OPTIMISING THE IMPACT OF ONLINE LEARNING:

Resources for Healthcare Educators

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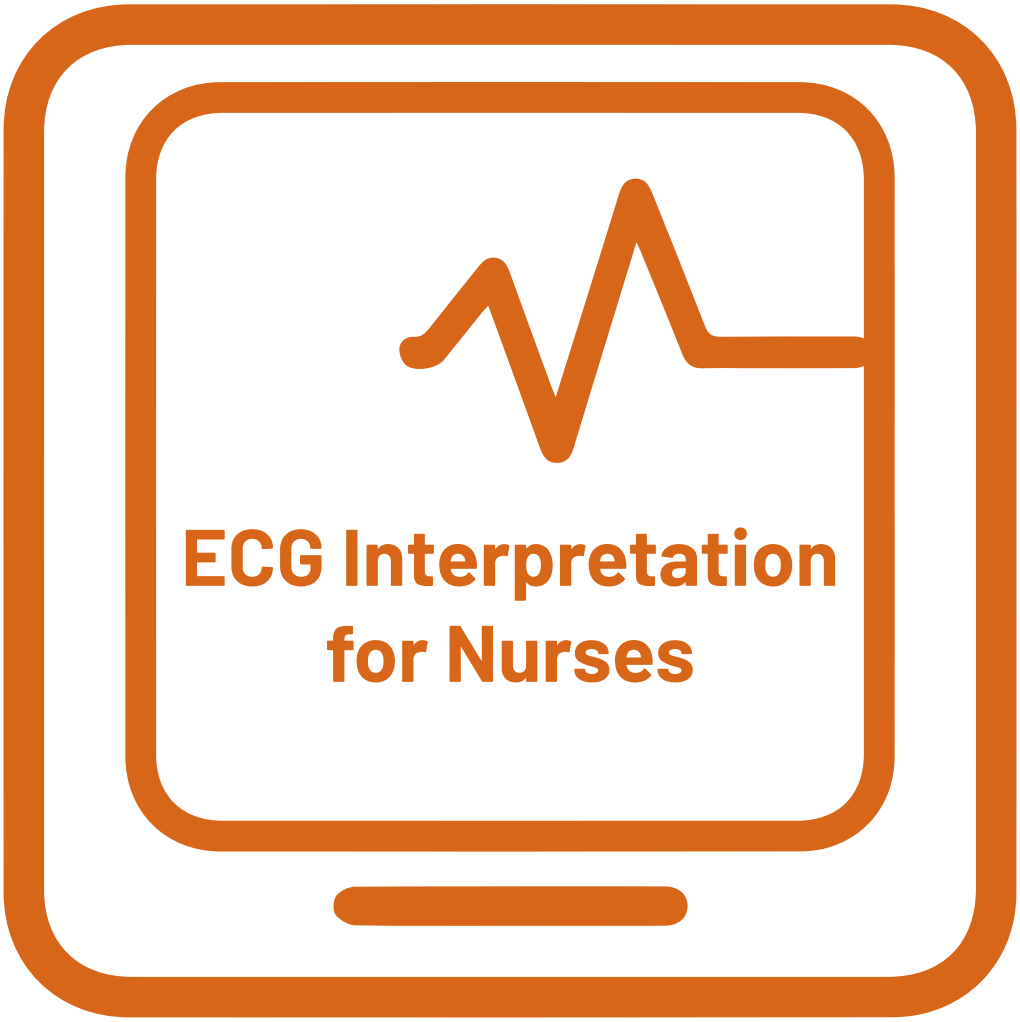
RESOURCE 1



The ECG Interpretation for Nurses eBook originated as an online healthcare app developed with the expertise of digital education researchers and healthcare practitioners from 5 European Union countries participating in an ERASMUS+ project.
The content of the eBook comes from open-source resources and offers nurses and other interested healthcare practitioners a convenient way to familiarize themselves with interpreting electrocardiograms. The e-book can also be used by or adapted by educators at all institutions at any level or country. Note that the term: 'educator' is interchangeable with: practitioner, facilitator, professor, academic staff member, lecturer, instructor, teacher, tutor, and trainer.

Introduction

Electrocardiography is a non-invasive procedure that may be used in conjunction with other diagnostic tests to help diagnose and/or monitor heart conditions. An ECG can help detect arrythmias, coronary artery disease, cardiomyopathies, and heart attacks. Nurses working in varied healthcare settings must be familiar with interpreting basic rhythms and arrythmias to provide timely care to patients.

Purpose

The ECG Interpretation for Nurses consists of 5 brief modules expected to take a total of approximately 12 hours to complete. Learners can work on these modules at any time online and the e-books are also downloadable to your desktop.

Instructions

Nurses use their knowledge, skills and critical thinking when caring for the cardiac client. In this self-directed course, you learn to systematically analyse and interpret cardiac arrhythmias and focus on evidence-based guidelines for cardiac interventions and management.

There are 5 modules in this course:
1. Anatomy, Physiology & Electrical Conduction
2. Interpreting ECG Rhythm Strips
3. Interpreting Sinus Rhythms
4. Atrial Rhythms and
5. Ventricular Rhythms

In each of these modules there are different activities for you.

Read It: Read material in the module related to the topic.
In some Read It sections you will notice there are hyperlinks which take you to evidence-based articles of interest. This reading is not mandatory nor testable but intended to provide you with the opportunity to explore topics in more depth.

Watch It: Educational videos review and reinforce the main concepts related to the module's topic.

Apply It: Transfer the new knowledge attained from reading and reviewing videos into practice by participating in relevant case studies and analysing ECG strips after each module.

Test It: After each module you will test that you have attained the knowledge and skill covered in the Read It! Watch It! and Apply It! sections by completing a brief online quiz. These short quizzes are not graded and are designed to be a learning activity to test your own knowledge. If you get an answer incorrect, review the module's content to discover the correct response.

By completing this four-step process you will gain an overview of cardiac anatomy, physiology, and electrical conduction. In addition, you will learn the etiology of arrythmias, patient signs and symptoms and gain knowledge of nursing interventions.

Learning Outcomes

By the end of the five learning modules learners will be able to:
1. Describe cardiac anatomy, physiology and electrical conduction
2. Identify 5 -lead ECG lead placement.
3. Explain the 5-step process to reading a cardiac rhythm strip
4. Identify normal rhythms and atrial and ventricular dysrhythmias
5. Describe causes, signs and symptoms, nursing interventions and medical treatment for atrial and ventricular dysrhythmias

Learning Activities

Reading in the "Read it" section refers to the individual modules and any recommended links.

MODULE 1

Anatomy, Physiology & Electrical Conduction

It is important that you have an excellent understanding of cardiac anatomy before you start to interpret ECGs. In this introductory module, take time to review cardiac anatomy. Following cardiac anatomy, you will review the physiology of blood flow, and the cardiac cycle. Take note of cardiac output, pre-load and afterload as these are affected by cardiac rhythms and arrhythmias.

Important Concepts:

Properties of cardiac cells:

- Automaticity: The ability to generate an electrical impulse spontaneously, without external stimulation
- Excitability: Ability of the cardiac cell to depolarize in response to an electrical stimulus.
- Absolute Refractoriness: The period of time when cardiac electrical cells are unresponsive to any stimulus regardless of strength.
- Rhythmicity: The ability of cardiac pacemaker cells to fire at regular intervals.
- Conductivity: The spread of electrical activity from one specialized cardiac cell to another.

Learning Outcomes

1.Describe cardiac anatomy
2.Explain cardiac physiology
    a.Blood flow
    b.Cardiac cycle
    c.Cardiac Output
    d.Pre-load/After-load
3.Electrical conduction system
    a.Identify and relate waveforms to the cardiac cycle.

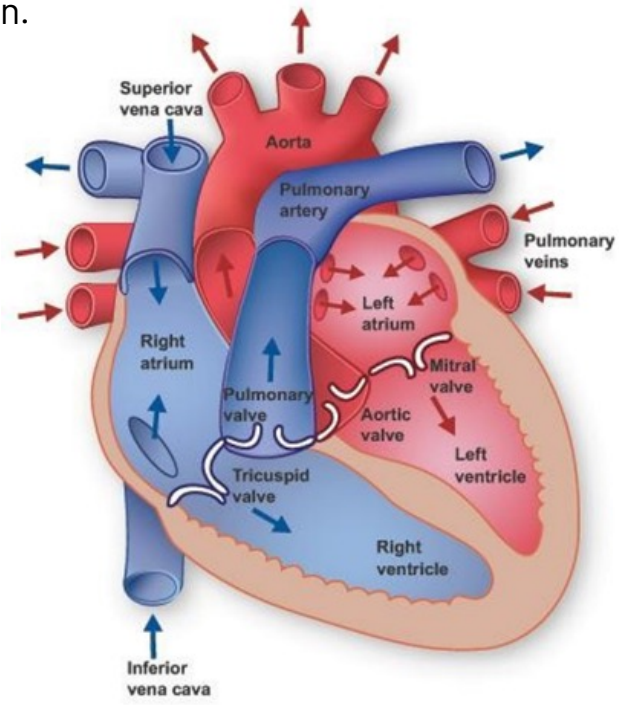
Cardiac Anatomy

2 upper chambers are the right and left atria

2 lower chambers are the right and left ventricles

2 Atrioventricular valves, the Mitral & Tricuspid, open with ventricular diastole and close with ventricular systole.

2 Semilunar valves. The Aortic valve opens on ventricular contraction so blood flows into the aorta and out to the rest of the body. The Pulmonic valve also opens with ventricular systole so deoxygenated blood is pumped from the right ventricle to the pulmonary circulation.



Pulmonary Circulation

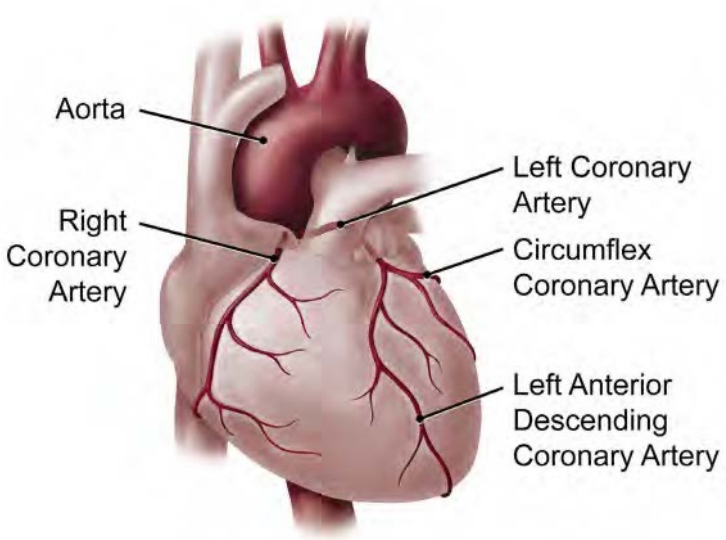
- Unoxygenated
– right side of the heart

- Systemic Circulation

- Oxygenated
– left side of the heart

Watch it!

How the Heart Works (3:29)



Source: https://www.ottawaheart.ca/coronary-artery-disease-patient-guide/about-heart-disease

2 major vessels of the coronary circulation are the left and right coronary arteries that originate at the base of the aorta from openings called the coronary ostia behind the aortic valve leaflets.

Left main coronary artery branches into the left anterior descending and circumflex branches and is most important as supplies blood to the left ventricle of the heart.

Right main coronary artery supplies blood to the right side of the heart.

