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UNIVERSITY of HAWAII®
MAUI COLLEGE

INTRODUCTION TO ELECTROCARDIOGRAM (EKG) INTERPRETATION

NEED TO IMPROVE COMPETENCY

2022 PRIMARY PRACTICE PLACEMENT OF NEW GRADUATE NURSES

4%

**Cardiology/
Telemetry**

7%

Critical Care

4%

**Emergency/
Trauma**

5%

**Perioperative/
Surgical**

NEED TO IMPROVE COMPETENCY



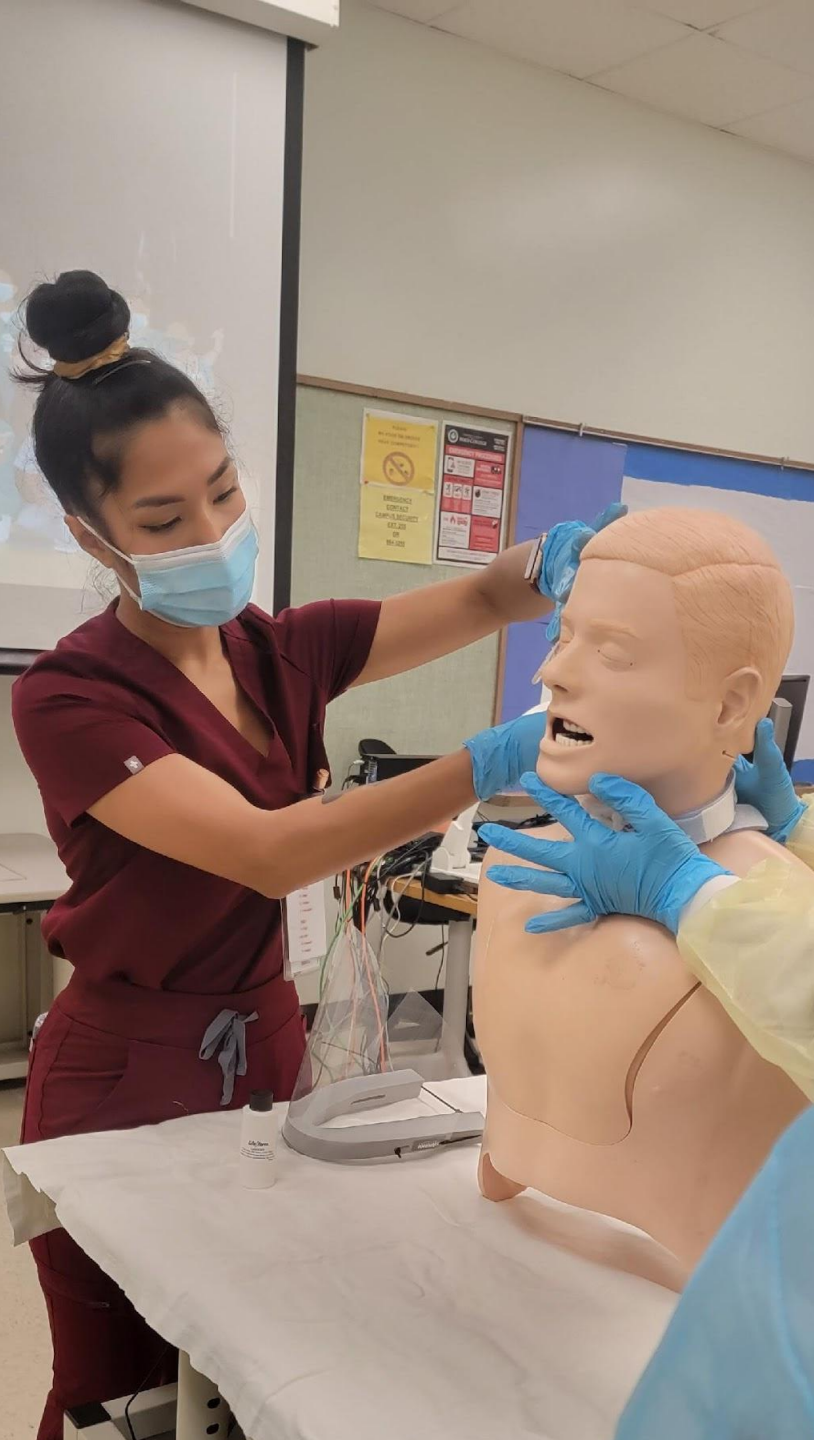
Ho, et al, 2021

- Capability of emergency nurses for electrocardiogram interpretation



Chen, et al, 2022

- Nurses' competency in electrocardiogram interpretation in acute care settings: A systematic review



