

# Simulation: Shock or Block

Title: AF w/ WPW vs VT

## Learning Objectives:

1. Overall management of the unstable cardiac arrhythmia
2. Differentiate between SVT w/ Aberrancy and VT
3. Demonstrate understanding of WPW and VT pathophysiology
4. Display safe and effective Cardioversion management
5. Be able to differentiate between sinus tachy., SVT w/ Aberrancy, VT
6. Display understanding of the dangers of AV Nodal blockade in AF w/ WPW

## Take Home Points:

1. Age >30 has >85% specificity for VT
2. Careful when blocking the AV node

Sim Brief - Introduction, Familiarisation, Ground Rules, Basic Assumption

## Case Stem (for participants)

36 year old male presents to ED after LOC. Some seizure-like activity reported by girlfriend. Patient and girlfriend were out drinking all night. Approx. midnight patient fell to ground and there were some reported jerking of arms/legs. Regained consciousness. Occurred once more on the way into hospital. Presents having returned to consciousness but feels tired.

## Background Info (For instructors eyes only)

- 36 yo male.
- PMHx: nil
- Soc Hx: Smoker. Social Drinker.
- Medications: nil

## Settings for SIM Man/Woman

Bruise to head

## Equipment required

- Cardiac monitor/Defib
- ECG printouts – AF w/ antidromic AVRT (WPW), sinus w/ WPW, VT as example
- VBG/ABG printouts – normal with slightly high lactate – 2 VBGs
- Imaging printouts – CXR – with oesophageal intubation. With endotracheal intubation
- O2 +/- masks/NP
- IVC equipment
- Relevant specific medications – adenosine, amiodarone
- Relevant products - colloids/crystalloids/blood

## Participants required

- ED Registrars – Team Lead, Airway, Circ/Defib
- Nursing Staff – at least airway + drugs, ideally defib. and scribe

## Scenario Outline

Brief outline in table form of step-by-step progression of SIM  
Include possible alternatives and end-points

<b>Scenario Outline</b> (Outline of what should occur at each stage)	<b>Participant Response</b> (Expected or ideal response)	<b>Outcome</b> (what do participants do, what happens to SIM mannequin)
Stem given to team	Role allocation. Plan of approach.	Team prepared and allocated prior to patient arriving
Patient arrives with Ambulance	Patient transferred over. Handover given to team. Begin to obtain a history	Patient responding and GCS 15/15 but feels lightheaded.