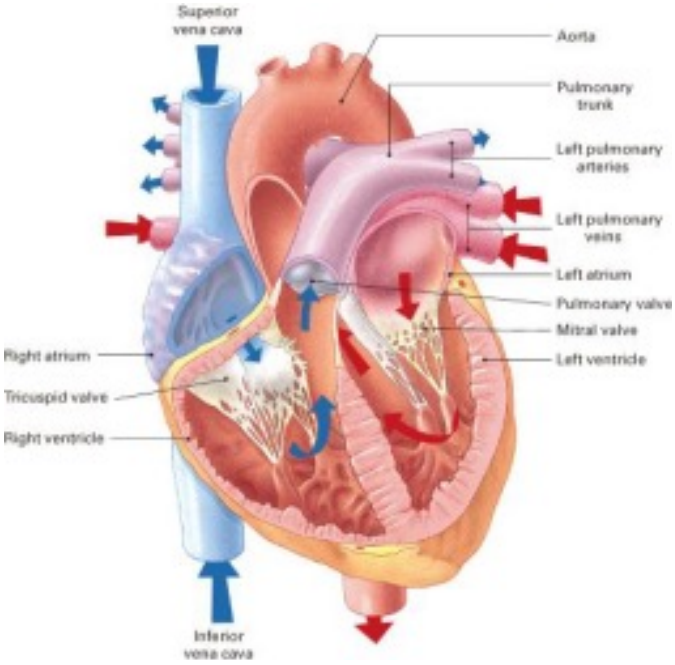
Physiology of Oxygenated and Unoxygenated Blood Flow

Unoxygenated blood flows from the
Inferior and superior vena cava
↓
Right Atrium
↓
Tricuspid Valve
↓
Right Ventricle
↓

Pulmonic Valve
↓
Lungs
↓
Through Pulmonary system

Oxygenated blood flows from the

Pulmonary veins
↓
Left Atrium
↓
Mitral Valve
↓
Left Ventricle
↓
Aortic Valve
↓
Systemic Circulation



Watch It!

Human Circulatory System

Physiology

The cardiac cycle represents the time sequence between ventricular contraction and ventricular relaxation.
Systole is the simultaneous contraction of the ventricles.
Diastole is synonymous with ventricular relaxation and is the time when ventricles fill passively with blood from the atria to 70% capacity.

Heart rate (HR) is the number of contractions or beats per minute (bpm). A normal heart rate is 60 – 100 beats per minute.

Stroke volume (SV) is the amount of blood pumped out of ventricles in a single heart beat or contraction. A normal stroke volume is 60 – 130 ml.

Cardiac output (CO) refers to the amount of blood pumped by the left ventricle in one minute. A normal cardiac output is 4 – 8 L/min.

Cardiac Output = Stroke Volume x Heart Rate

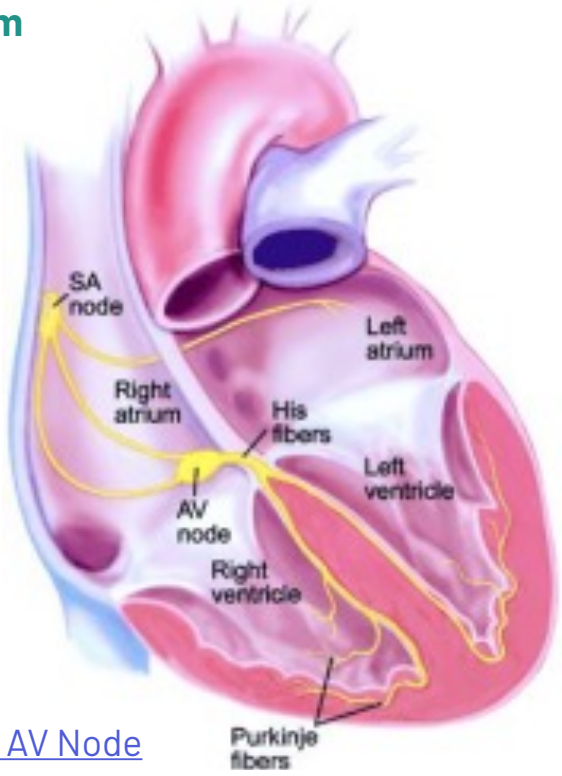
Example: SV – 60 ml X HR - 100 bpm = CO = 600 ml

Pre-load is the volume and stretch of the ventricular myocardium at the end of diastole.

After-load is the amount of pressure against which the left ventricle must work during systole to open the aortic valve. This number is clinically measured as the systolic blood pressure.

Normal Electrical Cardiac Conduction System

SA node
↓
Inter-nodal pathways
↓
AV node
↓
Bundle of his
↓
Left & Right bundle branches
↓
Purkinje fibers



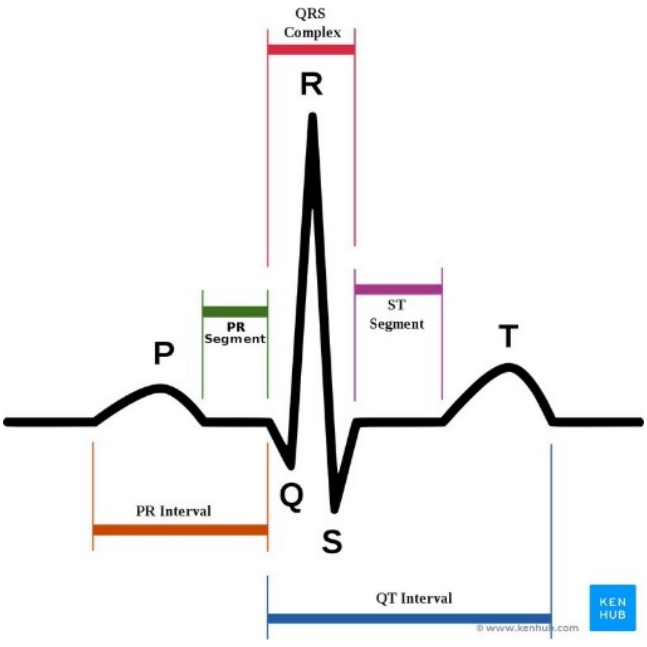
Watch It!

[The Pacemaker Potential of the SA Node and the AV Node]

Conduction System Wave Forms

One complete cardiac cycle =

P wave: Atrial depolarization (contraction)
↓
Q, R, S, (QRS complex) : Ventricular depolarization & atrial repolarization
↓
T wave: Ventricular repolarization (resting phase)



Module 1 takes approximately 1.5 hours to complete including test

Read it!

Module 1: Anatomy, Physiology & Electrical Conduction

Watch it!

How the Heart Works (3:29)
How Blood Flows Through the Heart (9.14)
Circulatory System (2:00)
The Pacemaker Potential of the SA Node and the AV Node (5:26)

Apply it!

Demonstrate your knowledge of normal patient anatomy by completing the cardiac anatomy quizzes found at the link below. The three tests should take you approximately 10 minutes to compete. Free Anatomy Quiz

Test it!

Take the Module 1 multiple choice quiz below. You should get all answers correct before progressing to Module 2.

Questions

Module 1 Anatomy, Physiology & Electrical Conduction

1. Which structure is the primary or natural pacemaker of the heart?
a. Ventricular tissue
b. Atrioventricular node
c. Sinoatrial node
d. Purkinje fibers

2. True or False? Unoxygenated blood flows from inferior and superior vena cava to:
Right Atrium
↓
Tricuspid Valve
↓
Right Ventricle
↓
Pulmonic Valve
↓
Lungs
↓
Through Pulmonary system
a. True
b. False

3. Place the following components of the cardiac conduction pathway in the correct anatomic order.
1. Atrioventricular node
2. Bundle branches

3. Bundle of His
4. Internodal pathways
5. Purkinje fibers
6. Sinoatrial node

A. 6, 1, 4, 3, 2, 5
B. 6, 1, 3, 2, 4, 5
C. 6, 1, 4, 2, 3, 5
D. 4, 3, 2, 5, 6, 1

4. What is the function of the atrioventricular (AV) valves?

a. Assist with blood flow to the lungs and aorta
b. Prevent blood regurgitation back into the ventricles
c. Prevent backflow of blood into the atria during ventricular contraction
d. Contribute to ventricular filling by atrial kick

5. What is the definition of automaticity as it relates to cardiac conduction?

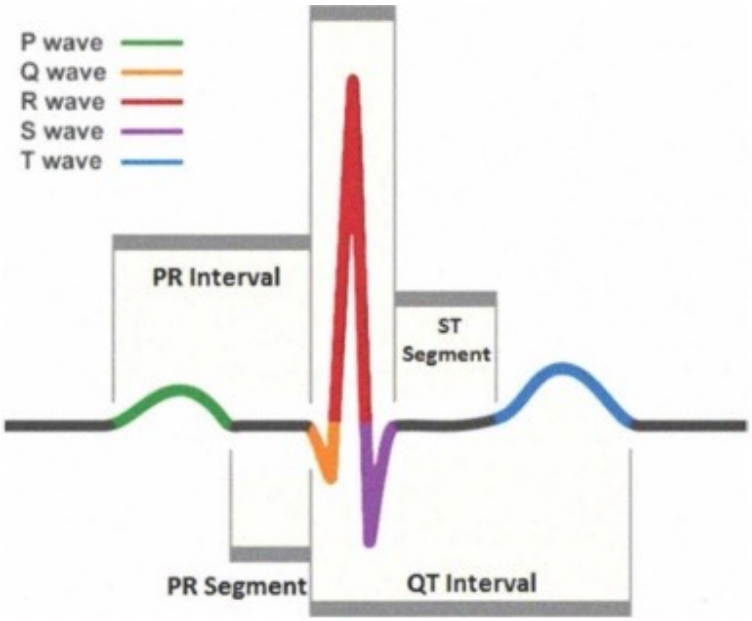
a. Ability of the cardiac cell to depolarize in response to an electrical stimulus.
b. Ability of cardiac pacemaker cells to fire at regular intervals.
c. The spread of electrical activity from one specialized cardiac cell to another.
d. Ability to generate an electrical impulse spontaneously, without external stimulation

Correct answers: 1.C 2.A 3.A 4.C 5.D

MODULE 2

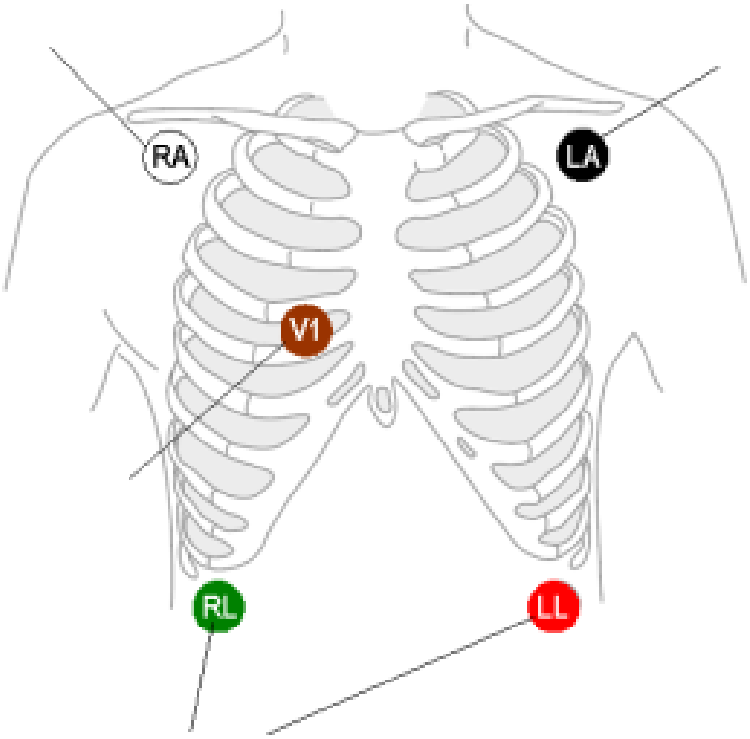
Interpreting ECG Rhythm Strips

Your review of the cardiac conduction system has prepared you to understand cardiac rhythms and interpret them. This module takes you from reading ECG graph paper through a 5-step approach to interpreting rhythm strips.



Important Concepts:

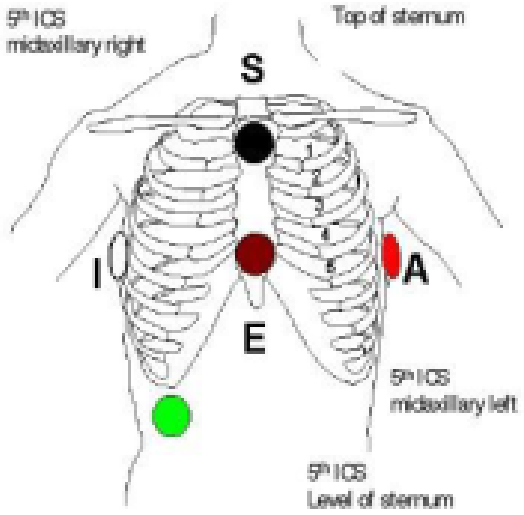
Alternate 5-lead electrode placement



Learning Outcomes

- Identify 5-lead ECG lead placement.
- Use a systematic process for interpreting Electrocardiograms (ECG).
- Identify normal and abnormal components on the ECG.

