Cardiac Care: Section Two
Introduction to Cardiac Arrhythmias
This section of the cardiac care component of your program is designed to provide an introduction to ECG interpretation. It will also examine some of the basic cardiac medications.

You will be given a copy of the CD-rom *INTRODUCTION TO CARDIAC ARRHYTHMIAS* by Jacqui Behan and David Glanville. Please examine the CD. It will further reinforce issues you have previously encountered, such as 12 lead interpretation and also introduce concepts of common cardiac arrhythmias. Once you have examined the CD please complete the accompanying quiz on the CD. You may wish to discuss some of the arrhythmias with your preceptor.
12 Lead ECG Interpretation

A priority nursing assessment tool in a patient complaining of chest pain, the 12 lead ECG, can provide evidence of rhythm disturbance, myocardial injury, ischaemia, or infarction. It is important to recognise that serial ECG changes should be reviewed concurrently with changes in the patient’s clinical status, and other factors such as history and biochemistry results. This section is designed to provide a basic understanding of ECG interpretation. It will also examine the particular characteristics of each cardiac lead and the perspective they provide of the hearts electrical activity.

Recommended readings include: Cardiac Arrhythmias Made Easy by Anne Evans-Murray

ECG – Worksheet

Fill in the gaps

The normal speed of the ECG paper is ____ mm/sec

The normal voltage of the limb and precordial leads is 1 mm / ____ mV

The P wave represents______________

The normal P-R interval is _________mm/sec

The PR interval represents___________________
The normal QRS interval is ___________ mm/sec

The QRS interval represents _________________________

The T wave represents _____________________________

Where do I place my precordial leads?

Where do I place my limb leads?
Please complete the following table re: the localisation of ECG changes with an acute myocardial infarction.

<table>
<thead>
<tr>
<th>Area</th>
<th>Coronary Arteries</th>
<th>Leads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Circumflex</td>
<td>V1 V2 V3 V4</td>
</tr>
</tbody>
</table>

Outline two methods of calculating heart rate (without the use of a rate ruler).

Why is lead two the most commonly used monitoring lead?

When are right ventricular and posterior leads indicated?

When a patient is on telemetry or continuous cardiac monitoring (CCM) what can we determine?

Can you indicate any limitations of continuous cardiac monitoring?
Systematic approach to ECG analysis

1 **Calibration/speed**: 25mm/sec standard speed. 1 millivolt (1mV)=1 cm deflection

2 **Ventricular Rate**: What is the ventricular rate per minute?  
   Eg 70pm  
   Rhythm: Is the ventricular rhythm regular  
   Configuration: What is the width? Eg 0.10sec

3 **Atrial Rate**: what is the atrial rate  
   Rhythm: Is the atrial rhythm regular/irregular  
   Configuration: What does the P wave look like  
   Eg notched or biphasic

4 **PR interval**
   Duration: what is the length of the PR interval  
   eg 0.18sec  
   Relationship to QRS: P wave before every QRS  
   Constant: is the P wave and PR interval in relation to the QRS constant?

5 **Findings**
   ST segments: In which leads are there ST elevation or depression?  
   T waves: examine leads to determine if any have inverted or hyperacute T waves.

6 **Other abnormal findings**
   Comment on any other abnormality

7 **Diagnosis and comments**
   Make your interpretation. Remember to describe underlying rhythm first then your findings.

8 **Appropriate intervention**
   Treatment and care

**Note**: Axis not included in this analysis
Review the following ECG’s and rhythm strips using the systematic interpretation approach.

Interpretation____________________________________________________
Rationale____________________________________________________

Interpretation____________________________________________________
Rationale____________________________________________________

Interpretation____________________________________________________
Rationale____________________________________________________