SCGH ED Trauma Sim

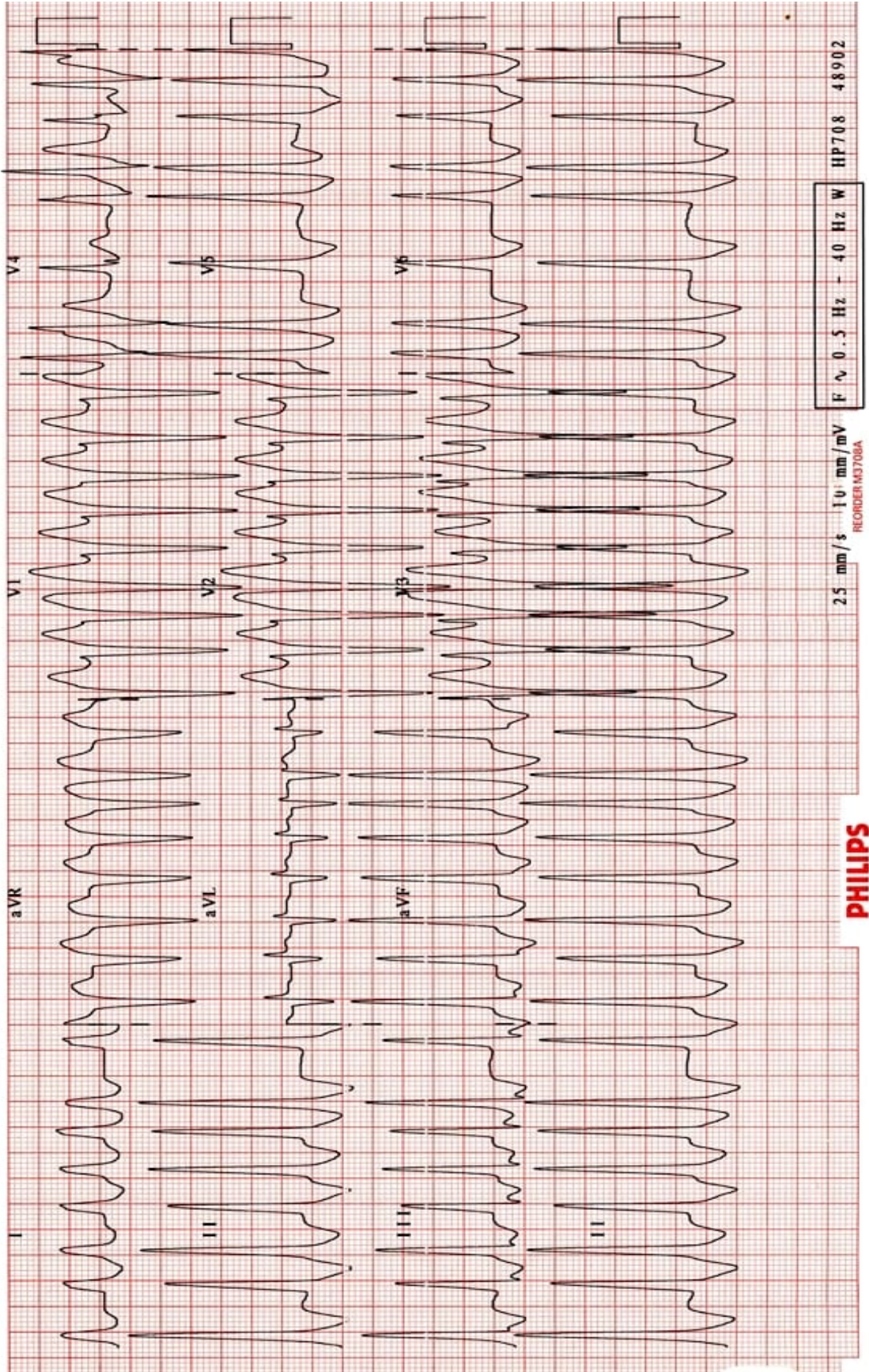
<p>Assessment of patient</p>	<p>ABCDE approach</p> <p>ED Reg. reviews charts</p> <ul style="list-style-type: none"> <li>- HR thready pulse ?fast</li> <li>- BP 100/82</li> <li>- Sats 98% RA</li> <li>- afebrile</li> </ul>	<p>A: Speaking</p> <p>B: Clear, no creps/wheeze</p> <p>C: Hypotensive. HR 250</p> <ul style="list-style-type: none"> <li>- IV access ensured</li> <li>- Bloods sent, ABG/VBG</li> </ul> <p>D: GCS 15/15</p>
<p>Initial Treatment Patient Stable</p>	<p>Notice:</p> <ul style="list-style-type: none"> <li>- ECG</li> <li>- Get 12 lead</li> <li>- Pads on</li> </ul>	<ul style="list-style-type: none"> <li>- Team should make all arrangements to prepare for cardioversion if required</li> <li>- Team should go through discussion of whether it is VT or AF w/ WPW</li> </ul>
<p>Pt. remains stable</p>	<ul style="list-style-type: none"> <li>- Pt. should be shocked.</li> <li>- Obs to deteriorate if there is delay</li> <li>- If patient is given adenosine, patient goes into VF</li> </ul>	<ul style="list-style-type: none"> <li>- If patient is shocked then patient stabilizes to sinus rhythm with WPW</li> </ul>
<p>Disposition Planning</p>	<ul style="list-style-type: none"> <li>- Cardiology</li> <li>- ?Amiodarone</li> </ul>	<ul style="list-style-type: none"> <li>- End Sim</li> </ul>