Lead Placement



EASI™ Lead Placement

Using a mnemonic makes it easier to remember the lead placement sequence.

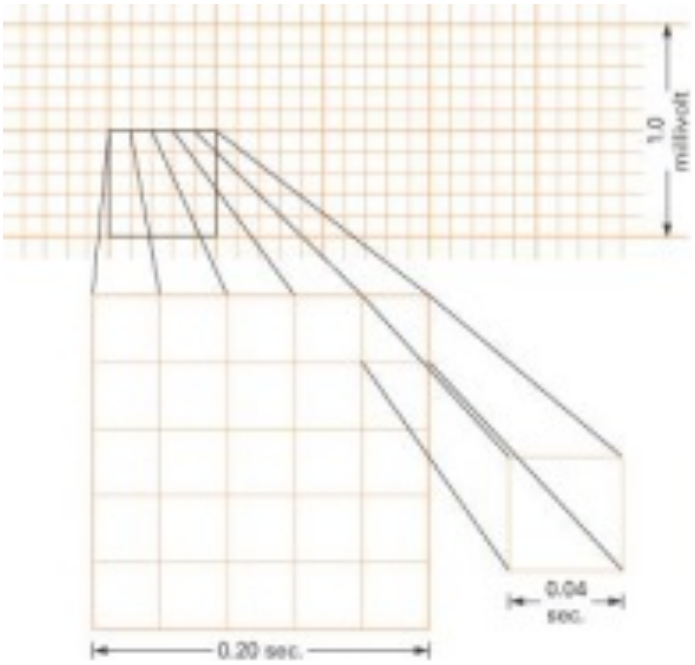
E - Brown: lower sternum
A - Red: Left mid-axillary (5th intercostal space)
S - Black: Upper sternum (just below sternal angle)
I - White: Right mid-axillary (5th intercostal space
Green: Anywhere

ECG as a Graphic Representation of Cardiac Activity

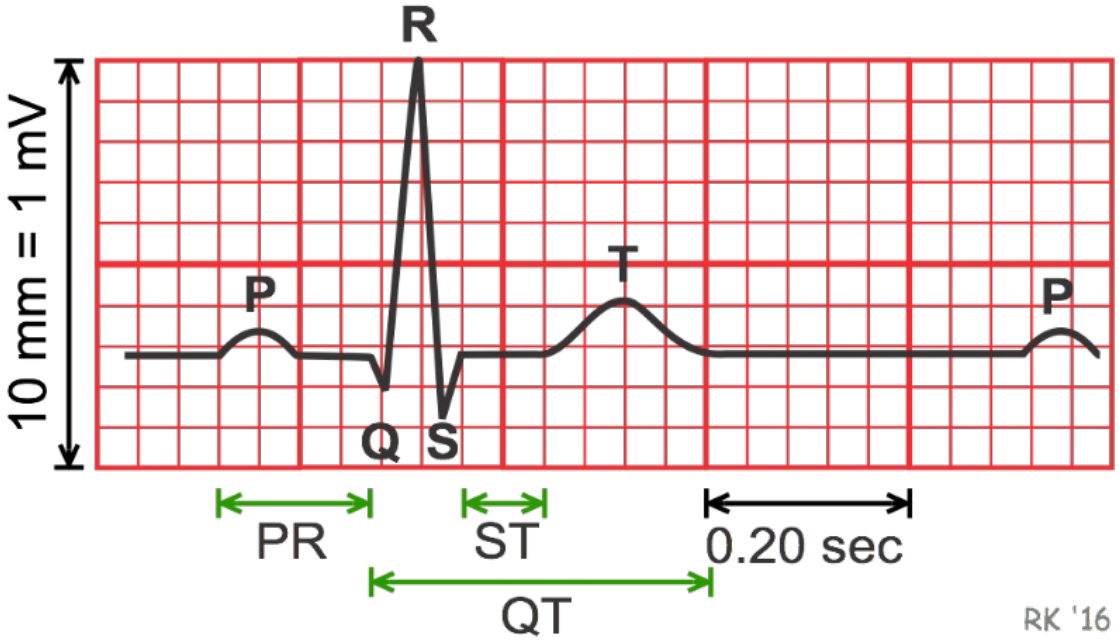
Graph paper is used for ECGs as it allows a visual measurement of Time (rate) which is measured on the horizontal line, and Amplitude (voltage) measured on the vertical line.

Using the squares of the graph you can calculate sections of the cardiac cycle. Each square equals Width: 1 millimeter (mm); Time interval: 0.04 seconds, so 1 small square = 0.04 seconds .

Darker lines divide paper into every 5th square vertically and horizontally so large squares measure 5 mm in height and width and represents a time interval of 0.20 seconds. There are 25 small squares in each large square, and 1 large square = 0.20 seconds.



Source: Klabunde, R. (2022). Cardiovascular Physiology Concepts



Watch it!

ECG Interpretation - Time and the ECG [9:56]

Interpreting ECG Rhythm Strips in f Steps

Prior to looking at the ECG, always assess your patient.

Read every strip from left to right, starting at the beginning of the strip. Apply the five-step systematic approach in this module for consistency with each strip that you interpret.

The five-step approach includes analysis of:

1.Heart rate
2.Heart rhythm
3.P wave
4.PR interval
5.QRS complex

Step 1 – Heart Rate

Count the number of electrical impulses as represented by PQRST complexes conducted through the myocardium in 60 seconds (1 minute). To determine the Atrial rate, count the number of P waves. To determine the Ventricular rate, count the number of QRS complexes.

Methods to determine heart rate

1. The 6 second method uses a 6 second interval on ECG strip. The strip is marked by 3 or 6 second tick marks on the top or bottom of the graph paper and the number of QRS complexes occurring within the 6 second interval are counted and multiplied that number by 10

2. Using rate determination chart count spaces between R to R then find number of spaces on the chart to determine the rate. This is a more accurate and preferred calculation of HR

EKG RATE DETERMINATION CHART

Spaces	Rate	Spaces	Rate	Spaces	Rate	Spaces	Rate
3	500	12.5	120	22	68	32	47
3.5	428	13	115	23	65	32.5	46
4	374	13.5	111	23.5	63	33	45
4.5	334	14	107	24	62	34	44
5	300	15	100	24.5	61	35	43
5.5	273	15.5	97	25	60	36	42
6	250	16	94	25.5	59	37	41
7	214	16.5	91	26	58	37.5	40
7.5	200	17	88	26.5	57	38	39
8	188	17.5	86	27	56	39	38
8.5	176	18	83	27.5	55	40	37
9	167	18.5	81	28	54	42	36
9.5	158	19	79	28.5	53	43	35
10	150	19.5	77	29	52	44	34
10.5	143	20	75	29.5	51	46	33
11	136	20.5	73	30	50	47	32
11.5	130	21	71	30.5	49	48	31
12	125	21.5	70	31	48	50	30

Heart Rate Example:

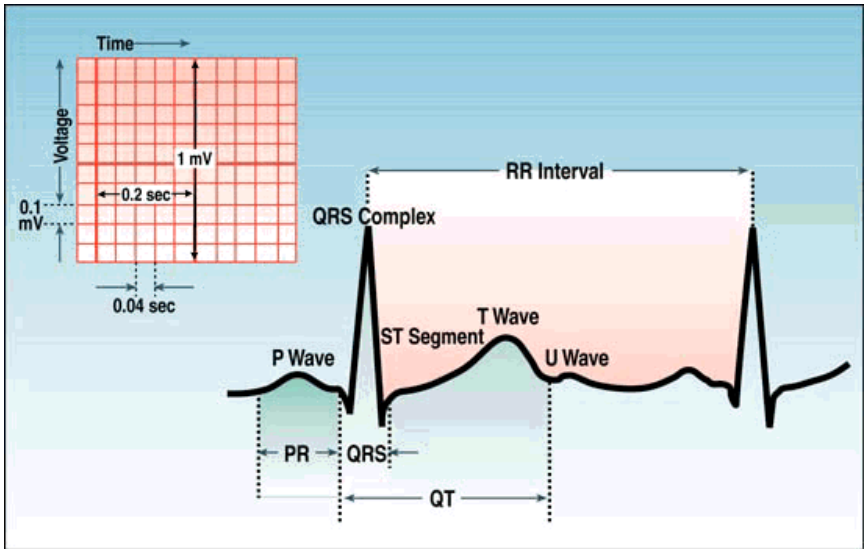
Find an R to R 2. Count the small boxes between the R's = 15 3. On the chart find "15 spaces" = 100bpm

Step 2 – Rhythm

A sequential beating of the heart is a result of the generation of electrical impulses. These are classified as:

Regular pattern: Interval between the R waves is regular.
Irregular pattern: Interval between the R waves is not regular.

Regular Rhythm measures the intervals between R waves (measure from R to R). If the intervals vary by less than 0.06 seconds or 1.5 small boxes, the rhythm is considered to be regular.

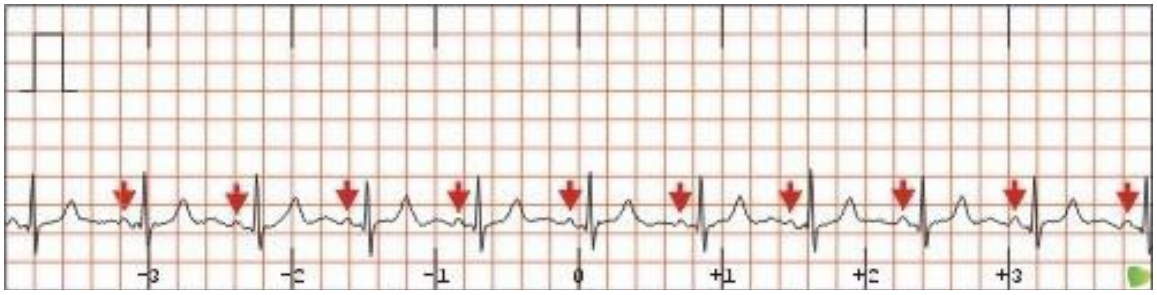


Irregular Rhythm measures the intervals between the R waves (from R to R). If they vary by greater than 0.06 seconds or 1.5 small boxes, the rhythm is considered to be irregular.

Step 3 - P Wave

The P wave occurs when the left and right atria depolarize. The P wave denotes that the SA node is pacing.

The baseline of an ECG tracing is called the isoelectric line (denotes resting membrane potentials), and the P wave is the first deviation from the isoelectric line. It should be rounded and upright and regularly repeated. This pattern is referred to as a sinus rhythm.

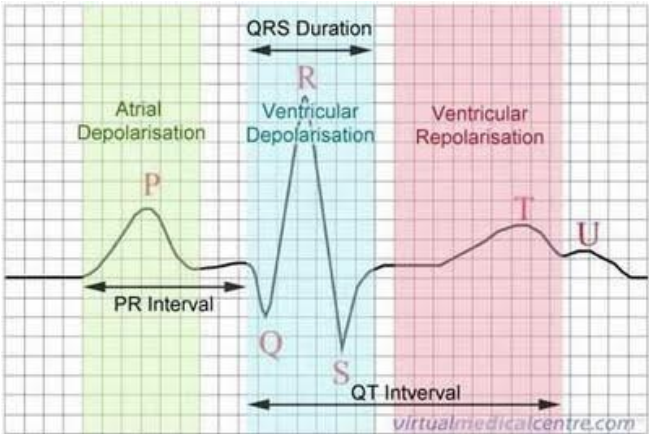


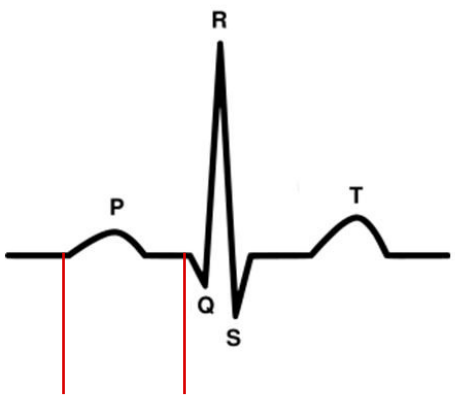
P wave: 5 questions to ask

1. Are P waves present?
2. Are P waves occurring regularly?
3. Is there one P wave present for every QRS complex present?
4. Are the P waves smooth, rounded, and upright in appearance, or are they inverted?
5. Do all P waves look similar?

