



Showcase for Hopkins Inquiry and Nursing Excellence

# SHINE

Conference

## Finding the Rhythm in Dysrhythmia Education

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JOHNS HOPKINS  
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## Financial Relationships

All individuals involved in the planning and delivery of this activity have no relevant financial relationship(s) with ineligible companies.

## Commercial Support

This educational activity has not received any form of commercial support.

## Off-Label or Investigational Use

This presentation will not discuss the off-label or investigational use of a drug, biological product, or medical device name.

# Background

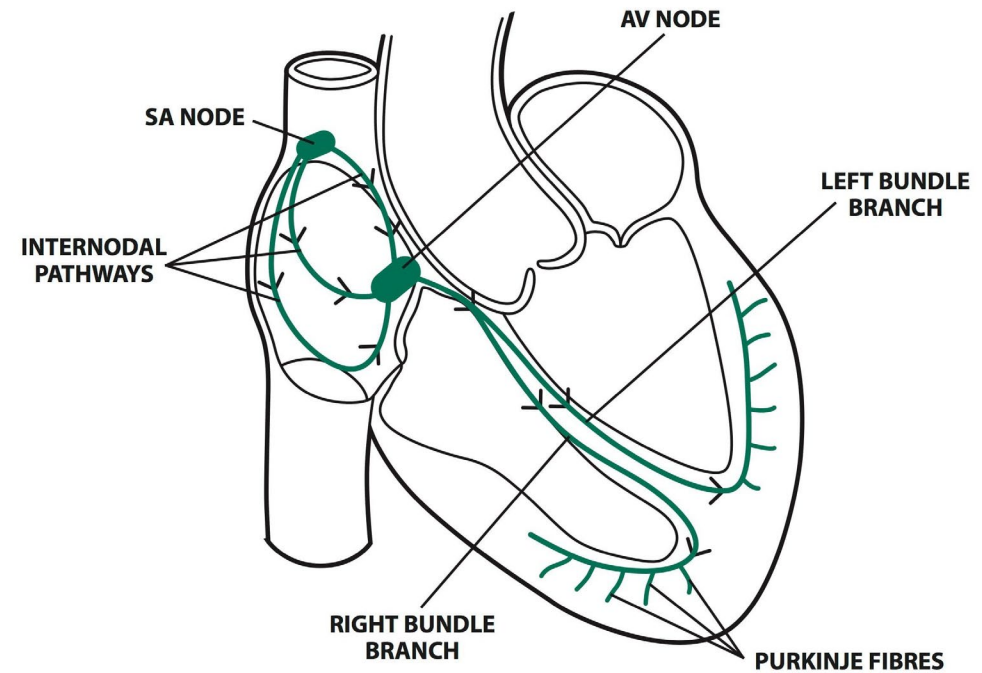
Integration of education

The heart is the heart , right?

Variation in education styles

Mismatch in practice vs. literature

SME workgroup created

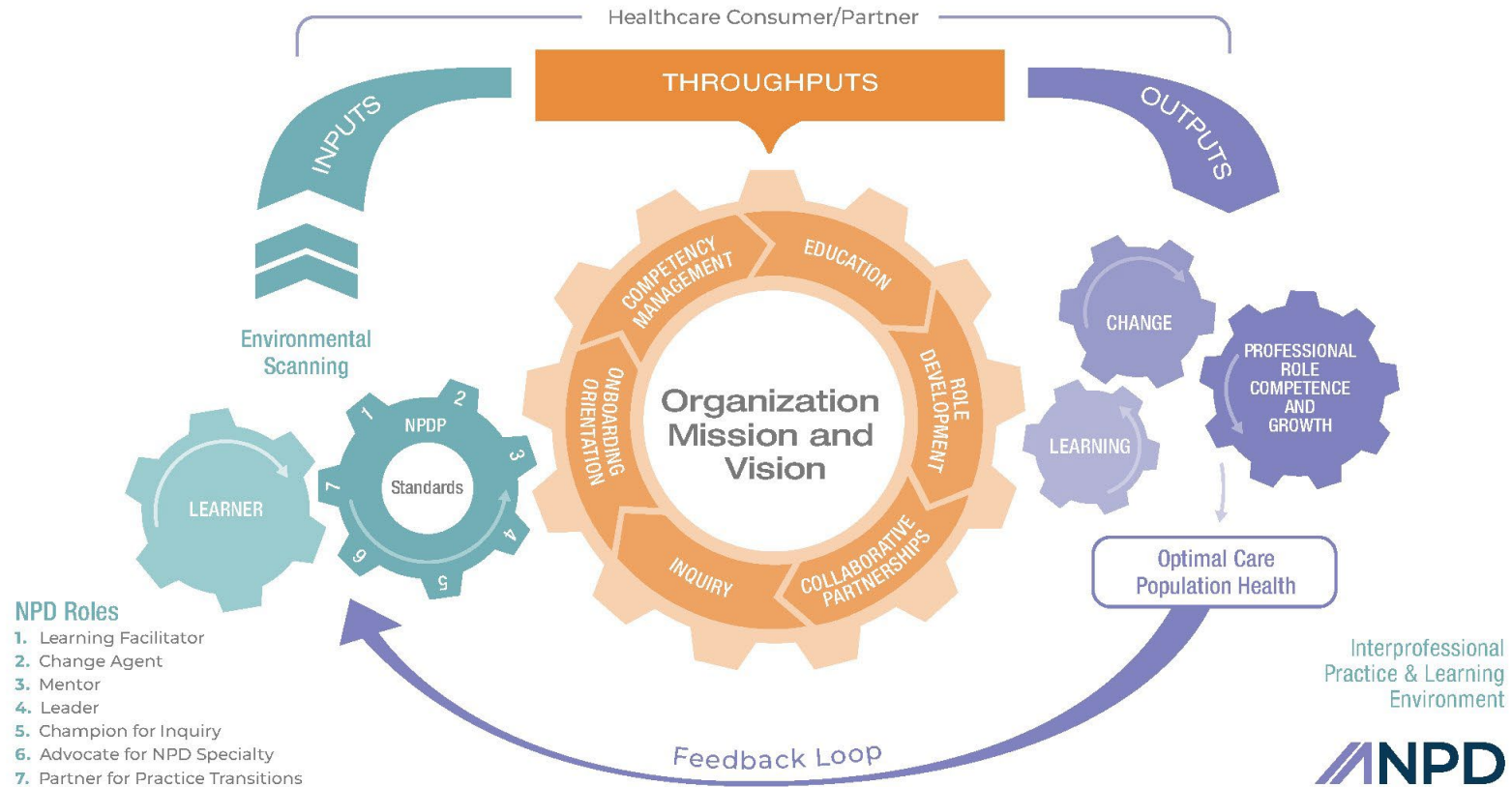


## Aim

The aim was to increase cardiac dysrhythmia knowledge for new nurses by developing standardized interactive, step-wise curricula & testing methods at two academic medical centers in the health system.