Target Learners

- Pre-licensure nursing students

CHALLENGING TOPIC



LEARNING OUTCOMES



1 Review cardiac A&P including normal cardiac electrical conduction

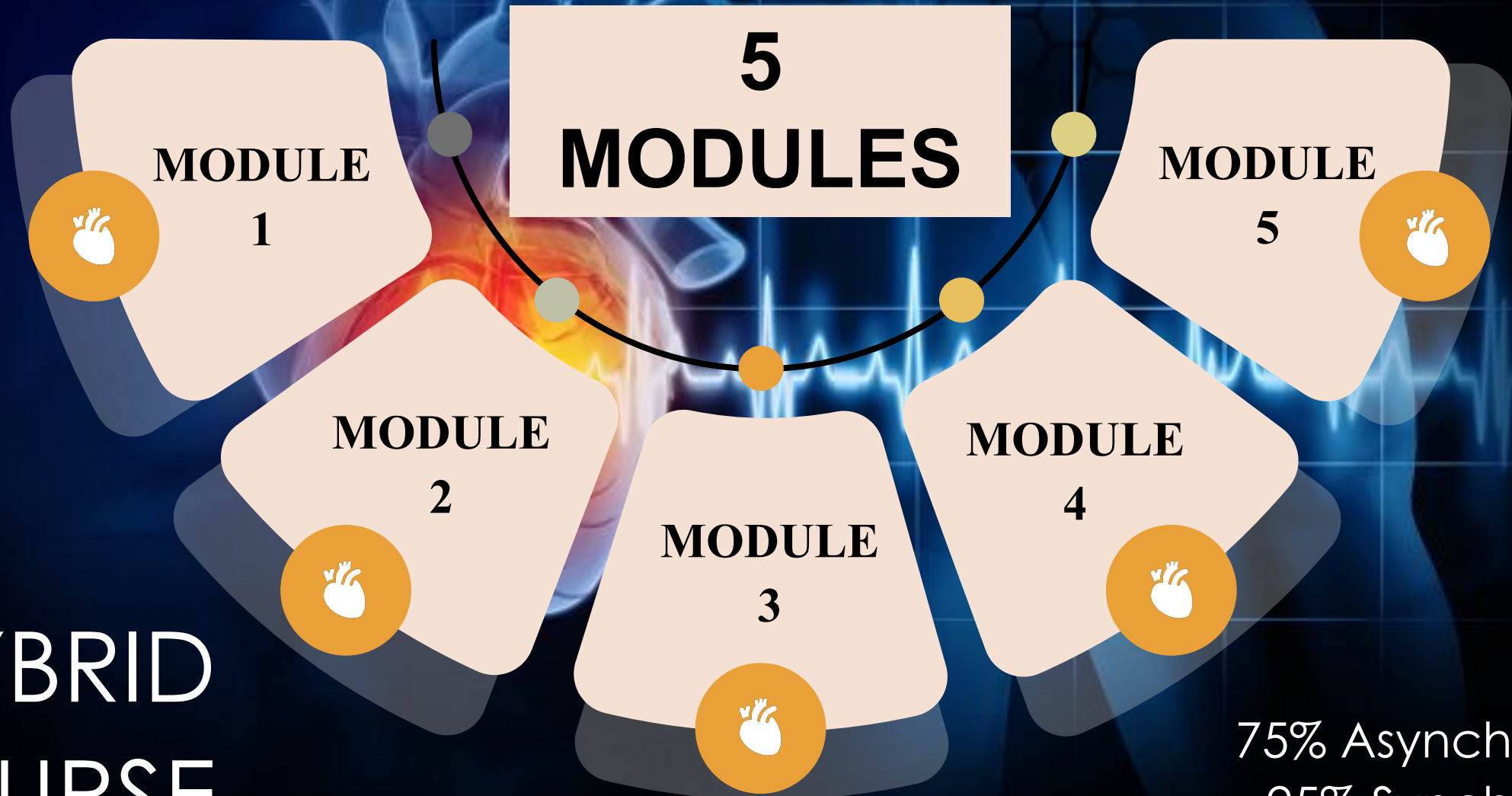
2 Interpret basic EKG rhythms

3 Participate in informed decision-making

4 Assess patient safety implications

5 Affect patient outcomes positively

COURSE STRUCTURE



HYBRID
COURSE

75% Asynchronous
25% Synchronous

COURSE STRUCTURE