Step 4 – PR Interval

The P-R interval measures the time interval from the start of atrial contraction to the start of ventricular contraction, thus it measures from onset of P wave to the onset of the QRS complex. A normal P-R interval is 0.12–0.20 seconds (3-5 small squares)





Measuring PR Interval: Red lines indicate where calipers would be placed to measure PR interval.

PR interval: 3 questions to ask

1. Are the PR intervals greater than 0.20 seconds?
2. Are the PR intervals less than 0.12 seconds?
3. Are the PR intervals consistent across the ECG strip?

Step 5 – QRS Complex

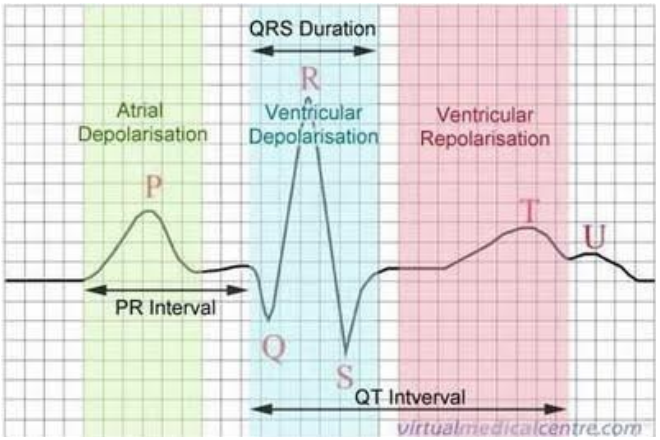
The QRS complex presents depolarization or contraction of the ventricles.

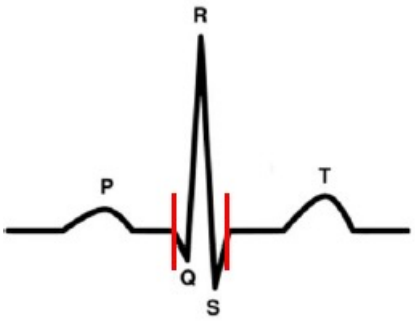
The Q wave is the first negative or downward deflection of this large complex.

The R wave is the first upward or positive deflection following the P wave (tallest waveform).

The S wave is the sharp, negative or downward deflection that follows the R wave.

A normal QRS interval is 0.06-0.12 seconds (1½ to 3 small boxes)





Measuring QRS complex: Red lines indicate where calipers should be placed to measure QRS.

QRS complex: 3 questions to ask:

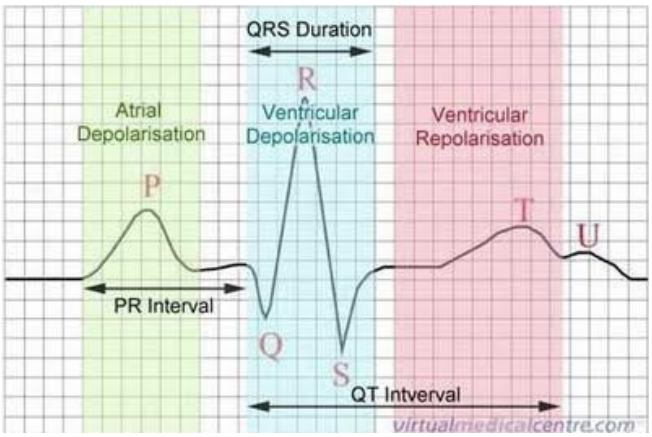
1. Are the QRS complexes greater than 0.12 seconds (in width)?
2. Are the QRS complexes less than 0.06 seconds (in width)?
3. Are the QRS complexes similar in appearance across the ECG strip?

Practice Strip for Interpreting ECG Rhythm

1. HR = # of boxes between R's = 19 spaces = 79bpm
2. Rhythm = regular or irregular = regular (R-R's are equal)
3. P waves = P wave for every QRS? = yes

4. PR interval = measure from beginning of P to beginning of QRS = 0.16
5. QRS = measure from start of Q to end of S = 0.08

T Wave



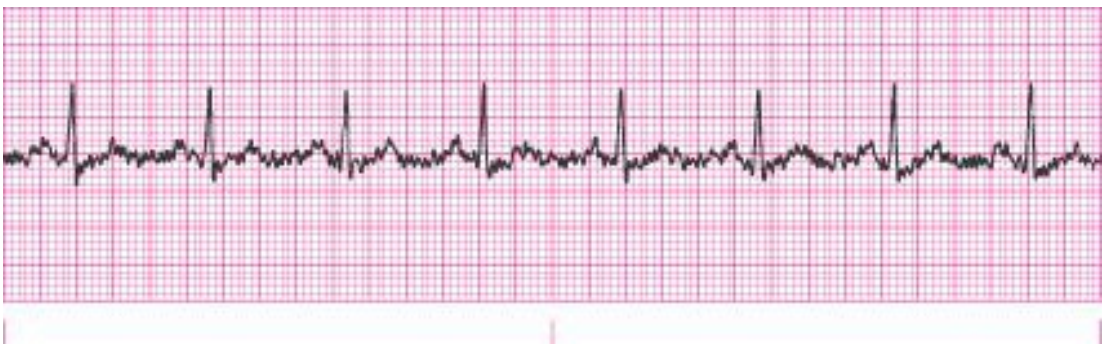
The T wave is produced by ventricular repolarization or relaxation and is commonly seen as the first upward or positive deflection following the QRS complex.

U Wave

The U wave is not typically visible on ECG strips. If visible, it follows the T wave, appearing much smaller than the T wave. U waves have a rounded, upright, or positive deflection if they are present and represent the last phase of ventricular repolarization. Prominent U waves are characteristic of hypokalemia, and very prominent U waves may occur in patients taking certain drugs: Beta blocker such as sotalol, antiarrhythmics such as quinidine, or one of the phenothiazines. U waves may also be present after patients have had a cerebrovascular accident.

Interpreting ECG Rhythm Strips Artifact

Artifacts are waveforms on the ECG strip that are from sources outside the heart. They cause interference is seen on the monitor or EKG strip



Four causes of artifacts are:
1. Patient movement (most common)
2. Loose or defective electrodes (fuzzy baseline)
3. Improper grounding (60 cycle interference)
4. Faulty ECG apparatus

Watch it! Normal sinus rhythm on an EKG (8:52)

Summary

In this module you have learned how to do a 5-lead ECG lead placement.
You have use a 5 step systematic process for interpreting electrocardiograms and are able to identify normal waveforms and abnormal artifacts or interferences on the ECG.
You are now ready for Module 3 where you recognize sinus dysrhythmias and explain the cause, significance, symptoms, and treatments.

Module 2 takes approximately 1.5 hours to complete including test

Read it!

Module 2: Interpreting ECG Rhythm Strips

Watch it!

Normal sinus rhythm on an ECG (8:52)

Apply it!

Calculate the cardiac rate in the following ECG strips.

Example #1

The cardiac rate is:
a. 70
b. 100
c. 54
d. 130

Correct Answer: C. 54. Explanation: This is a full 10-second rhythm strip, and there are a total nine QRS complexes. The QRS complexes are about 5 ½ large boxes apart. Looking at the above image, you can see that the ventricular heart rate is between 50 and 60 bpm. Multiply the number of QRS complexes by six, and the exact heart rate is 54 bpm. There is one P wave for each QRS complex, thus the atrial rate is the same.

Example #2

The cardiac rate is:
A. 70
B. 150
C. 54
D. 102

Correct Answer: D. 102 Explanation: The QRS complexes are exactly three large boxes apart, thus the ventricular heart rate is 100 bpm. Multiply the number of QRS complexes on this strip: 17 x 6 = 102. There is one P wave for each QRS complex, thus the atrial rate is the same.

Source: Healio Learn the Heart

Test it!

Test your knowledge by completing the Module 2 multiple choice quiz. You should get all answers correct before progressing to Module 3.

Questions
Module 2 Interpreting ECG Rhythm Strips

1.True or False? The EASI Lead Placement Color Code is:
E Brown: Lower sternum (5th intercostal space)
A Red: Left mid-axillary line (5th intercostal space)
S Black: Upper sternum (just below sternal angle)
I White: Right mid-axillary line (5th intercostal space)
Green: Anywhere
a. True
b. False

2. What is the order in which to apply the five-step approach to interpreting ECG rhythms?
a. Heart rate, Heart rhythm, QRS complex, P wave, PR interval
b. P wave, PR interval, QRS complex, Heart rhythm, Heart rate
c. Heart rate, Heart rhythm, P wave, PR interval, QRS complex
d. Heart rhythm, Heart rate, P wave, PR interval, QRS complex

3.True or False: ECG graph paper allows a measurement of heart rate on the horizontal line.

a. True
b. False

4.The steps to the 6 second method to determine heart rate are to identify the

a. 10 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 6.
b. 6 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 10.
c. 3 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 20.
d. 20 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 3.

5. The P-R interval is measured from onset of P wave to the onset of the QRS complex. A normal interval is:

a. 0.6 seconds
b. 0.6 – 0.12 seconds
c. 0.12 – 0.20 seconds
d. 0.16 seconds

MODULE 3

Interpreting Sinus Rhythms

Now that you can read the ECG graph paper and have mastered what a normal PQRST complex looks like, it is time to identify normal cardiac rhythms. Normal sinus rhythm (NSR) originates from the sinus node and describes the characteristic rhythm of a healthy heart.

Important Concepts:

Although the rate in NSR is generally regular, it can vary. Irregularities in the sinus rate are sinus arrhythmias; a faster rate than normal range is called sinus tachycardia, a slower rate is sinus bradycardia. In this module you will identify a total of five sinus rhythms and their significance for the patient.

Learning Outcomes

- Use the 5-step approach to identify normal sinus rhythm (NSR).
- Identify 5 common variations of NSR dysrhythmias on ECG.
- Relate cause, significance, symptoms, and treatment

Sinus Rhythms

Sinus rhythms originate in the sinoatrial node (SA node) and there are 5 common variations of a sinus rhythm:

- Normal sinus rhythm (60 – 100 bpm)
- Sinus bradycardia (< 60 bpm)
- Sinus tachycardia (>100 bpm)
- Sinus arrhythmia (60 – 100 bpm)
- Sinus pause/arrest

Normal Sinus Rhythm

Sinus rhythm is the normal regular rhythm of the heart set by the natural pacemaker of the heart called the sinoatrial node (SA node), which is located in the wall of the right atrium. Normal cardiac impulses start there and are transmitted to the atria and down to the ventricles.

Watch it!

The Pacemaker Potential of the SA Node and the AV Node (5:26)

Five Steps to identify Normal Sinus Rhythm

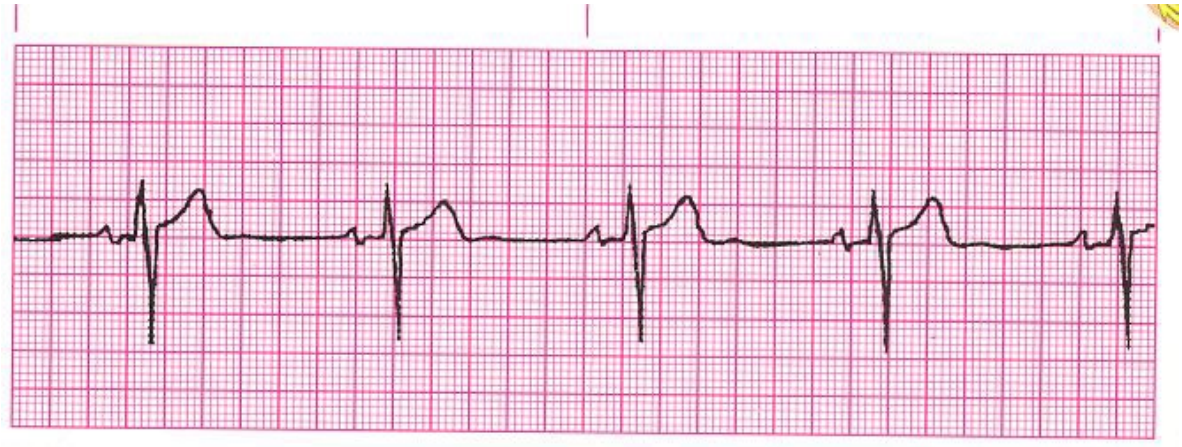
1. What is the rate?	60-100 beats per minute
2. What is the rhythm?	Atrial rhythm regular and Ventricular rhythm regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Yes
4. What is the length of the PR interval?	0.12-0.20 seconds (3-5 small squares)
5. Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3

Normal Sinus Rhythm Nursing Interventions

No interventions are required for NSR. Monitor the patient if ordered by physician.

