review this patient.</p>
<p>Clinical Issues</p>		<p>Human factors / Non technical issues</p>
<p>Complete heart block Pacemaker failure Prompt assessment and treatment of a patient with a deteriorating brady arrhythmia</p>		<p>Communication with patient - history and reassurance Communication with team – role allocation and plan Aware of the urgent need to treat a haemodynamically unstable bradyarrhythmia</p>
<p>Learning Objectives: Assessment and initial treatment of a patient with severe bradyarrhythmia Communicate: Communicate well with patient – history taking and management plan. Communication with team Conduct: Rapid assessment and initiate treatment of a patient with severe bradyarrhythmia Demonstrate: Knowledge of the different types of arrhythmias. Knowledge of initial management and assessment of a patient with arrhythmia. Knowledge of managing a patient with unstable arrhythmia. Interpret: clinical findings to identify deterioration</p>		
<p>Faculty Actors: Staff nurse in ED resus. Helpful when asked to do something. May need to prompt if team misses some clues If there are enough faculty members one could be a radiographer for when the CXR is ordered.</p>		
<p>Patient Moulage: No specific moulage needed. Mannequin should be lying on a trolley. Cannula will already be in situ. The team can still go through the motions to get IV access and bloods but just use the access that is already there rather than stabbing the mannequin again.</p>		

<p>Equipment & Props: Projector screen & computer Video conference unit SIMMAN 3G mannequin Oxygen – piped or cylinder Oxygen masks – Nasal prongs, Hudson mask and Non re-breath masks should be available Stethoscope x 2 ECG machine and leads – if one is available Stickers for 12 lead ECG Laminated ECG showing completer heart block with failure of pacemaker capture and one with a paced rhythm with ST segment changes (AMI) Defibrillator and pads specific for Mannequin NIBP cuff Saturation probe</p>		<p>Gloves and appropriate PPE Monitor to display observations White board if needed IV cannulae – 16+18G Blood test tubes and ABG syringe Pretend or actual X-Ray plate Syringes with drugs pre-drawn (the faculty nurse can give these to the participants once they have been asked for and “drawn up”. Morphine 1mg in 10ml. 10ml saline flush. Crystalloid (0.9% NaCl or Hartmanns 1000ml) Giving set for the above fluid Syringe pump Isoprenaline Atropine</p>
<p>Monitor: ED setting – 3 wave forms 3-lead ECG Saturations NIBP</p>	<p>Investigations: 2xLaminated ECGs showing complete heart block and a paced rhythm with ST segment changes (AMI) CXR plate but X-ray not available during scenario ABG Other lab tests will not be back in time</p>	

Patient presentation	Expected response by participants	Faculty /Actors Notes
<p>Initial Presentation</p> <p>Neck collar in situ GCS 15, alert RR – 20/min Sats – 95% on air NIBP – 100/90 HR – 40 irregular No added sounds in chest No complaints of neck pain</p>	<p>Rapid assessment of a patient with arrhythmia Assign roles to team Place monitoring and (oxygen) IV access Take concise history – Characterise arrhythmia, assess for head injury, risk factors from PMHx, FHx. A-E assessment</p>	<p>Faculty nurse – supportive to the participants Patient has complete heart block – on monitor and ECG. You can prompt the participants if they are struggling at times.</p>
<p>Progression</p> <p>Patient remains with similar observations. Patient becomes more comfortable if given oxygen. Still in complete heart block. If not prompted, Kelvin should say that he has had a meal 30 minutes ago if participants are preparing for sedation.</p>	<p>Continuation of assessment and treatment of bradyarrhythmia ECG CXR Blood tests (including troponin) Ask for old notes Communication with patient and team about thoughts and plans. Reassessment of patient after any intervention</p>	<p>Patient improves marginally if appropriate management is instituted. Nurse faculty can prompt any missing investigations/therapy. When ECG ordered ask the participants to put the ECG stickers on the appropriate places and once this has been done give them the laminated ECG print out</p>