1



2 weeks per module

2

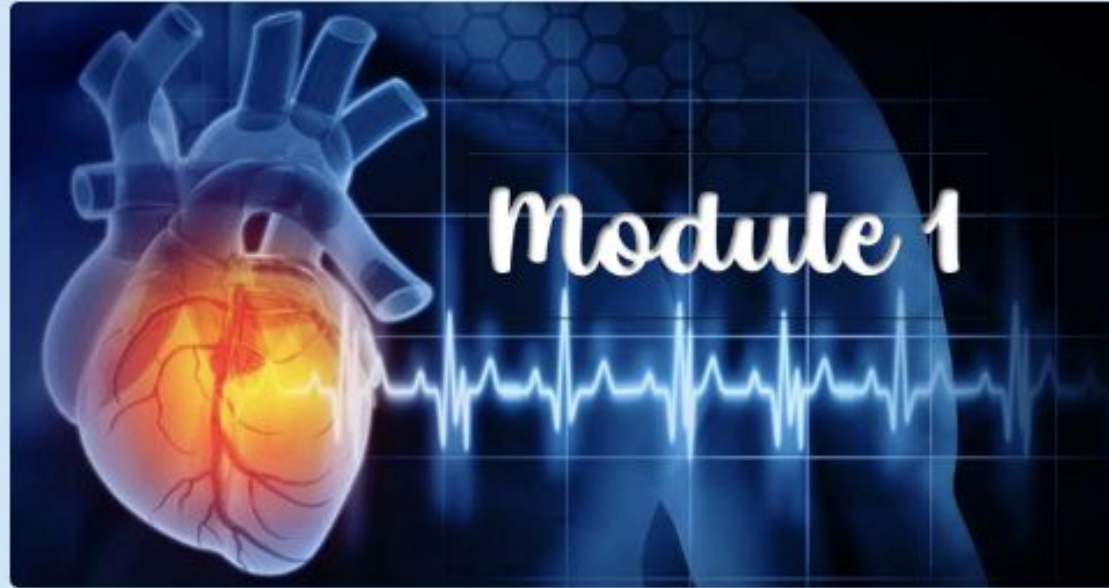


Optional synchronous sessions

3



Proctored exams



▶ Module Learning Objectives

▶ Things to Do

▶ Module Lesson

▶ PowerPoints

▶ Video Resources

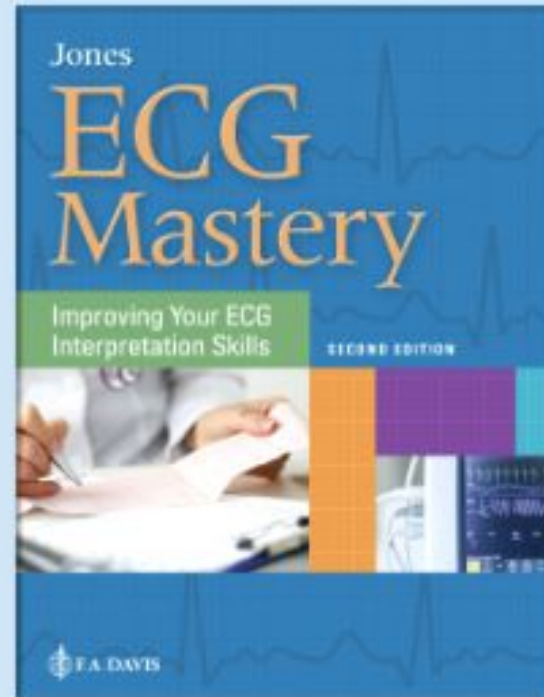
▶ Knowledge Checks

▼ Things to Do



Things to Do

- Read Chapter 1
- Complete Module Activity: Structures and Layers of the Heart
- Case Study: Cardiac Conduction System