## Nursing Professional Development (NPD) PRACTICE MODEL



# Assessment of Current Education

JHH	BMC
MyLearning Dysrhythmia Modules	Critical Care Consortium (3 days)
4- hour centralized class	ED-led Dysrhythmia Class
Department-led class	No yearly assessment
Yearly myLearning Assessment for some departments	



# What does the literature say?

Small, brief chunks of information (Singhal & Salvi 2019)

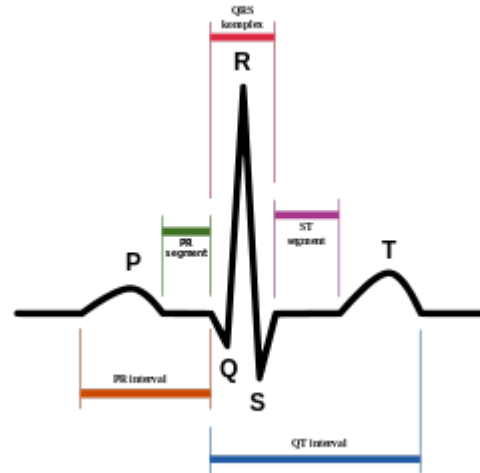
Application to current work (Bristol et al., 2019)

Interactive education (Afrasiabifar & Asadolah 2019)

Online Modules effective (Koning, et al, 2019)

## Dysrhythmia Part I

- Cardiac conduction cycle
- Rate
- Regularity
- Intervals
- Normal vs. Abnormal
- Could it kill the patient? (lethals)
- Initial nursing response



## Dysrhythmia Part II

- Short review of Part I
- How do you break a rhythm down?
- Rhythm Identification
- Normal, Abnormal vs. Lethal
- Initial nursing response and appropriate intervention



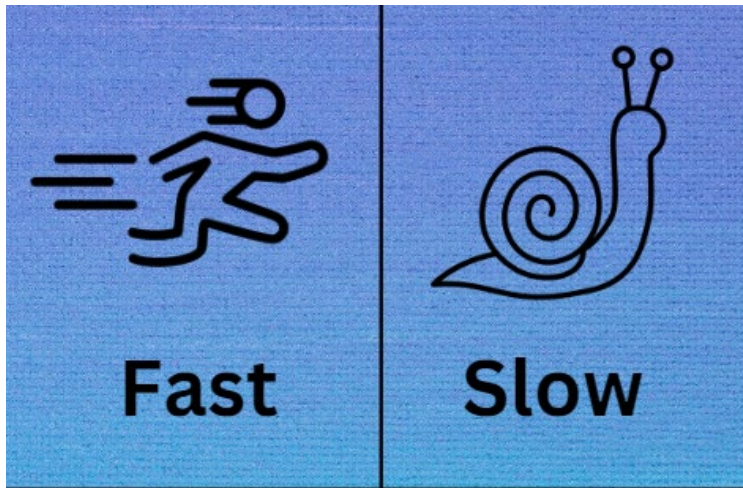
# Part I



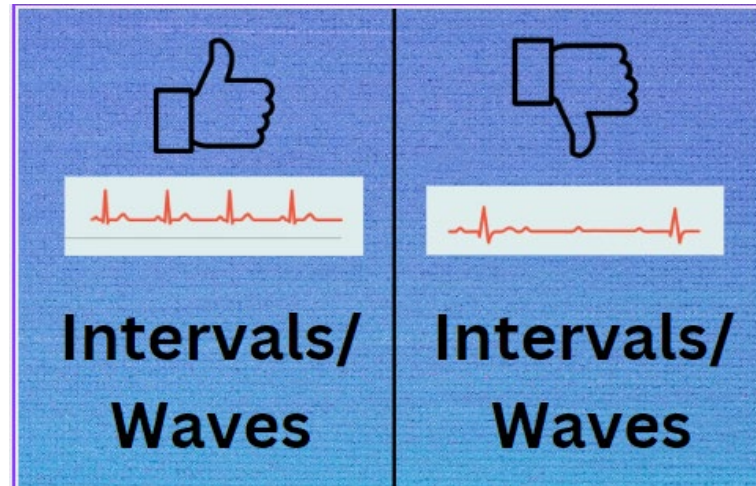
- **Board 1** (far left): Identify waves, identify normal PR, QRS, & QT intervals
- **Board 2**: Identify where to start and stop measuring intervals and measure intervals
- **Board 3**: Identify regular vs. irregular rhythms & fast, slow or normal rates
- **Board 4** (far right): Identify conduction system and associates rates