Sinus Bradycardia

Sinus bradycardia is a regular but unusually slow heartbeat (less than 60 bpm). Sinus bradycardia can occur as a normal variation in athletes, during sleep, or in response to a vagal maneuver.



Five Steps to identify Sinus Bradycardia

1. What is the rate?	< 60 beats per minute
2.What is the rhythm?	Atrial rhythm regular and Ventricular rhythm regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Yes
4.What is the length of the PR interval?	0.12-0.20 seconds (3-5 small squares)
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Sinus Bradycardia

The following are common causes of sinus bradycardia:

- Hypoglycemia
- Hypothermia
- Hypothyroidism
- Medications
- Toxic exposure
- Previous cardiac history or Myocardial Infarction of the Inferior wall involving right coronary artery

Signs and Symptoms

- Syncope
- Dizziness
- Chest Pain
- Shortness of Breath
- Exercise Intolerance
- Cool, clammy skin

Risk and Medical Tx of Sinus Bradycardia

There is a risk of reduced Cardiac Output

Medical Treatment will be based on whether patient is symptomatic. Atropine may be administered and placing a cardiac pacing device if the patient is hemodynamically compromised.

Sinus Bradycardia Nursing Interventions

- First assess patient – are they symptomatic?

- Give oxygen and monitor oxygen saturation
- Monitor blood pressure and heart rate
- Start IV if not already established
- Notify MD

Sinus Tachycardia

Sinus Tachycardia is a fast heartbeat related to a rapid firing of the sinoatrial (SA) node. The clinical dysrhythmia depends on the underlying cause. It may be normal depending on the patient.

5 Steps to Identify Sinus Tachycardia Rhythm

1. What is the rate?	101-160 beats per minute
2.What is the rhythm?	Atrial rhythm regular and Ventricular rhythm regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Yes
4.What is the length of the PR interval?	0.12-0.20 seconds (3-5 small squares)
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Sinus Tachycardia

Causes of Sinus Tachycardia include:

- Damage to heart tissues from heart disease
- Hypertension
- Fever
- Stress
- Excess alcohol, caffeine, nicotine, or recreational drugs such as cocaine
- Medication side effect
- Response to pain
- Electrolytes imbalance
- Hyperthyroidism

Signs and Symptoms

- Dizziness
- Shortness of breath
- Lightheadedness

- Rapid pulse rate
- Heart palpitations
- Chest pain
- Syncope

Risk and Medical Tx of Sinus Tachycardia

Risks of Sinus Tachycardia includes

- Potential fall of Cardiac output due to inadequate ventricular filling time
- Myocardial oxygen demand increases
- May precipitate myocardial ischemia or infarct

Medical Treatment is aimed at finding and treating cause efficiently and preventing cardiac damage.

Sinus Tachycardia Nursing Interventions

- Assess patient – Are they symptomatic? Are they stable?
- Give oxygen and monitor oxygen saturation
- Monitor blood pressure and heart rate
- Start IV if not already established
- Notify MD

ACLS Protocol

Look for the cause of the tachycardia and treat it accordingly:

- Fever – give acetaminophen or ibuprofen
- Stimulants – stop use (caffeine, OTC meds, herbs, illicit drugs)
- Anxiety – give reassurance or ant-anxiety medication
- Sepsis, Anemia, Hypotension, MI, Heart Failure, Hypoxia

Narrow QRS Complexes – consider vagal maneuvers, adenosine, beta blocker, calcium channel blocker, or synchronized cardioversion.

Wide QRS Complexes – consider anti-arrhythmic such as procainamide, amiodarone, or sotalol.

Sinus Arrhythmia

Sinus arrhythmia is a normal variation in the beating of your heart. A sinus arrhythmia refers to an irregular or disorganized heart rhythm. This rate usually increases with inspiration and decreases with expiration.

5 Steps to Identify Sinus Arrhythmias

1. What is the rate?	60-100 beats per minute
2.What is the rhythm?	Irregular (varies more than 0.08 sec)
3. Is there a P wave before each QRS and are P waves upright and uniform?	Yes
4.What is the length of the PR interval?	0.12-0.20 seconds (3-5 small squares)
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Sinus Arrhythmia

Causes include:

- Heart disease
- Moderate to extreme stress
- Excessive consumption of stimulants like caffeine, nicotine, and alcohol
- Intake of medications like diet pills as well as cough and cold medicines

Signs and Symptoms

- Usually asymptomatic

Risk and Medical Tx of Sinus Arrhythmia

Risk

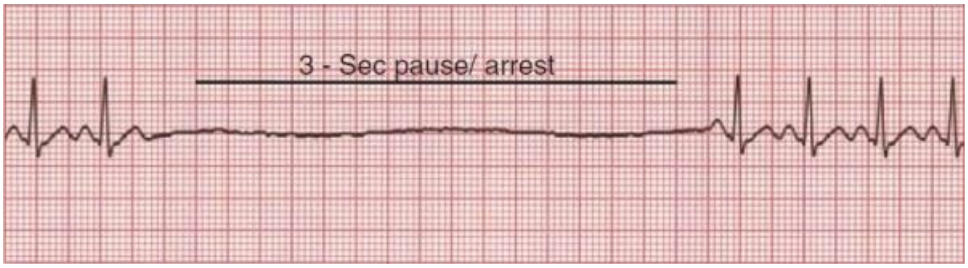
- Reduced cardiac output

Medical Treatment

Treatment is usually not required unless patient is symptomatic. If patient is symptomatic, find and treat the cause.

Sinus Arrest or Pause

A sinus pause or arrest is defined as the transient absence of sinus P waves that last from 2 seconds to several minutes.



5 Steps to Identify Sinus Arrest Rhythm

1. What is the rate?	Variable, depending on frequency
2.What is the rhythm?	Irregular when sinus arrest is present
3. Is there a P wave before each QRS and are P waves upright and uniform?	Yes
4.What is the length of the PR interval?	0.12-0.20 seconds (3-5 small squares)
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Sinus Pause/Arrest

Causes

This may occur in individuals with healthy hearts during sleep but other causes include:

- Myocarditis
- Cardiomyopathy
- MI
- Digitalis toxicity
- Elderly age
- Vagal stimulation

Signs and Symptoms

Sometimes the patient is asymptomatic. Other symptoms are:

- Syncope
- Dizziness
- Loss of Consciousness (LOC)
- Bradycardia

Risk and Medical Tx of Sinus Pause/Arrest

Risk

- Sudden cardiac death (rare)
- Syncope
- Fall
- Thromboembolic events including stroke
- Congestive Heart Failure
- Atrial tachyarrhythmias - such as atrial flutter or fibrillation

Medical Treatment

- Only treated if patient symptomatic

- Atropine
- Pacemaker

Sinus Pause/Arrest Nursing Interventions

- Assess Patient
- Give oxygen and monitor oxygen saturation
- Monitor blood pressure and heart rate
- Start IV if not already established
- Notify MD

ACLS Protocol

- Look for the cause of the sinus arrest and treat it

Medication
Electrolyte imbalance
Natural deterioration of the cardiac system

- May require artificial pacemaker for treatment if symptomatic

4. Use the 5-step approach to identify normal sinus rhythm (NSR).
5. Identify 5 common variations of NSR dysrhythmias on ECG.
6. Relate cause, significance, symptoms, and treatment as appropriate for the rhythm.

Summary

Module 3 provided you with the information needed to identify the following normal sinus rhythms: Normal sinus rhythm; Sinus bradycardia; Sinus tachycardia; Sinus arrhythmia and Sinus pause/arrest. You are now ready to learn about the sinus arrythmias that can be more symptomatic.

Module 3 takes approximately 1.5 hours to complete including test

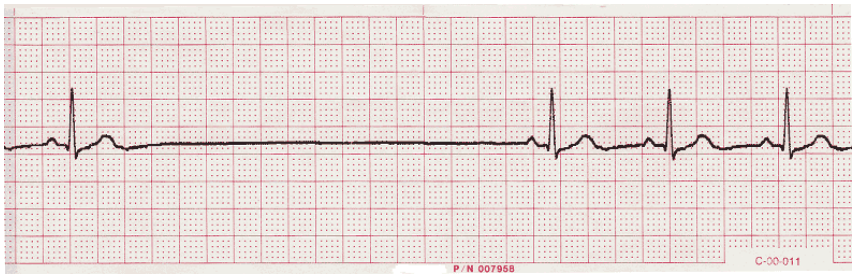
Read it!

Module 3: Interpreting Sinus Rhythms

Watch it!

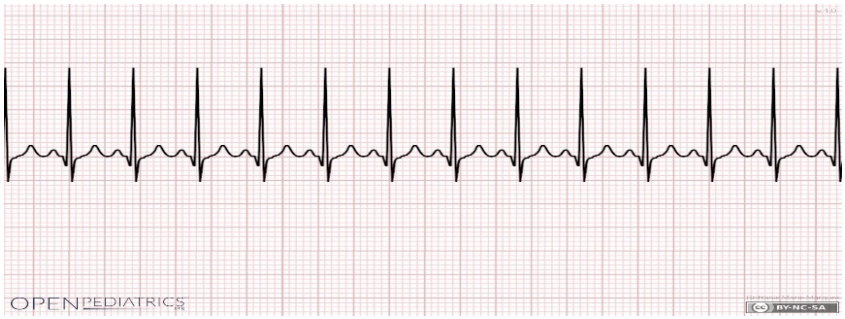
The Pacemaker Potential of the SA Node and the AV Node (5:26)

Apply it!



Name this Rhythm:
a. Sinus arrest or pause
b. Atrial fibrillation
c. Atrial flutter
d. Premature ventricular contraction

Correct Answer: A.



Name this Rhythm:
a. Ventricular tachycardia
b. Sinus tachycardia
c. 2nd degree heart block
d. Premature ventricular contraction

Correct Answer: B

Test it!

Practice ECG interpretation by following the link on p. 71.

Test your knowledge by completing the Module 3 multiple choice quiz. You should get all answers correct before progressing to Module 4.

Questions
Module 3 Sinus Rhythms

1. In sinus tachycardia the rhythm is
a. >400 bpm
b. > 80bpm
c. <100bpm
d. >100bpm

2. True or False? For patients with sinus bradycardia, medical interventions are based on patient symptoms and may include administering atropine or initiating cardiac pacing.
a. True
b. False

3. Nursing interventions for sinus tachycardia include:
a. Assess patient, administer O2, monitor vital signs, start IV, notify MD, administer amiodarone, treat according to ACLS protocol.
b. Assess patient, administer O2, monitor vital signs, start IV, notify MD
c. Notify MD, monitor vital signs, administer O2
d. Assess patient, Start IV, administer amiodarone, notify MD

4. Which criteria are representative of the patient in normal sinus rhythm?
a. Heart rate, 64 beats/min; rhythm regular; PR interval, 0.10 second; QRS, 0.04 second
b. Heart rate, 88 beats/min; rhythm regular; PR interval, 0.18 second; QRS, 0.06 second
c. Heart rate, 54 beats/min; rhythm regular; PR interval, 0.16 second; QRS, 0.08 second
d. Heart rate, 92 beats/min; rhythm irregular; PR interval, 0.16 second; QRS, 0.04 second

5. Sinus pause or arrest is the transient absence of P waves that last from 2 seconds to several minutes. Signs and symptoms of sinus pause can be:
a. May be asymptomatic, syncope, dizziness, bradycardia, loss of consciousness
b. Sort of breath, dizziness, heart palpitations, chest pain
c. Syncope, chest pain, shortness of breath
d. Exercise intolerance, cool, clammy skin, tachyarrhythmia

Correct answers:1.D 2..A 3.B 4.B 5.A

MODULE 4

Atrial Rhythms

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Normal sinus rhythm originates from the sino-atrial node (SA node), which is also called the cardiac pacemaker. In some conditions, the SA node is not functioning and does not generate an impulse. In these circumstances, atrial tissues or internodal pathways may take over and initiate an impulse. In this module you will learn about the four most common atrial arrythmias.