<p>Deterioration Kelvin complains of feeling dizzy and becomes less responsive RR – 12/min Sats – 93% on air Breath sounds bibasal creps BP – 90/70 HR – 35 irregular</p>	<p>Participants should realise that the patient has become unstable. They should reassess and institute appropriate therapy – external pacing, isoprenaline infusion, atropine</p>	<p>Faculty nurse to prompt the deterioration and to prompt any missing therapy/assessment/investigation points that have been missed. Prompt if they have not considered external pacing +/- isoprenaline infusion or Atropine. Set up for pacing when participants ask for it.</p>
<p>Recovery Kelvin stabilises but remains unwell, with appropriate therapy. He has a mildly depressed GCS – 14 RR – 20/min Sats – 98% on oxygen Breath sounds clear NIBP – 110/70 HR – 80 regular Normal and equal pupils</p>	<p>Call for help, if not already, or refer to cardiology for further management of his condition – pacemaker failure. Repeat ECG if asked for will show a paced rhythm and antero-lateral ST elevation. This will depend upon the level of experience of the participants.</p>	<p>The Nurse faculty can suggest a review or referral to a senior or to cardiology if this has not been asked for already. Nurse can prompt for a repeat ECG. Prompt for further investigations for possible head injury.</p>
<p>Debrief Guide</p>		
<p>Key clinical issues Rapid assessment and management of a patient with a severe Bradyarrhythmia Causes of bradyarrhythmia Recognition of deterioration in patients condition Management differences in stable vs unstable bradyarrhythmias Managing unfasted patients for procedural sedation</p>	<p>Key non technical issues Communication with patient and staff/team Situational awareness – deteriorating patient – need for cardiology/senior review Management of their team, role allocation</p>	