# Systematic approach

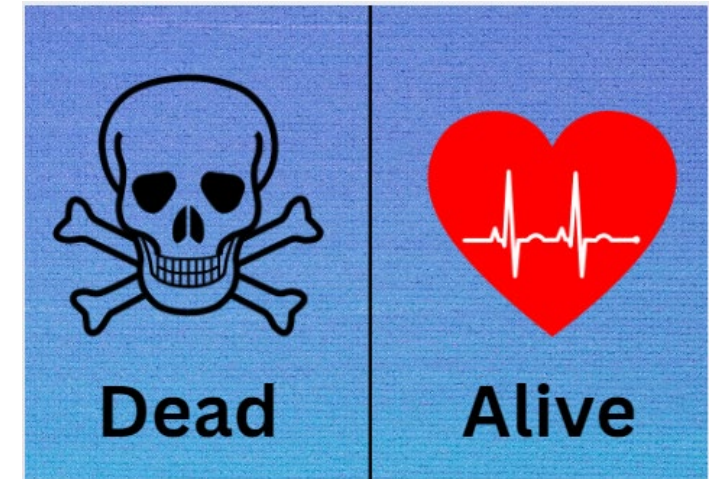
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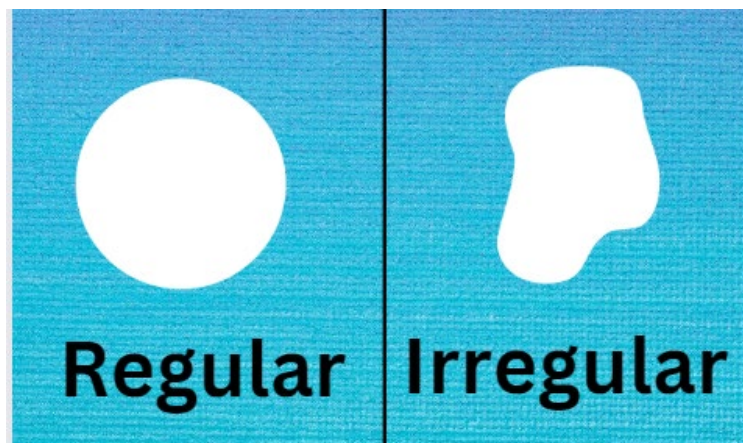
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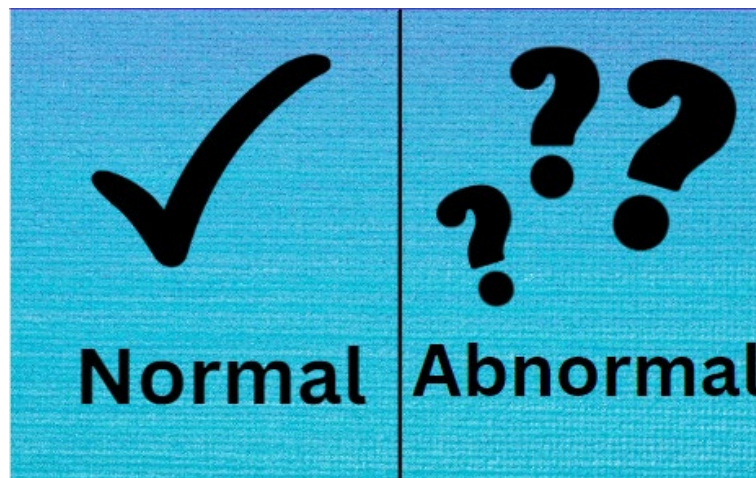
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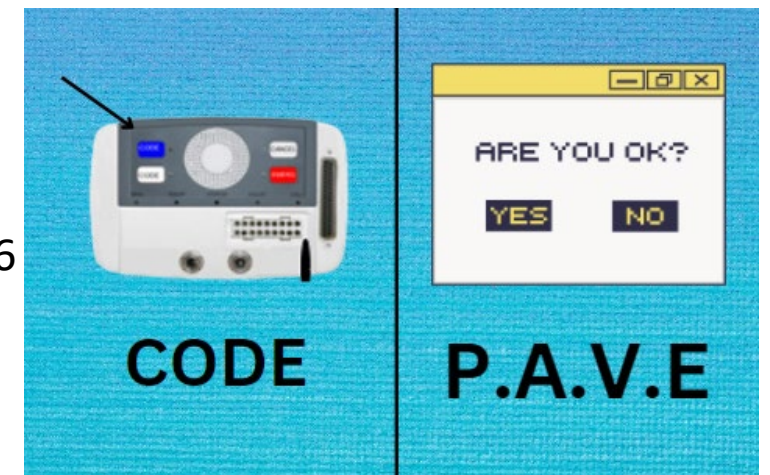
2



4



6



# Lesson plans

Teaching Points Instructor Guide for Boards	
<b>Conduction System (Board)</b>	<ul style="list-style-type: none"> <li>Sinoatrial node (SA node) = 60-100 bpm (&gt; 100 = tachycardia, &lt; 60 = bradycardia)</li> <li>Atrioventricular node (AV node) = 40-60 bpm</li> <li>Bundle of his = 40-60 bpm</li> <li>Bundle branch/Purkinje Fibers = 20-40 bpm</li> </ul>
<b>Regular or irregular (Board)</b>	<ul style="list-style-type: none"> <li>Regular has p to p matching up &amp; r to r wave matching up</li> <li>Irregular has irregular p to p intervals and r to r intervals</li> </ul>
<b>Cardiac Complex (Board)</b>	<ul style="list-style-type: none"> <li><b>P wave</b> = P wave represents the depolarization of the left and right atrium and corresponds to atrial contraction</li> <li><b>Q wave</b></li> <li><b>R wave</b></li> <li><b>S wave</b></li> <li><b>QRS waves together</b> = These three waves occur in rapid succession. The QRS complex represents the electrical impulse as it spreads through the ventricles and indicates ventricular depolarization.</li> <li><b>T wave</b> = indicates ventricular repolarization</li> </ul> <ul style="list-style-type: none"> <li>PR interval = 0.12-0.2 secs</li> <li>QRS interval = <math>\leq 0.12</math></li> <li>QT interval = <math>\leq 0.52</math></li> </ul> <p><b>Instructor:</b> Where <u>does</u> the measurements start? Have <u>group</u> explain why they chose where they put the intervals.</p> <p><b>Why do we measure?</b></p> <ul style="list-style-type: none"> <li>- To decide if something is normal or abnormal</li> </ul>
Teaching Points Instructor Guide for Boards	
<b>Paddle Game Rhythm Identification</b>	<ul style="list-style-type: none"> <li>Rhythms will be displayed up on the screen <u>boards</u> (if no screen)</li> <li>Each group (the groups they separated into earlier) will have a paddle to identify if the patient with this rhythm would be dead/alive, if it is regular/irregular, if the rhythm is slow/fast – they will get ONE paddle.</li> <li>Example: Group one has dead/alive, group two has fast/slow etc.</li> </ul> <p><b>Paddle options</b> (Try to do in this order)</p> <ol style="list-style-type: none"> <li>Fast or slow</li> <li>Regular or irregular</li> <li><b>Intervals normal or abnormal</b></li> <li>Rhythm Normal or Abnormal</li> <li>Dead or Alive</li> <li><b>Code or P.A.V.E</b></li> </ol>

	Paddle Options Discussion Points	Option Scenarios
<b>Fast vs. Slow</b>	<ul style="list-style-type: none"> <li>Fast = &gt; 100 bpm</li> <li>Slow = &lt; 60 bpm</li> </ul>	<ul style="list-style-type: none"> <li>Is slow/fast normal for this patient?</li> <li>If it is new – what do you want to do?</li> <li>Notify the RN/MD</li> <li>EKG/Vitals/Check on patient</li> <li>Investigate the rest of your questions</li> </ul> <p>Is it regular or irregular? Is this possibly lethal? → escalate</p>
<b>Regular or irregular (Board)</b>	<ul style="list-style-type: none"> <li>Regular has p to p matching up &amp; r to r wave matching up</li> <li>Irregular has irregular p to p intervals and r to r intervals</li> </ul>	<ul style="list-style-type: none"> <li>PVC, PACs may make something irregular</li> <li>A-fib is irregular, or maybe a heart block</li> </ul>
<b>Intervals normal or abnormal</b>	<ul style="list-style-type: none"> <li>PR 0.12-0.20</li> <li>QRS 0.04-0.10</li> <li>QT &lt; 0.52</li> </ul> <p>Are there P waves? Are there T waves?</p>	<ul style="list-style-type: none"> <li>Wide QRS</li> <li>Ps/Ts?</li> </ul>
<b>Normal vs. Abnormal</b>	<ul style="list-style-type: none"> <li>You are taking all your knowledge from the first exercise (boards) and deciding if something is normal or abnormal</li> <li>Normal = normal sinus rhythm (paced/controlled afib may be normal for the patient but is not a normal rhythm)</li> <li>Abnormal = assure you check on patient (VS/EKG), alert the nurse/doctor</li> </ul>	<ul style="list-style-type: none"> <li>Scenario – <b>NEW</b> irregular rhythm in the 130 – normal or abnormal? What might it be? = Afib w/ RVR</li> <li>Scenario – You are doing VS and patient's HR is in the 30s. - normal or abnormal?</li> <li>What do you do? What equipment?</li> </ul>