Important Concepts:

Atrial arrhythmias, also called supraventricular arrhythmias, begins in the upper chambers or atria of the heart. These abnormal electrical impulses that originate from the upper chambers of the heart cause atrial arrhythmia. People with atrial arrhythmias often feel tired and slow. They may experience a flutter in their chest or throat.

Learning Outcomes

- Identify specific cardiac dysrhythmias
- Relate cause, significance and symptoms,
- Describe the appropriate nursing interventions and medical treatment for specific dysrhythmias

Atrial Rhythms

When the sinoatrial (SA) node fails to generate an impulse; atrial tissues or internodal pathways may initiate an impulse.

The 4 most common atrial arrhythmias include:

- Atrial Flutter (rate varies; usually regular; saw-toothed)
- Atrial Fibrillation (rate varies, always irregular)
- Supraventricular Tachycardia (>150 bpm)
- Premature Atrial Complexes (PAC's)

Atrial Flutter

Atrial flutter is a coordinated rapid beating of the atria. Atrial flutter is the second most common tachyarrhythmia.

Source: The Student Physiologist

F (flutter) waves in a saw tooth pattern

Five Steps to Identify Atrial Flutter Rhythm

1. What is the rate?	Atrial: 250-400 bpm Ventricular: variable
2.What is the rhythm?	Atrial: regular Ventricular: may be irregular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Normal P waves are absent; flutter waves (f waves) (sawtooth pattern)
4.What is the length of the PR interval?	Not measurable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Atrial Flutter

Causes

- > 60 years old
- Valve disorder (mitral)
- Thickening of the heart muscle
- Ischemia
- Cardiomyopathy
- COPD
- Emphysema

Signs and Symptoms

- Palpitations
- SOB
- Anxiety
- Weakness
- Angina

Risk and Medical Tx for Atrial Flutter

Risk

Atrial flutter causes a dramatic drop in cardiac output that relates to the signs and symptoms. There is a risk of blood clot formation in the atria because the atria is not completely emptying while in flutter. This can lead to stroke or pulmonary embolism.

Medical Treatment

Antiarrhythmic drugs change the electrical signals in the heart and can convert the flutter and slow the ventricular rate. radiofrequency catheter ablation is another technique used to disrupt the parts of the conduction pathway causing the arrythmia.

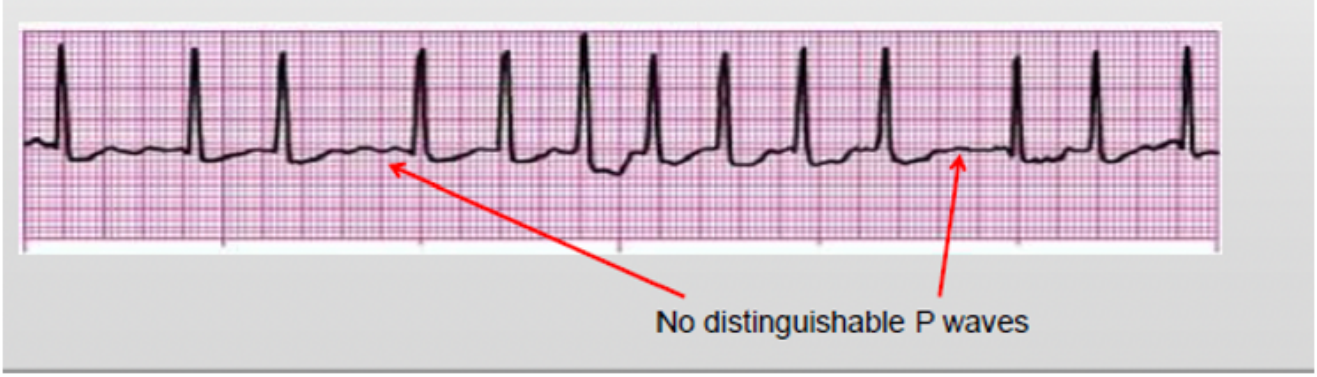
Internal or external cardioversion may be used to restore atrial flutter to NSR. External or implantable pacemakers may be used to restore a normal heart rate. Heparin or anticoagulants may be prescribed to reduce incidence of thrombus formation.

Atrial Flutter Nursing Interventions

- Assess Patient
- O2 if not already given
- Start IV if not already established and hang NS
- Notify MD
- Depending on patient status, prepare for cardioversion

Atrial Fibrillation

Atrial fibrillation is caused by an electrical signal that circles uncoordinated through the muscles of the atria making them quiver(sometimes more than 400 times per minute) without contracting. The ventricles do not receive regular impulses and contract out of rhythm, so the heartbeat becomes uncontrolled and irregular. It is the most common serious arrhythmia, and 85 percent of people who experience it are older than 65 years.



5 Steps to Identify Atrial Fibrillation Rhythm

1. What is the rate?	Atrial: 350-400 bpm Ventricular: variable
2.What is the rhythm?	Atrial: irregular Ventricular: irregular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Normal P waves are absent replaced by flutter waves (f waves)
4.What is the length of the PR interval?	Not discernable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of Atrial Fibrillation

Causes

- Hypoxia
- Hypertension
- Congestive heart failure
- Coronary artery disease
- Dysfunction of the sinus node
- Mitral valve disorders
- Rheumatic heart disease
- Pericarditis
- Hyperthyroidism
- Excessive alcohol or caffeine consumption

Signs and Symptoms

- Heart palpitations
- Irregular pulse which feels too rapid or too slow, racing, pounding or fluttering
- Dizziness or light-headedness
- Fainting
- Confusion
- Fatigue
- Trouble breathing
- Difficulty breathing when lying down
- Sensation of tightness in the chest

Risk and Medical Tx of Atrial Fibrillation

The risks of atrial fibrillation are a dramatic drop in cardiac output, and blood clot formation in atria (atria not completely emptying) that can lead to stroke or pulmonary embolism.

Medical Treatment

Treatment for atrial fibrillation depends on how long the patient has had it, symptoms and the underlying cause. Atrial fibrillation treatment focuses on resetting the heart rhythm and controlling the heart rate, and preventing blood clots that can lead to stroke.

Medications used to treat atrial fibrillation include:

- Beta and Calcium channel blockers: slow heart rate at rest and activity
- Digoxin: controls heart rate at rest, but not as well during activity.
- Anti-arrhythmic medications: maintain normal heart rhythm.
- Blood thinners (anticoagulants): reduce the risk of stroke or damage to other organs caused by blood clots.

Cardioversion: electrical shock that resets the heart rhythm.

Catheter ablation: Radiofrequency ablation or cryoablation catheters create tiny scars in the heart to block irregular electrical signals and restore a typical heartbeat.

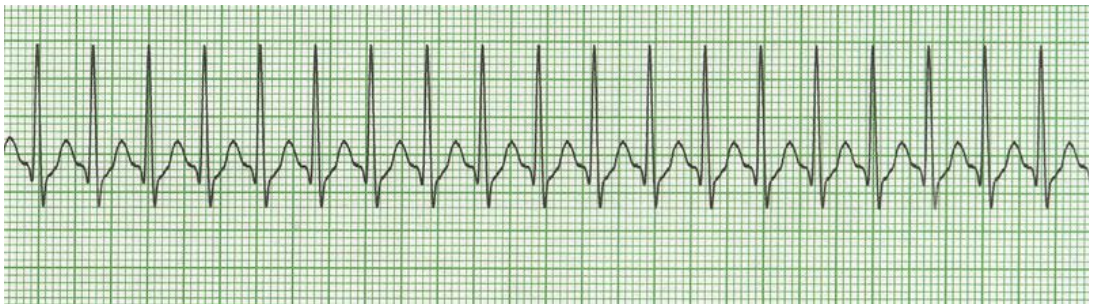
Atrial Fibrillation Nursing Interventions

- Assess Patient
- O2 if not already given
- Start IV if not already established and hang NS
- Notify MD
- Depending on patient status, prepare for cardioversion

Watch it! Atrial fibrillation (Afib) (3.57)

Supraventricular Tachycardia (SVT)

Supraventricular encompasses all fast (tachy) dysrhythmias in which heart rate is greater than 150 beats per minute (bpm)



5 Steps to Identify Supraventricular Tachycardia Rhythm

1. What is the rate?	Atrial: 150-250 bpm Ventricular: 150-250 bpm
2.What is the rhythm?	Regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Usually not discernable, especially at the high rate range as they become hidden in the QRS complex
4.What is the length of the PR interval?	Usually not discernable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Yes 0.06-0.12 seconds (1 ½ to 3 small squares)

Causes and S/S of SVT

Causes

- Stimulants
- Hypoxia
- Stress or over-exertion
- Hypokalemia
- Atherosclerotic heart disease

Signs and Symptoms

- Palpitations
- Chest discomfort (pressure, tightness, pain)
- Lightheadedness or dizziness
- Syncope
- Shortness of breath
- Pounding pulse
- Sweating
- Tightness or fullness in the throat
- Tiredness (fatigue)
- Excessive urine production

Risk and Medical Tx of SVT

Patients with prolonged SVT are at risk for heart failure.

Medical Treatment

Many people with SVT don't need treatment unless they have long or frequent episodes.

nterventions for SVT include:

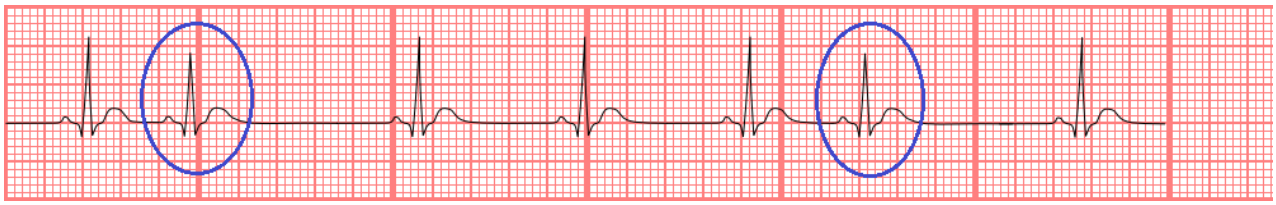
- Carotid sinus massage: healthcare provider puts gentle pressure on the neck where the carotid artery splits into two branches to releases chemicals that slow the heart rate. Vagal maneuvers: Simple, specific actions i.e. coughing, bearing down as if having a bowel movement or putting an ice pack on the face affects the vagus nerve, which helps slow the heartbeat.
- Medications: can control heart rate or restore typical heart rhythm.
- Cardioversion: electrical shock that resets the heart rhythm.
- Cardioversion: if patient unstable, electrical shock the heart resets the heart rhythm
- Catheter ablation: Radiofrequency ablation or cryoablation catheters create tiny scars in the heart to block irregular electrical signals and restore a typical heartbeat.
- Pacemaker: rarely needed to stimulate the heart to beat.

SVT Nursing Interventions

- Assess Patient
- O2 if not already given
- Vagal maneuvers (cough and valsalva)
- Start IV if not already established and hang NS
- Notify MD
- Depending on patient status, prepare for cardioversion

Premature Atrial Contraction

Premature atrial contractions (PAC) are extra beats that originate in the atria causing a pause, so the next normal heartbeat is more forceful. Frequent PACs may cause palpitations or a sense of the heart 'skipping a beat'. PACs can occur in healthy patients without heart disease.



Source: Wikipedia PAC.

Cause and S/S PAC's

Cause

- Anxiety
- Alcohol/tobacco use
- Hypertension
- Hypokalemia
- Coronary Artery Disease (CAD)
- Valvular disease

- Valvular disease
- COPD
- Digoxin toxicity

Signs and Symptoms

- Palpitations
- Skipped beat

Risk and Medical Tx PAC's

Risk

Most PACs are benign posing no risk, however they can also be a sign of an underlying heart condition.

Medical Treatment

No treatment is necessary if asymptomatic. Identifying and avoiding the triggers may suffice. Pharmacological management may be needed using beta blockers and antiarrhythmics. In some instances, catheter ablation or pacemaker insertion (as above) may be needed.

PAC Nursing Interventions

- Assess patient
- Monitor patient

Summary You have learned to identify specific atrial cardiac dysrhythmias, and explain the causes, significance and symptoms of each. As you can describe the appropriate nursing interventions and medical treatment for these specific atrial dysrhythmias you are now ready to be introduces to the ventricular arrhythmias.