Chapter	Pages
1	2 - 15



▼ Module Lesson



Module 1 Recorded Lecture

MODULE 2 RECORDED LECTURES

▼ Part 1



N261 Module 2 Introduction to the Electrocardiog...
Watch later Share

NURS 261
INTRODUCTION TO EKG
INTERPRETATION

MODULE 2

THE EKG & MORE

Watch on YouTube RUTHIE CLEARWATER, MSNED, BSN, ASN, CFRN, CEN, TCRN, CCRN

▶ Module 1

▼ Module 2

Module 2 Recorded Lectures

Module 2 PowerPoints

Module 2 Video Resources

Module 2 Knowledge Checks

Module 3

Module 4

Module 5

Assignments

Tests & Quizzes

Gradebook Classic

Email

Resources

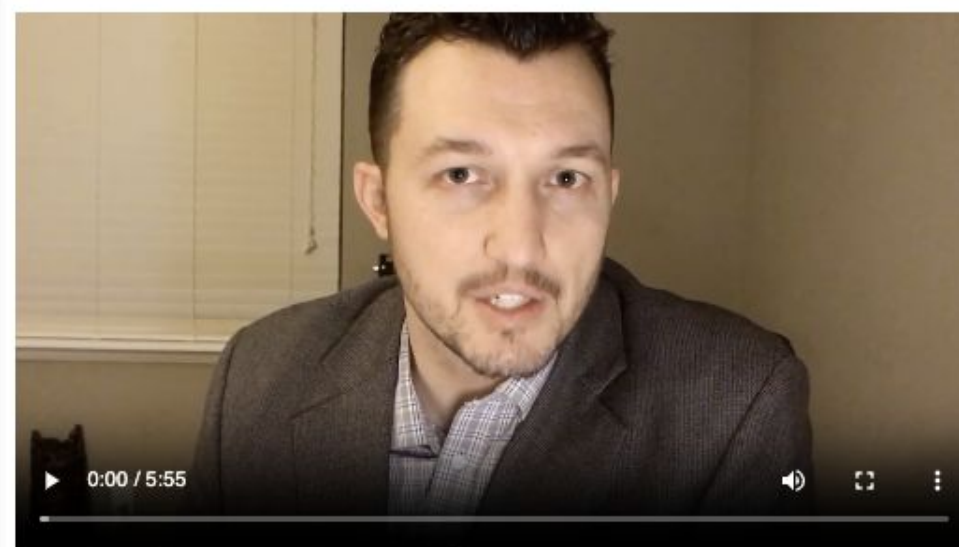
Chat Room

Help

VIDEO RESOURCES



EKG Interpretation and Rhythm Made Easy_PQRST Basic Explanation



ECG Heart Rate Calculation - The Six Second Method

ASSESSMENTS

MODULE 2

KNOWLEDGE CHECKS

Module 2 Assignments

 [Assignment 01: Waves & Complexes](#) [Open on: Jan 5, 2025, 11:55:00 PM] [Due on: Jan 25, 2025, 11:55:00 PM]

 [Assignment 02: Estimating Heart Rate](#) [Open on: Jan 5, 2025, 12:00:00 AM] [Due on: Jan 25, 2025, 11:55:00 PM]

 [Assignment 03: Putting it Together](#) [Open on: Jan 5, 2025, 12:00:00 AM] [Due on: Jan 25, 2025, 11:55:00 PM]

Completed Assignments

- Assignment 01
- Assignment 02
- Assignment 03

Module 2 Test

[Test 2](#)



FILTER >

Question 1

FLAG QUESTION

This rhythm demonstrates which of the following?