<b>Dead vs. Alive</b>	<b>Alive</b>	<ul style="list-style-type: none"> <li>Probably alive is a fine answer – for example SVT – they are alive but are they stable? Variable in patients. Discuss this point</li> </ul>
	<b>Dead</b>	<ul style="list-style-type: none"> <li>Patient is in VT – go into room and check pulse – No pulse? Call code – Start CPR.</li> <li>Pulse – Call for help EKG/Vitals – possibly call code depending on patient stability and what type of unit you're in.</li> </ul>
<b>CODE vs. P.A.V.E</b>	<p>CODE = Code bell/start compressions</p> <p>P – Patient – check on them A – Assess them. Awake, talking? V – Vital Signs E – EKG and Escalate if needed (charge nurse, physician etc.)</p>	<ul style="list-style-type: none"> <li>Patient HR in the 40s, walk into the room patient is dizzy, lightheaded you do their vitals and EKG VS: BP 84/59 RR 24 HR 39 Spo2 94%</li> <li>E = Escalate – call physician or ERT if patient is unstable</li> </ul>

# Part II

## Group Work

Strip #1

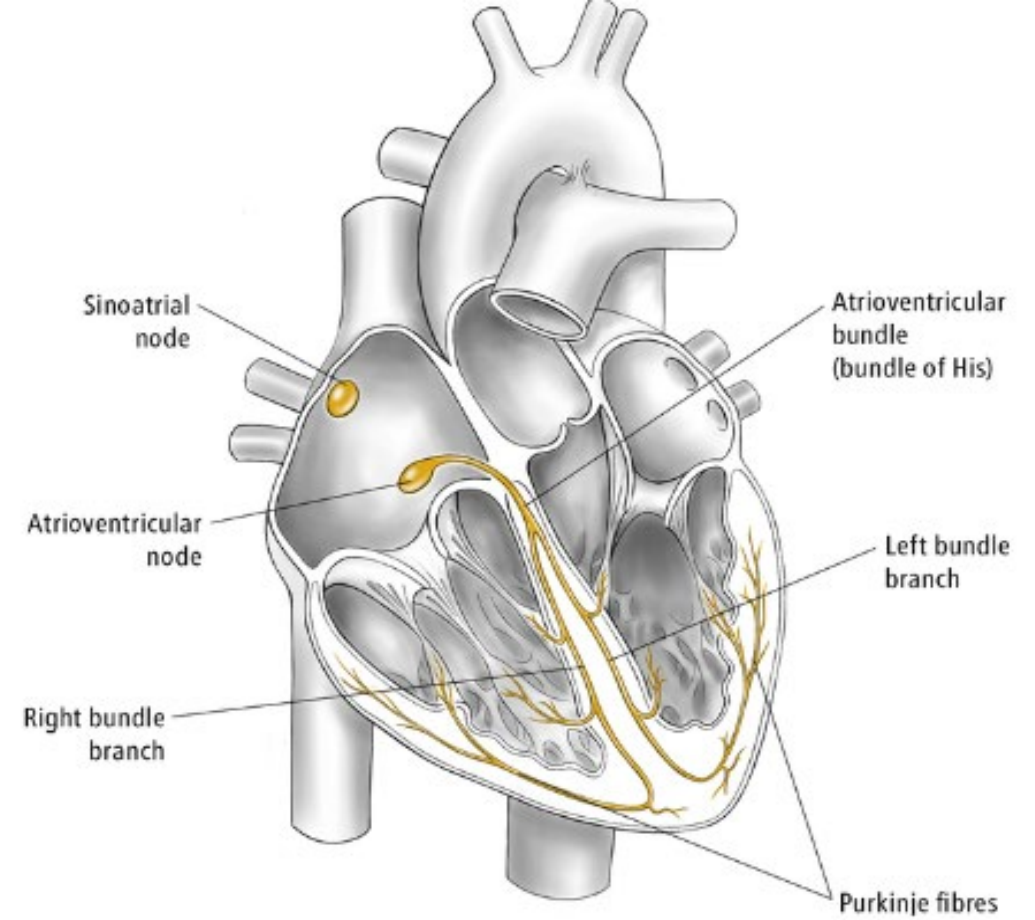


Atrial rate:	Atrial rhythm: (reg vs irreg)	
Ventricular rate:	Ventricular rhythm (reg vs irreg)	
P for every QRS?	QRS for every P?	
PR interval:	QRS interval:	QT interval:
Interpretation:		

Strip #2



Atrial rate:	Atrial rhythm: (reg vs irreg)	
Ventricular rate:	Ventricular rhythm (reg vs irreg)	
P for every QRS?	QRS for every P?	
PR interval:	QRS interval:	QT interval:
Interpretation:		