ABG results and ECGs

ABG -

pH 7.32

pO2 90

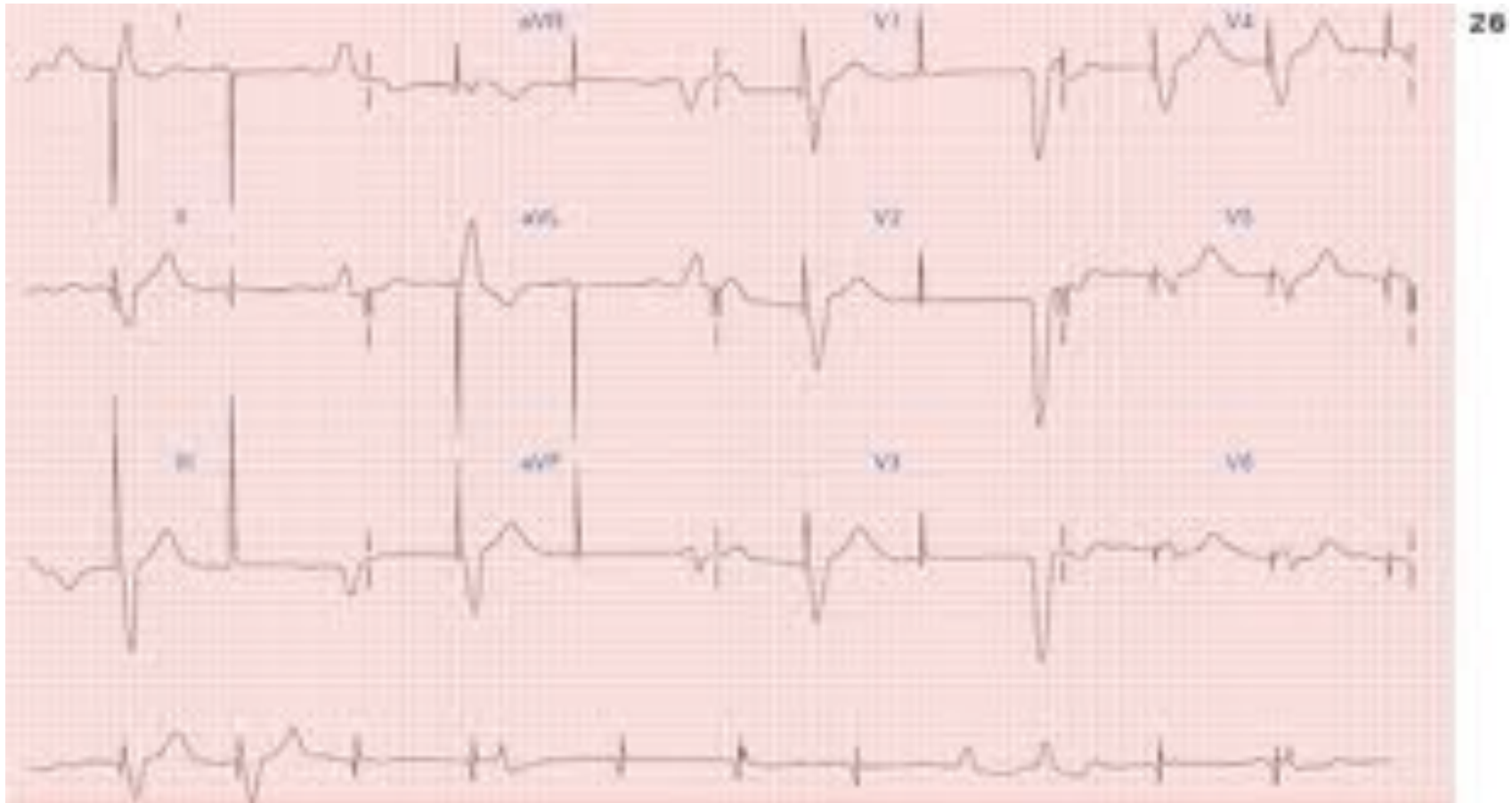
pCO2 32

HCO3 21

BE-1

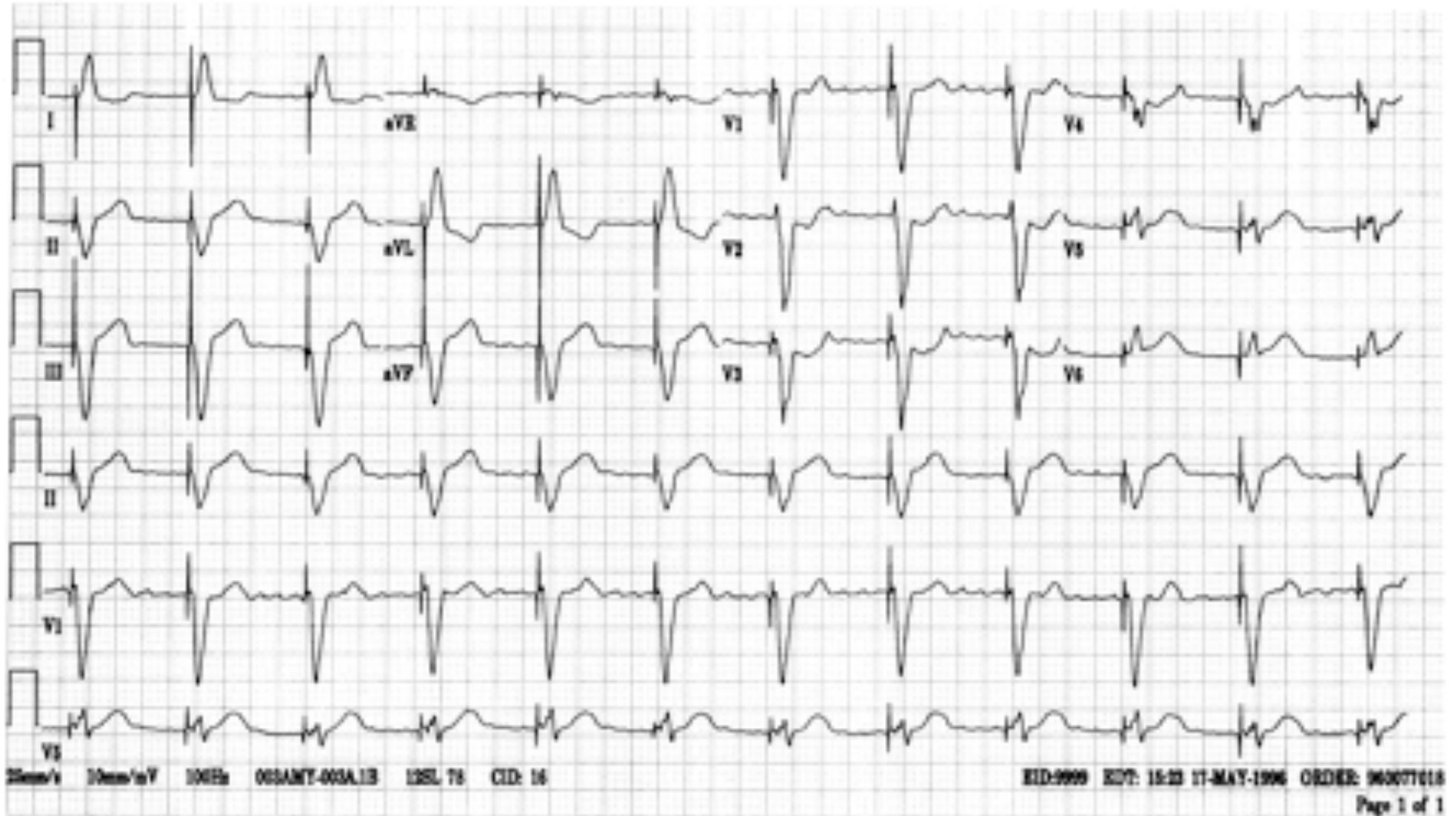
This project was possible due to funding made available by Health Workforce Australia

ECG with failure of pacing and complete heart block



This project was possible due to funding made available by Health Workforce Australia

ECG of paced rhythm with ST depression and elevation



This project was possible due to funding made available by Health Workforce Australia