Answers: A - D

A 2nd degree AVB Type I

B 2nd degree AVB Type II

C 3rd degree AVB

D 1st degree AVB

TOOLS QUESTION ATTACHMENT NOTES

Question #1 attachment



Question #1 attachment



Close Toolkit

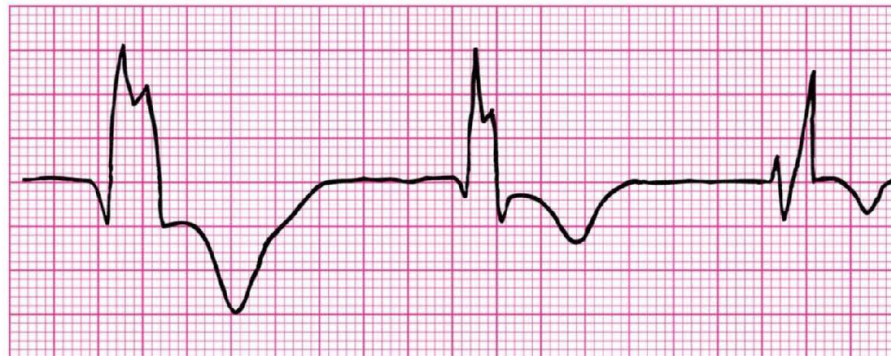
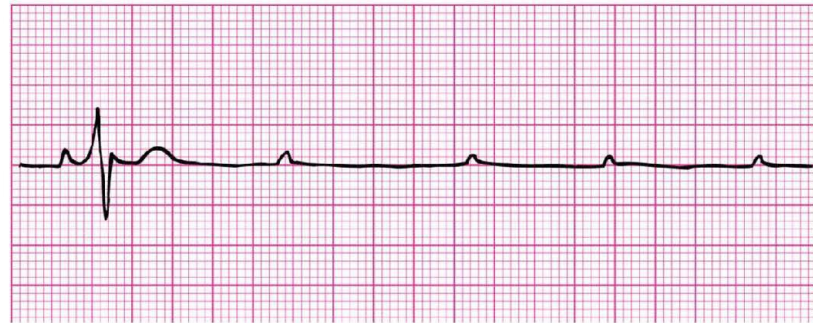
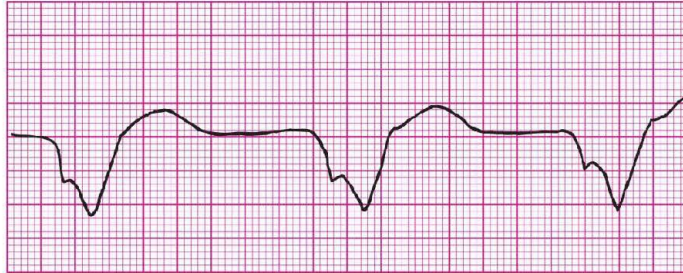
Next



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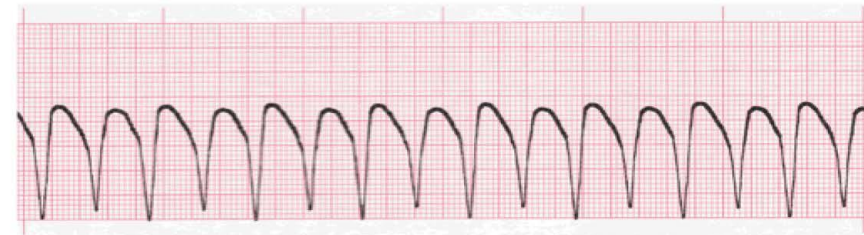
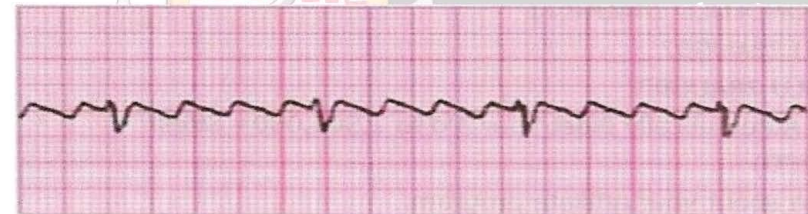
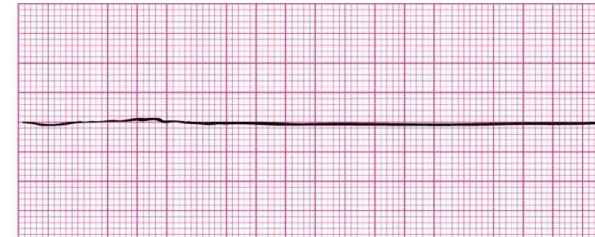
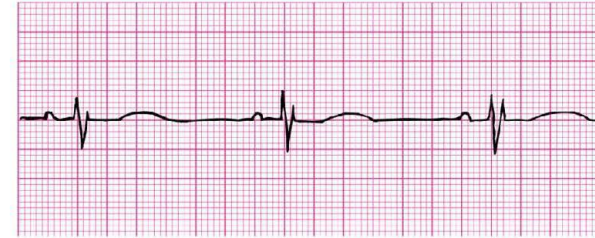
PRACTICE STRIPS: WAVES & COMPLEXES

Name: _____ Date: _____



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PRACTICE STRIPS: WAVES & COMPLEXES