### Intervals

PR = \_\_\_\_\_

QRS = \_\_\_\_\_

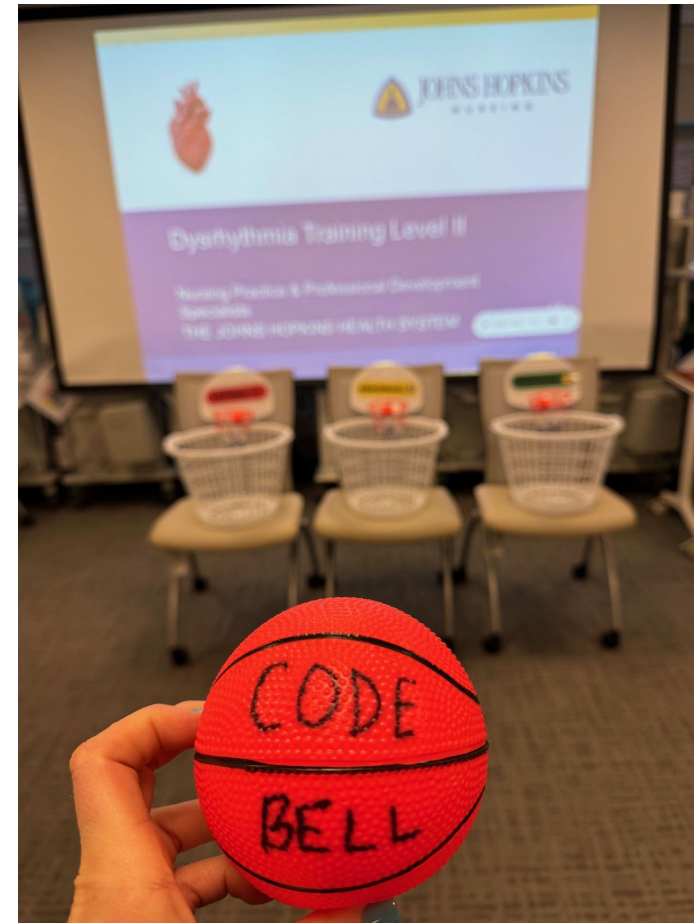
QT = \_\_\_\_\_

# What would you do?

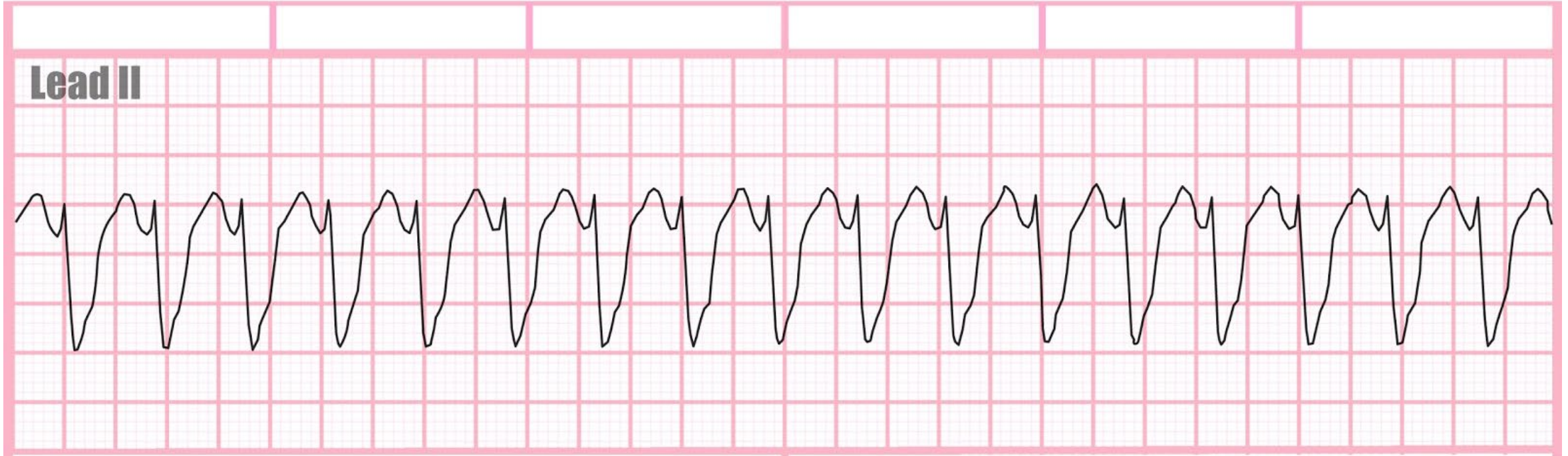
Normal, Abnormal, Lethal

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# Your Turn



## Standardization

- \*NEW\* Part I curriculum is taught to ALL new to JHH/BMC nurses in central nursing orientation
- All JHH/BMC nurses on monitored units are assigned the 3-Module Dysrhythmia mylearning.
- NPPDS' responsible for teaching this content were trained and given dysrhythmia kits
- Part II curriculum is taught to applicable JHH/BMC inpatient departments as part of departmental orientation.

# Participant Evaluations Part I

- 405 participants out of 484 rated the Dysrhythmia Station as VERY HELPFUL on a 3-point Likert Scale = 83 %
- Compared with 79% and 75% with other stations on the same Central Nursing Orientation Day





# Participant Evaluation Part I

This rhythm is...