Module 4 takes approximately 2 hours to complete including test

Read it!

Module 4: Atrial Rhythms

Watch it!

Atrial fibrillation (Afib) (3.57)

Apply It!

Case study MR. K.

Brief Patient History

Mr. K is a 72-year-old white man admitted to the cardiac unit with a history of hypertension, and mitral valve regurgitation. Mr. K was scheduled for mitral valve replacement.

Clinical Assessment

Mr. K is awake; follows commands; and is oriented to person, place, and time; however, he complains of weakness and severe shortness of breath despite sitting upright in bed.

Vital Signs

Mr. K's vital signs include blood pressure of 142/82 mm Hg, pulse of 168 beats/min that is irregular and bounding:

- respiratory rate of 28 breaths/min
- temperature of 98.2°F
- SpO2 of 92% on O2 at 2 L per nasal cannula.

Cardiac rhythm is the following:

1. Based on your ability to interpret his ECG, what is your conclusion?
a. Ventricular fibrillation
b. 3rd degree heart block
c. Atrial fibrillation
d. Atrial flutter

Correct Answer: C

2. How would persistent, non-urgent, atrial fibrillation be most comprehensively managed?
a. Antiarrythmics
b. Cardioversion
c. Antiarrhythmics, thrombolytics, cardioversion
d. Antihypotensive medication

Correct Answer: C

3. What is the most major risk that atrial fibrillation poses for the patient?
a. Sudden death
b. Pulmonary embolism
c. Stroke
d. Carotid occlusion

Correct Answer: A

RATIONALE FOR ANSWERS

1. Mr. K has atrial fibrillation with a rapid ventricular rate. An uncoordinated electrical signal causes the atria to quiver (sometimes more than 400 times per minute) without contracting. The ventricles do not receive regular impulses and contract out of rhythm, making the heartbeat uncontrolled and irregular. Atrial fib is a common arrhythmia; 85% of people with atrial fib are >65 years (Mr. K is 72).

Atrial fibrillation is a common sequela of degenerative mitral regurgitation (DMR) and is frequently present in patients referred for surgery for DMR.

2. Atrial fibrillation can be managed with the following treatments:
- Rate control (control ventricular rate to 80-100 beats/minute). Administer antiarrhythmic medications to restore sinus rhythm.
- Restore sinus rhythm through cardioversion, but patient must receive anticoagulants beforehand to prevent throwing an atrial embolism.

3. An immediate major risk factor for Mr. K is sudden cardiac death. A secondary risk is stroke or pulmonary embolism due to thromboembolism formation in the atria. Treatment is antithrombotic therapy as above.

4. Nursing Interventions include:
- Mr. K's vital signs, PO2, and cardiac rhythm should be monitored and treated accordingly.
- Pharmacologic agents such antiarrhythmics, ACE inhibitors, and vasodilators, should be administered as ordered.
- Essential nursing interventions for psychosocial-spiritual care include the use of therapeutic communication, compassion and care, and engaging spiritual resources, dignity-enhancing care, and support of patient coping.
- Family-centered care is based on the belief that patients need families for love, understanding, and support while coping with illness and stress. Families should participate in planning and decision-making with the healthcare team.

Test It!

Take the opportunity to practice ECG interpretation by referring to p.96.
Test your knowledge by completing the Module 4 multiple choice quiz. You should get all answers correct before progressing to Module 5.

Questions
Module 4 Atrial Rhythms

1. In atrial flutter, the key consideration in determining treatment is the
a. atrial rate.
b. ventricular rate.
c. configuration of the flutter waves.
d. PR interval.

2.True or False. The difference between atrial flutter and atrial fibrillation is that atrial flutter is a coordinated rapid beating of the atria, whereas atrial fibrillation is when the atrial muscle quivers without contracting.
a. True
b. False

3.In what atrial rhythm is there a risk of atrial clot formation resulting in stroke or pulmonary embolism?
a. Atrial flutter
b. Atrial fibrillation
c. Premature atrial contraction
d. Supraventricular contractions

4.True or False? During premature atrial contractions the patient experiences palpitations and skipped beats.
a. True
b. False

5.Supraventricular tachycardias are all fast (tachy) dysrhythmias in which the atrial and ventricular beats per minute exceed:
a. 110 beats per minute
b. 200 beats per minute
c. 150 beats per minute
d. 250 beats per minute

Correct answers: 1.B 2.A 3.B 4.A 5.C

MODULE 5

Ventricular Rhythms .

In module 4 you learned about common atrial arrythmias. Ventricular arrythmias occur when the atria, AV junction, or both, cannot initiate an electrical impulse. This leads to enhanced automaticity of the ventricular myocardium.

Important Concepts:

Characteristics of ventricular arrythmias are bizarre QRS complexes. Three features of ventricular arrythmias are: wide QRS complexes (> 0.12 seconds in duration), T waves in the opposite direction of the R wave, and an absence of P waves.

Learning Outcomes

- Identify ventricular arrhythmias on ECGs.
- Identify STEMI and discuss interventions.
- Relate causes, significance and symptoms.
- Describe the appropriate nursing interventions and medical treatment.

Ventricular Rhythms

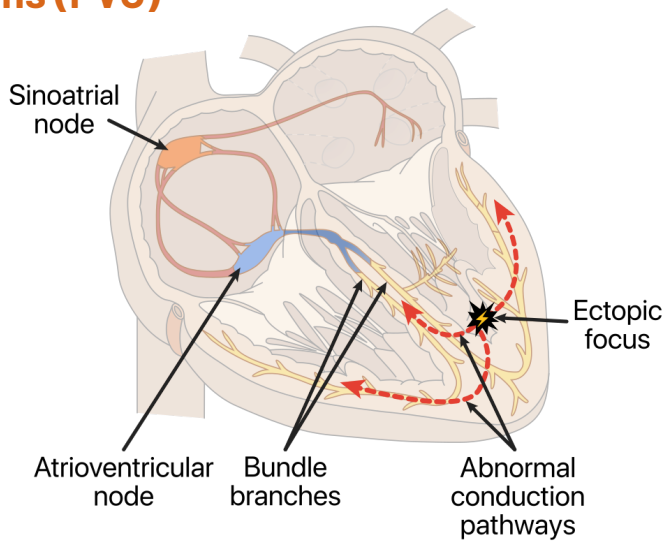
When the sinoatrial (SA) node and the AV Junctional tissues fail to generate an impulse the ventricles will assume the role of pacing the heart. There is an absence of P waves because there is no atrial activity or depolarization. Ventricular rhythms display QRS complexes that are wide (greater than or equal to 0.12 seconds) and bizarre in appearance. The most common variations are premature ventricular contractions (PVC's)

There are 8 lethal ventricular rhythms you must know:

1. Idioventricular rhythm (ventricular escape rhythm; rate usually >20 – <40 bpm)
2. Accelerated Idioventricular rhythm (>40 bpm)
3. Agonal rhythm (20 or less bpm)
4. Ventricular tachycardia (>150 bpm)
5. Ventricular fibrillation
6. Torsades de Pointes
7. Pulseless Electrical Activity (PEA)
8. Asystole - Cardiac Standstill

Premature Ventricular Contractions (PVC)

PVC is not a rhythm, but an ectopic beat that arises from an irritable site in the ventricles and follows an abnormal electrical pathway.



PVCs appear in many different patterns and shapes, but are always wide and bizarre compared to a 'normal' beat.

5 Steps to Identify Premature Ventricular Contractions (PVC's)

1. What is the rate?	Atrial: usually normal Ventricular: usually normal Depends on underlying rhythm
2.What is the rhythm?	Depends on underlying rhythm; Irregular during PVC's
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent with PVC's
4.What is the length of the PR interval?	Usually not discernable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Varies Wide and bizarre (>0.12 sec), occurs earlier than expected.

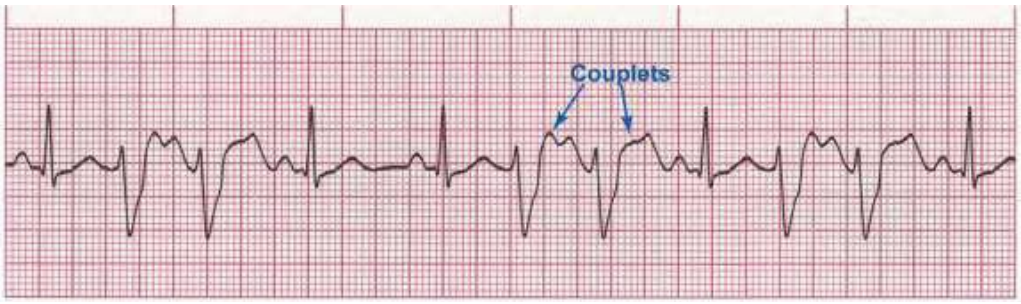
PVC Patterns

Ventricular bigeminy: PVC occurs every other beat.

Ventricular trigeminy: PVC occurs every third beat

Ventricular quadrigeminy: PVC occurs every fourth beat

Couplets: Two PVC's together



Ventricular tachycardia (VT): Runs of three or more PVC's in a row

Causes and S/S of PVC's

Causes

- Exercise
- Anxiety
- Caffeine/tobacco
- Cocaine, alcohol, amphetamines
- Heart disease: MI, CHF, Cardiomyopathy, Mitral valve prolapse
- Electrolyte imbalances (hypokalemia)
- Tricyclic antidepressants
- Digitalis toxicity

Signs and Symptoms

- Palpitations
- Lightheadedness
- Syncope
- Dizziness
- Chest pain / hyperventilation

Nursing Interventions for PVC's

- Assess patient
- O2 at 2 liters; Oxygen may abate the PVC's
- Start IV if not already established and hang NS
- Monitor for frequent PVC's and deterioration to more serious rhythms.

Idioventricular Rhythm

Idioventricular arrhythmia is also termed ventricular escape rhythm. It is considered a one final effort of the ventricles to try to prevent cardiac standstill. This occurs when the SA node and AV node have failed. The heart rate is usually between 20 to 40 beats per minute (bpm) and the cardiac output is greatly compromised. Keys to identifying this rhythm is SLOW, no P wave, wide & bizarre QRS.

5 Steps to Identify Idioventricular Rhythm

1. What is the rate?	Ventricular: 20-40 bpm
2.What is the rhythm?	Usually regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent
4.What is the length of the PR interval?	Not measureable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Wide and bizarre (>0.12 sec), with T wave deflection

Causes and S/S of Idioventricular Rhythm

Causes

- Digitalis
- MI
- Metabolic imbalances
- Hyperkalemia
- Cardiomyopathy

Signs and Symptoms

- Pale
- Cool with mottled skin
- Weakness
- Dizziness
- Hypotension
- Alteration in mental status

Risk and Medical Tx of Idioventricular Rhythm

Idioventricular rhythm is usually a terminal event occurring before ventricular standstill; cardiac arrest will lead to death.

Medical Treatment

- Atropine
- Pacing
- Dopamine when hypotensive
- CPR

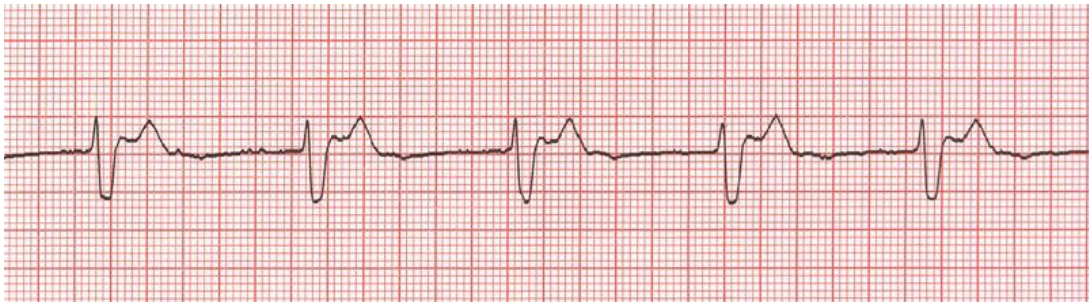
Nursing Interventions Idioventricular Rhythm

- Assess your patient: patient will most likely be symptomatic with a weak, thready pulse
- Run continuous monitor strips/record
- Begin CPR
- Call Code Blue
- Notify MD
- Start IV if not already established and hang NS

Watch it! Adult Cardiac Arrest Algorithm (2023). Disque Foundation. (2:59).