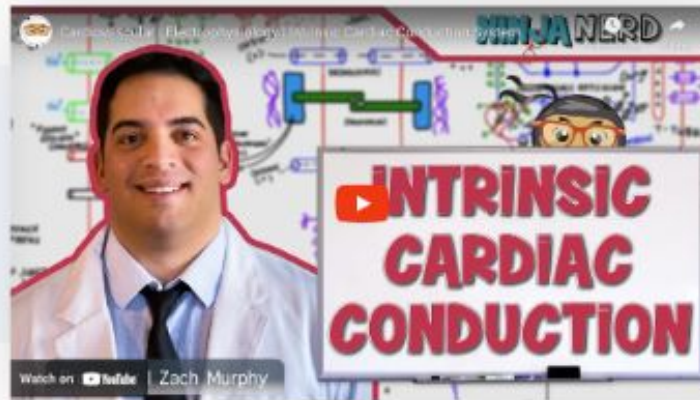


APPLICATION TO PRACTICE

Case Study: Cardiac Conduction System



Edit



**Cardiovascular | Electrophysiology | Intrinsic Cardiac
Conduction System**

Read



Case Scenario:

Instructions:

- Question
- Question
- Question

 Summary & submit

Case Scenario:

You are a nursing student doing a clinical rotation in a cardiac care unit. A 55-year-old female patient, Mrs. Johnson, is admitted with complaints of palpitations and dizziness. She has a history of hypertension and is currently taking medication for it. Upon assessment, you notice that Mrs. Johnson appears anxious and her vital signs are stable. An electrocardiogram (EKG) is ordered for further evaluation.

***** This case study will be graded manually.**

Instructions:

1. Carefully review the case scenario and patient details.
2. Answer each question thoroughly, demonstrating your understanding of cardiac electrical conduction

Explain the normal sequence of cardiac electrical conduction, starting from the sinoatrial (SA) node and ending with the Purkinje fibers including what could happen if that sequence is disrupted at any point.

Think of the primary role of the SA node. What possible problems would you anticipate as the nurse if this cardiac structure malfunctions or stops working?

✔ Check

List 5 symptoms that Mrs. Johnson might exhibit if her AV node malfunctions and explain each one. List an intervention for each symptom and how it will help.

✔ Check

REFLECTIONS

What didn't go well

- **Tedious activities**
- **Too many assignments**



What went well

- **Organization of each module**
- **Topics per module**
- **Simplification of the course**



What can be Improved?

- **Digital EKG assignments**
- **Add Calendly appointments for office hours**
- **Need more varied activities**





QUESTIONS?

REFERENCES

- Arian Zaboli, Dietmar Ausserhofer, Sibilio, S., Toccolini, E., Paulmichl, R., Giudiceandrea, A., Bonora, A., Pfeifer, N., & Gianni Turcato. (2023). *Electrocardiogram interpretation during nurse triage improves the performance of the triage system in patients with cardiovascular symptoms – A prospective observational study*. *68*, 101273–101273.
<https://doi.org/10.1016/j.ienj.2023.101273>
- Ho, J. K.-M., Yau, C. H.-Y., Wong, C.-Y., & Tsui, J. S.-S. (2021). Capability of emergency nurses for electrocardiogram interpretation. *International Emergency Nursing*, *54*, 100953. <https://doi.org/10.1016/j.ienj.2020.100953>
- Chen, Y., Kunst, E., Nasrawi, D., Massey, D., Johnston, A. N. B., Keller, K., & Fengzhi Lin, F. (2022). Nurses' competency in electrocardiogram interpretation in acute care settings: A systematic review. *Journal of Advanced Nursing*, *78*(5).
<https://doi.org/10.1111/jan.15147>
- Funk, M., Fennie, K. P., Stephens, K. E., May, J. L., Winkler, C. G., & Drew, B. J. (2017). Association of Implementation of Practice Standards for Electrocardiographic Monitoring with Nurses' Knowledge, Quality of Care, and Patient Outcomes: Findings from the Practical Use of the Latest Standards of Electrocardiography (PULSE) Trial. *Circulation. Cardiovascular Quality and Outcomes*, *10*(2). <https://doi.org/10.1161/CIRCOUTCOMES.116.003132>
- Hawai'i State Center for Nursing (2022). 2021 Hawai'i Nursing Workforce Supply: The New Graduate RN Workforce.
- Penalo, L., Pusic, M., Friedman, J. L., Rosenzweig, B. P., & Lorin, J. D. (2021). Importance Ranking of Electrocardiogram Rhythms: A Primer for Curriculum Development. *Journal of Emergency Nursing*, *47*(2), 313–320.