## Debriefing Objectives:

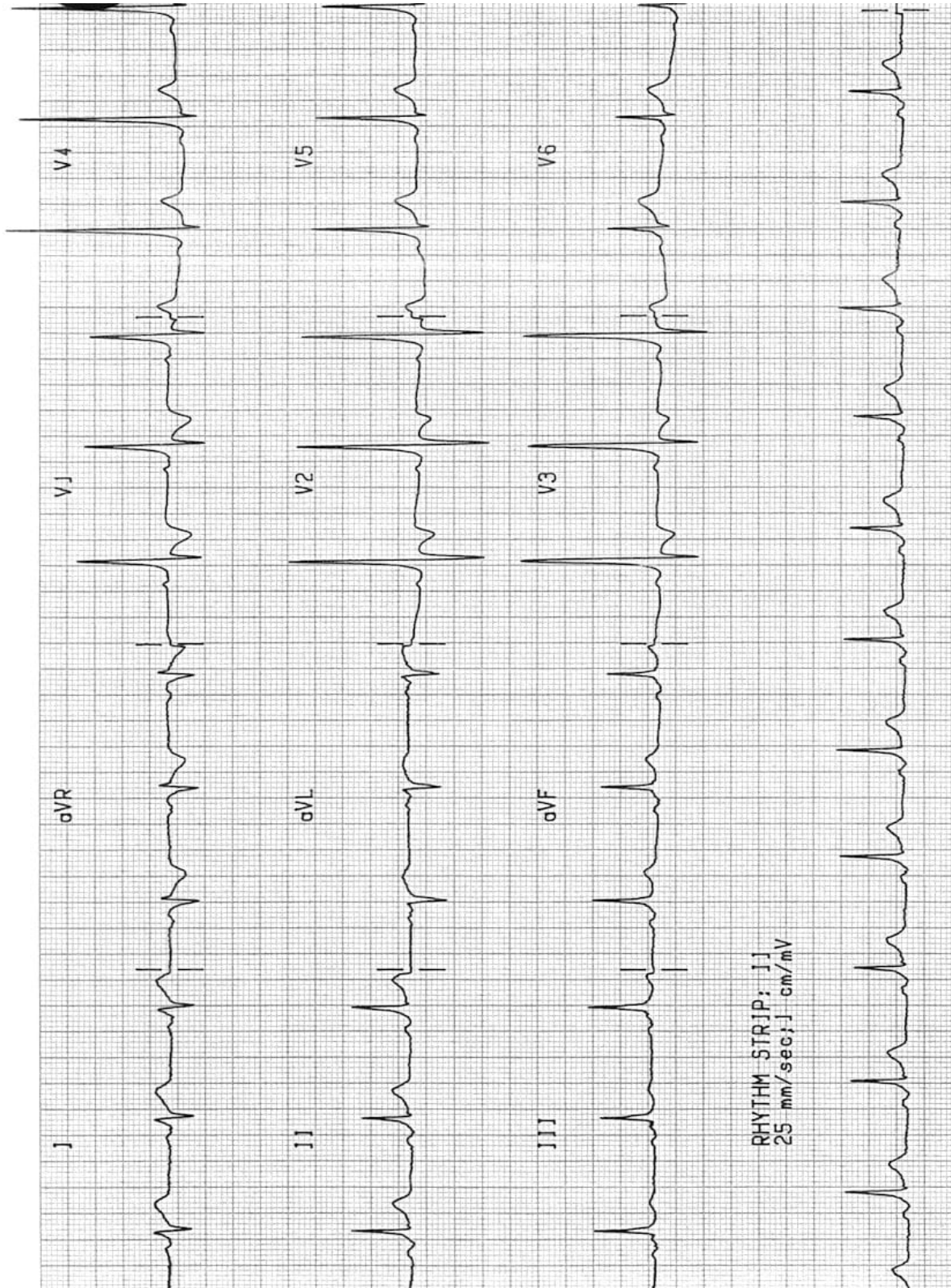
- Cover technical areas
  - Differentiating between SVT w/ Aberrancy and VT
  - When not to give adenosine
- Relevant Non-Technical Skills.