Pre-test



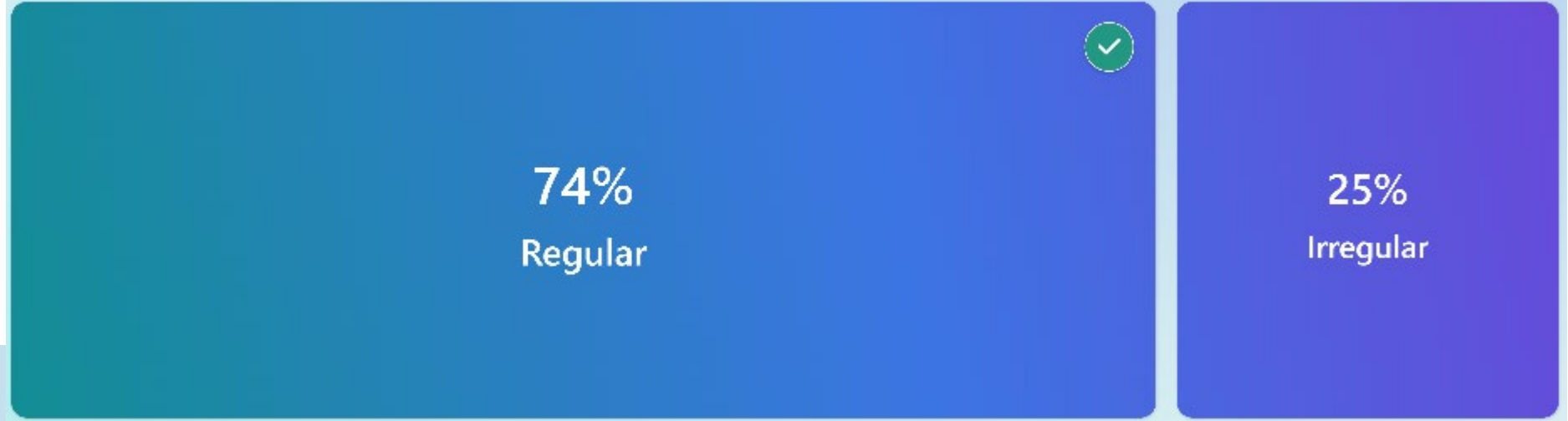
Post-test



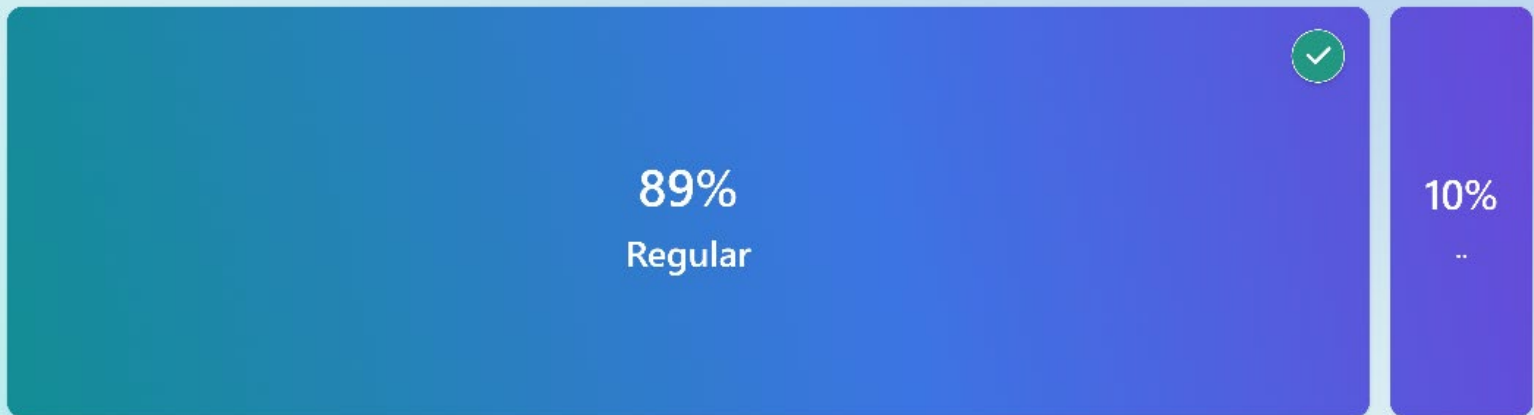
# Part I pre/post results

This rhythm is...

Pretest

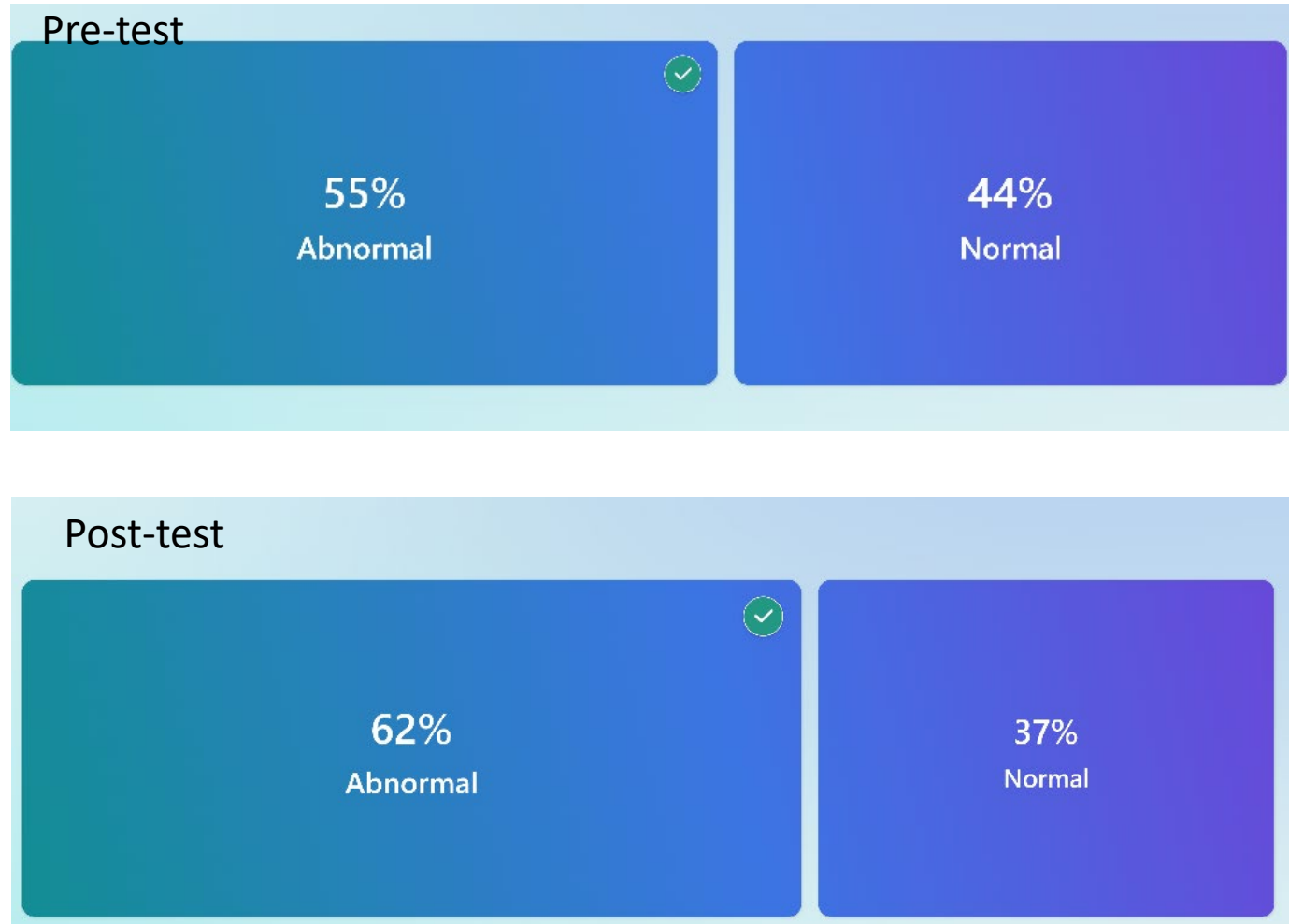


Post-test



# Part I pre/post results

This rhythm is...



# Part I pre/post results

This rhythm is...

Pre -test

58%  
Irregular

41%  
Regular



Post -test

75%  
Regular

24%  
Irregular



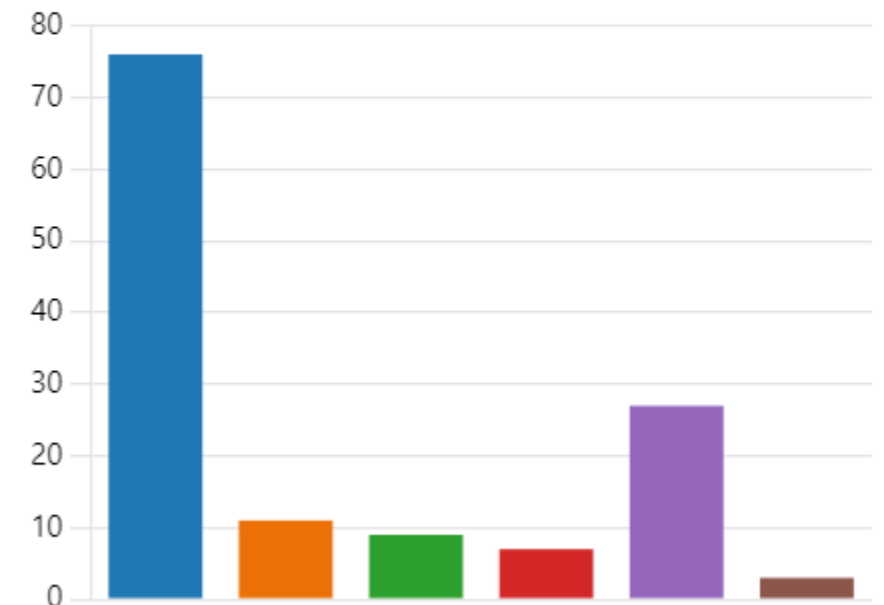
# Participant Evaluation Part II

- What did you like about session?
  - “The basketball game during the arrhythmia portion was so much fun!”
  - “Interactive class”
  - “Engaging, relvant”

## 2. Which part of the day did you find most beneficial?

[More Details](#)

● Dysrhythmia	76
● Suicide Room	11
● Trach	9
● Heparin/IV pump	7
● Code Narrator	27
● Neuro and vesicants	3



## Comments:

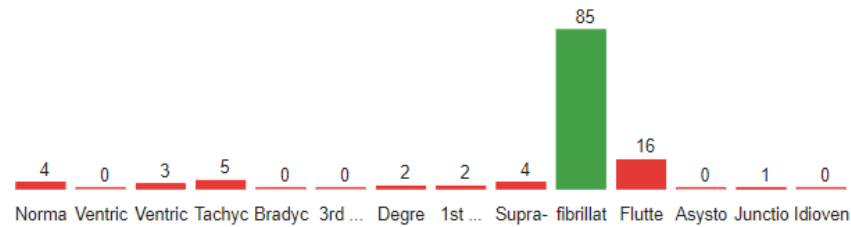
- “this was my favorite part of class today”