# Blood Gas 1

Sample (ABG/VBG)	Value	Reference Range
pH	7.45	7.35 - 7.45
pCO <sub>2</sub>	30	35 - 45 mmHg
pO <sub>2</sub>	50	75 - 100 mmHg (arterial)
HCO <sub>3</sub> <sup>-</sup>	23	22 - 26 mmol/L
Base Excess	0	-2 to +2 mmol/L
Hb	130	135 - 180 g/L
Na <sup>+</sup>	140	135 - 145 mEq/L
K <sup>+</sup>	4.8	3.5 - 5.0 mEq/L
iCa <sup>2+</sup>	0.90	0.90 - 1.15 mmol/L
Cl <sup>-</sup>	100	96 - 106 mmol/L
Anion Gap	24	22 - 26
Lactate	3	0.5 - 1.0 mmol/L
Bilirubin		
Creatinine	50	50 - 120 mmol/L



SCGH ED Trauma Sim

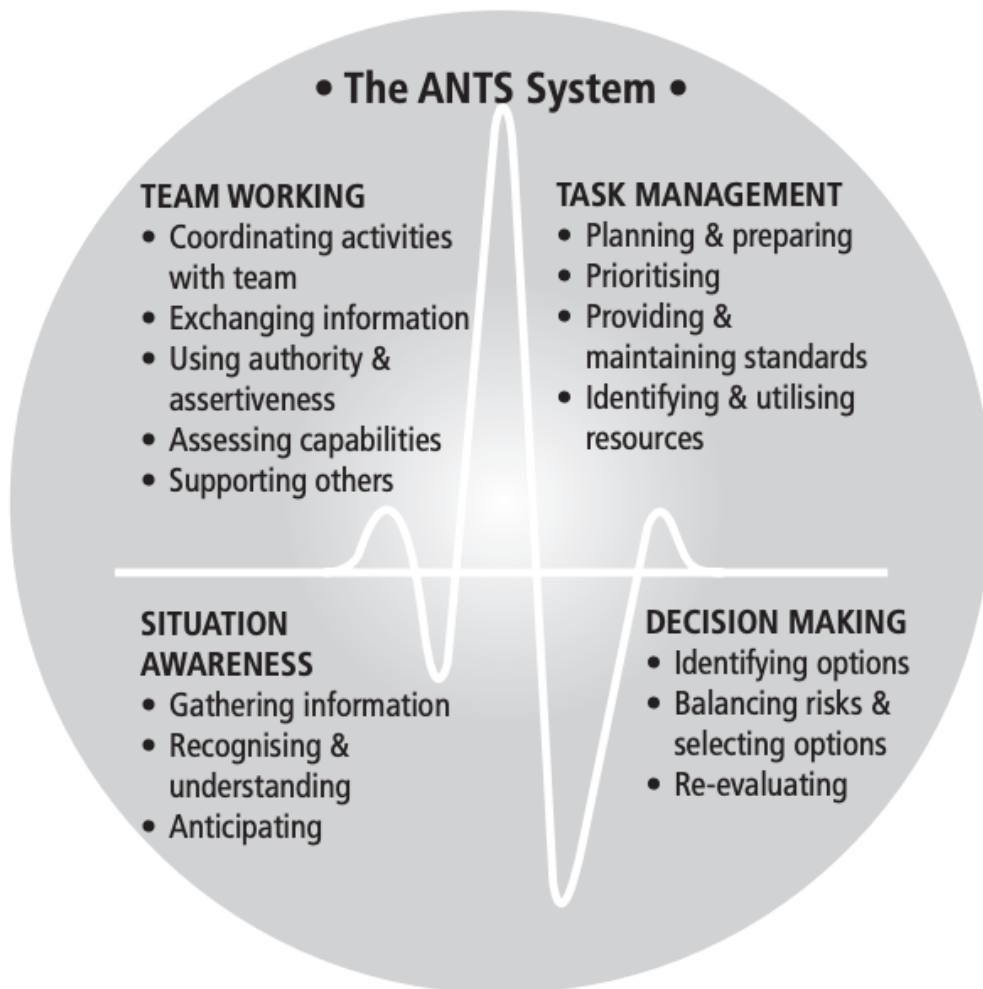


## Non-Technical Skills

It is suggested to implement a consistent, frequent and repeated teaching of non-technical skills during SIM in order to entrain these skills.

The ANTS system is a suggested framework that can be applied for the observation of SIM.

See below for a brief screenshot of the framework, and a link to the ANTS handbook for further information.



ANTS Framework

<https://www.abdn.ac.uk/iprc/documents/ANTS%20Handbook%202012.pdf>