# Part II pre/post results

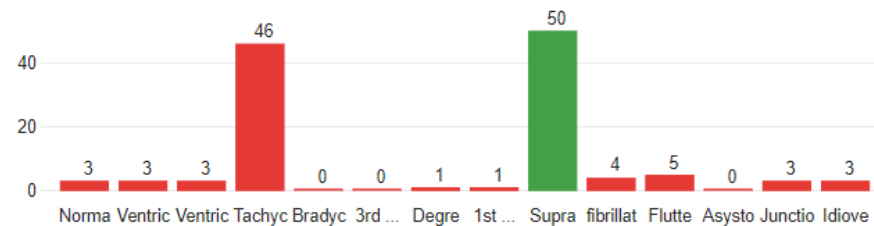
## Questions 1, 2 & 3

### Pre-test

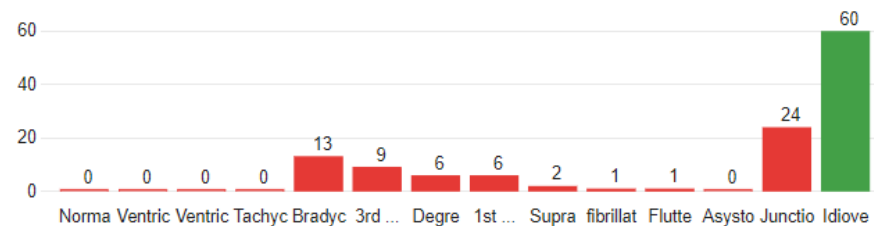
Q1 - Identify this rhythm afib



Q2 - Identify this rhythm

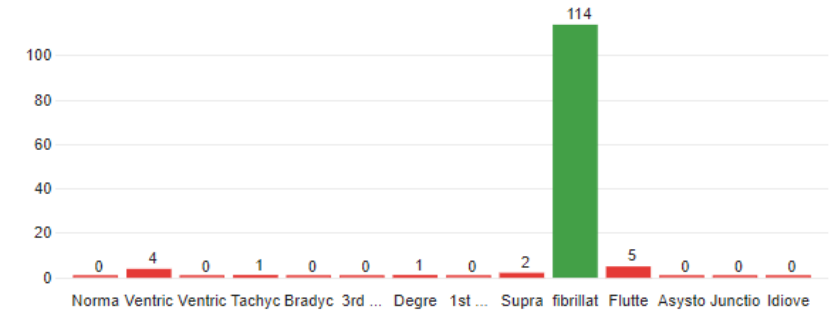


Q3 - Identify this rhythm - idioventricular

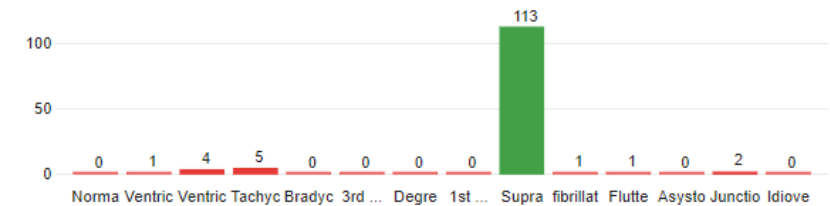


### Post-test

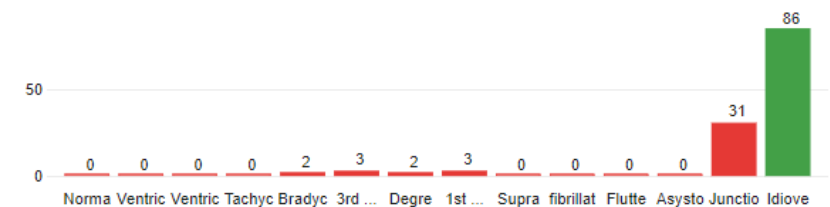
Q1 - Identify this rhythm - afib



Q2 - Identify this rhythm - SVT



Q3 - Identify this rhythm

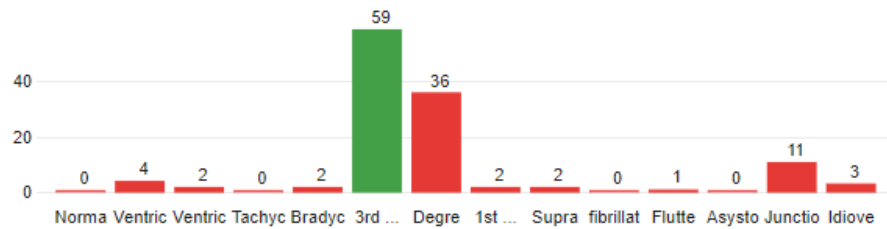


# Part II pre/post results

## Questions 4, 5 & 6

### Pre-test

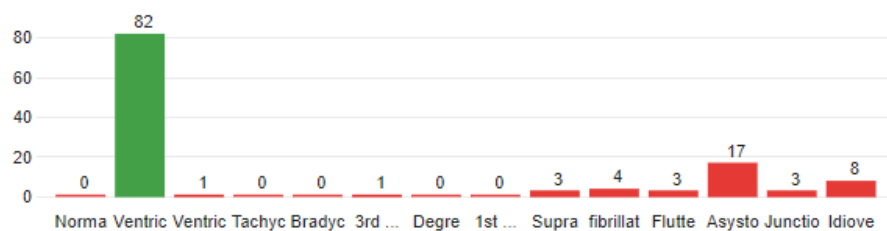
Q4 - Identify this rhythm - 3rd degree



Q5 - Identify this rhythm - vt

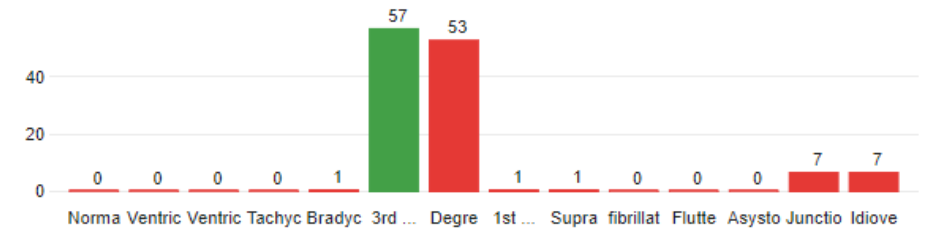


Q6 - Identify this rhythm - v fib

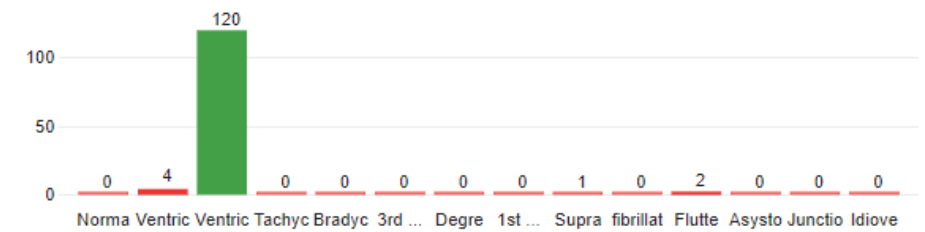


### Post-test

Q4 - Identify this rhythm 3rd degree



Q5 - Identify this rhythm - VT

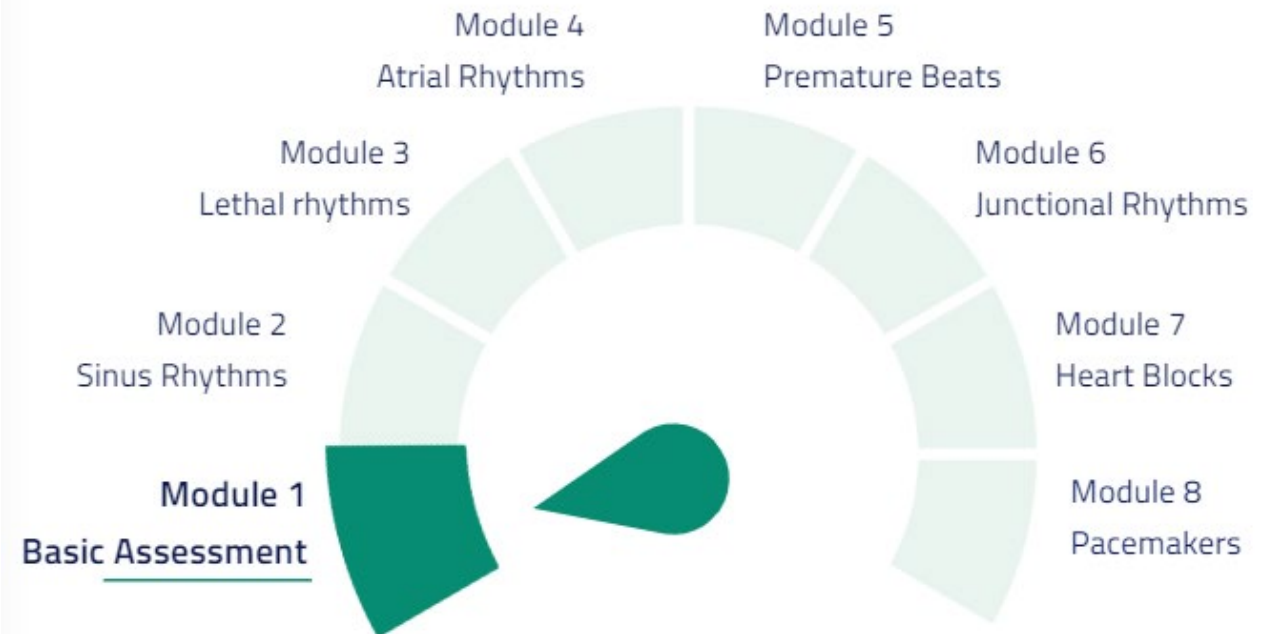


Q6 - Identify this rhythm - V fib



## Next Steps

- Revise Dysrhythmia MyLearning modules (*in process with MLT*)
  - Content organized into 8 short modules
  - Reflects content currently taught in classes
- Create a standardized, validated dysrhythmia exam (*in process*)





- Afrasiabifar, A., & Asadolah, M. (2019). Effectiveness of shifting traditional lecture to interactive lecture to teach nursing students. *Investigation and Education in Hospitals*, 37(1), e07.  
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- Koning, C., Slade, J., Smith, K., & Di Lella, D. (2019). Dysrhythmia competency and education: A regional education program development project to improve nursing knowledge and patient safety. *Canadian Journal of Cardiovascular Nursing*, 29(3), 7–15.
- Singhal, G., & Salvi, S. (2019). The effectiveness of planned teaching program on knowledge regarding identification and emergency management of cardiac dysrhythmias among staff nurses. *International Journal of Nursing Education*, 11(1), 23–25. <https://doi.org/10.5958/0974-9357.2019>



*Questions?*