Accelerated Idioventricular Rhythm

Accelerated idioventricular arrhythmia is another last-ditch effort of the ventricles to try to prevent cardiac standstill when the SA node and AV node have failed. The rate is usually between 40 to 100 beats per minute (bpm) and the cardiac output is compromised.



5 Steps to Identify Accelerated Idioventricular Rhythm

1. What is the rate?	Ventricular: 41-100 bpm
2.What is the rhythm?	Usually regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent
4.What is the length of the PR interval?	Not measureable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Wide and bizarre (>0.12 sec), with T wave deflection

Causes and S/S of Accelerated Idioventricular Rhythm

Causes

- Drugs- Digitalis
- MI
- Metabolic imbalances
- Hyperkalemia
- Cardiomyopathy

Signs and Symptoms

- Pale
- Cool with mottled skin
- Weakness
- Dizziness
- Hypotension
- Alterations in mental status

Risk and Medical Tx of Accelerated Idioventricular Rhythm

Risk

Accelerated idioventricular rhythm is usually a terminal event occurring before ventricular standstill; cardiac arrest will lead to death.

Medical Treatment

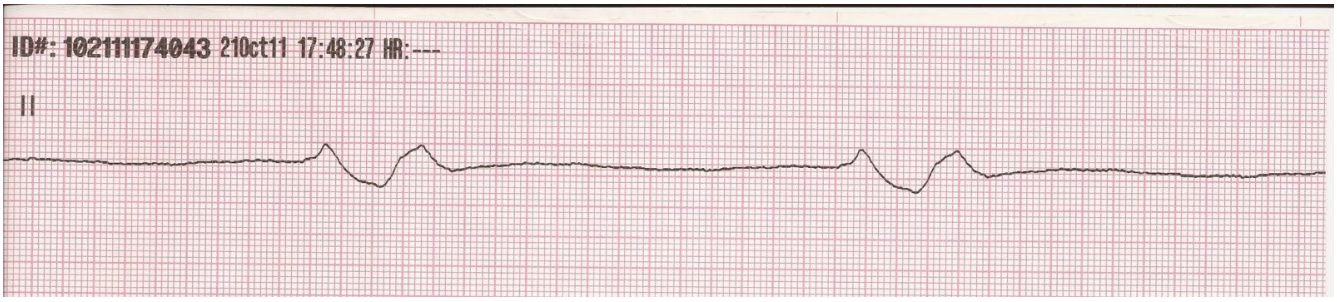
- Atropine
- Pacing
- Dopamine when hypotensive
- CPR

Nursing Interventions for Accelerated Idioventricular Rhythm

- Assess your patient: patient will most likely be symptomatic with a weak, thready pulse
- Run continuous monitor strips/record
- Begin CPR
- Call Code Blue
- Notify MD
- Start IV if not already established and hang NS

Agonal Rhythm

Agonal rhythm is when the Idioventricular rhythm is 20 beats or less per minute. Frequently is seen as the last-ordered semblance of a heart rhythm when resuscitation efforts are unsuccessful.



5 Steps to Identify an Agonal Rhythm

1. What is the rate?	Ventricular: <20 bpm
2.What is the rhythm?	Usually regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent
4.What is the length of the PR interval?	Not measureable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Wide and bizarre (>0.12 sec), with T wave deflection

Causes and S/S of Agonal Rhythm

Causes

- Trauma
- Acute MI
- Natural progression to death

Signs and Symptoms

- Loss of consciousness
- No palpable pulse or measurable BP

Risk and Medical Tx of Agonal Rhythm

Death is the outcome of this rhythm if life saving efforts have failed.

Medical Treatment

- CPR/ACLS Protocol
- If life saving efforts have already been attempted no further treatment

Nursing Interventions for Agonal Rhythm

- Make sure their aren't any loose leads or leads that have come off the patient
- Call a Code Blue

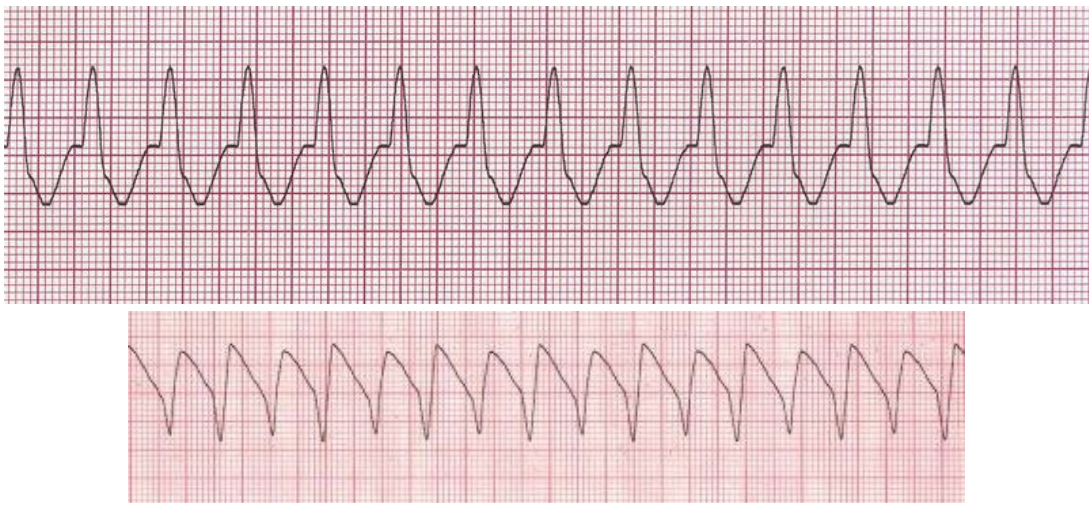
- Start CPR
- Notify MD

If death is the expected outcome:

- Monitor vital signs
- Record rhythm progression
- Support family and friends

Ventricular Tachycardia

Ventricular tachycardia almost always occurs in diseased hearts and is identified by a rhythm in which three or more PVCs arise in sequence at a rate greater than 100 beats per minute. V-tach can occur in short bursts lasting less than 30 seconds, causing few or no symptoms however sustained v-tach lasts for more than 30 seconds and requires immediate treatment to prevent death as it can quickly deteriorate into ventricular fibrillation.



5 Steps to Identify Ventricular Tachycardia (V-Tach)

1. What is the rate?	Ventricular: 101-250 bpm
2.What is the rhythm?	Atrial rhythm not distinguishable Ventricular rhythm usually regular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent
4.What is the length of the PR interval?	Not measureable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Wide and bizarre (>0.12 sec)

Causes and S/S of V-Tach

Causes

- Underlying heart disease (CAD, CHF, MI, cardiomyopathy)
- Electrolyte imbalance
- Digitalis toxicity

Signs and Symptoms

- Chest discomfort (angina)
- Syncope
- Light-headedness or dizziness
- Palpitations
- Shortness of breath
- Absent or rapid pulse
- Loss of consciousness
- Hypotension

Risk and Medical Tx of V-Tach

V-Tach is a major cause of sudden cardiac death.

Medical Treatment

- If there is no pulse, begin CPR and follow ACLS protocol
- If there is a pulse and the patient is unstable - cardiovert and begin drug therapy
- Procainamide
- With chronic or recurrent VT long term antiarrhythmics
- Implantable Cardiac

Nursing Interventions for V-Tach

- Assess your patient
- If symptomatic, treatment must be aggressive and immediate
- Pulse present – Oxygen, Patent IV (preferably x2), Monitor closely.
- Pulseless - Call Code Blue, Begin CPR, Defibrillate ASAP, Start IV if not already established and hang NS, Notify MD

Ventricular Fibrillation

V-Fib rhythm is coarse and fine and occurs as a result of multiple weak ectopic foci in the ventricles. This results in no coordinated atrial or ventricular contraction as the electrical impulses are initiated by multiple ventricular sites and are not transmitted through normal conduction pathway.

5 Steps to Identify Ventricular Fibrillation

1. What is the rate?	Not discernible
2.What is the rhythm?	Rapid, unorganized, not discernable Absent
3. Is there a P wave before each QRS and are P waves upright and uniform?	None
4.What is the length of the PR interval?	None
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	None

Causes and S/S of V-Fib

Causes

- MI
- Untreated VT
- Electrolyte imbalance
- Hypothermia
- Myocardial ischemia
- Drug toxicity or overdose
- Trauma

Signs and Symptoms

- Loss of consciousness
- Absent pulse

Risk and Medical Tx of V-Fib

Risk of death.

Medical treatment

- CPR with immediate defibrillation
- Initiate ACLS algorithm

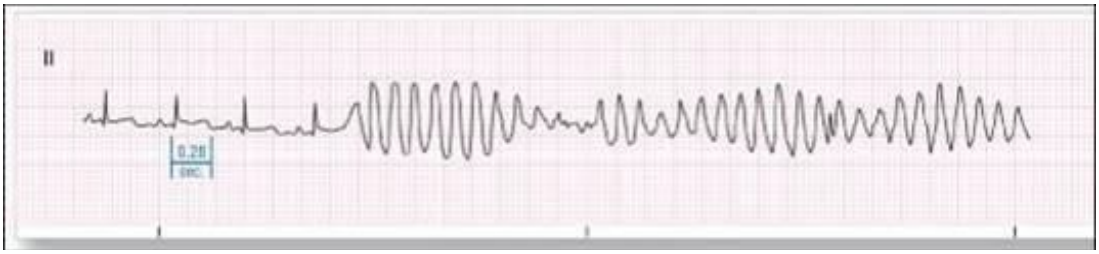
Nursing Interventions V-Fib

- Assess your patient
- Many things can mimic v-fib on a monitor strip such as electric razor or shivering so you must check your patient!
- Treatment must be aggressive and immediate
- Start CPR/ACLS
- Call a Code Blue
- Defibrillate ASAP
- Start IV if not already established and hang NS
- Notify MD

Watch it! What is ventricle fibrillation (Vfib)? (8.48)

Torsades de Pointes Rhythm

Torsades de pointes is associated with a prolonged QT interval. Torsades usually terminates spontaneously but frequently recurs and may degenerate into ventricular fibrillation. The hallmark of this rhythm is the upward and downward deflection of the QRS complexes around the baseline. The term Torsades de Pointes means "twisting about the points."



5 Steps to Identify Torsades de Pointes

1. What is the rate?	Ventricular: 150-250 bpm
2.What is the rhythm?	Regular or irregular
3. Is there a P wave before each QRS and are P waves upright and uniform?	Absent
4.What is the length of the PR interval?	Not measurable
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	Wide and bizarre, some deflecting downward and some deflecting upward

Causes and S/S of Torsades de Pointes

Causes

- Associated with prolonged QT interval
- Often caused by drugs conventionally recommended in treating VT
- Phenothiazine or tricyclic antidepressant overdose
- Electrolyte disturbances, especially hypokalemia and hypomagnesemia

Signs and Symptoms

- Chest pain
- Loss of consciousness
- Dizziness
- Nausea
- Shortness of breath

Risk and Medical Tx of Torsades de Pointes

Risk of death

Medical Treatment

- Begin CPR and other code measures
- Eliminate predisposing factors - rhythm has tendency to recur unless precipitating factors are eliminated
- Administrate magnesium sulfate bolus
- Synchronized cardioversion is indicated when the patient is unstable or defibrillate

Nursing Interventions for Torsades de Pointes

- Assess your patient
- Make sure their aren't any loose leads or leads that have come off the patient
- Start CPR
- Call a Code Blue
- Start IV if not already established and hang NS
- Notify MD
- Must treat the cause – usually giving Magnesium

Asystole

Asystole is the absence of ventricular contractions in the context of a lethal cardiac arrythmia and is also called entricular standstill.

5 Steps to Identify Asystole

1. What is the rate?	None
2.What is the rhythm?	None
3. Is there a P wave before each QRS and are P waves upright and uniform?	None
4.What is the length of the PR interval?	None
5.Do all QRS complexes look alike? What is the length of the QRS complexes?	None

Causes and S/S of Asystole

Causes

- Extensive myocardial damage, secondary to acute myocardial infarction
- Failure of higher pacemakers
- Cardiac tamponade
- Prolonged v-fib
- Pulmonary embolism

Signs and Symptoms

- No palpable pulse
- No measurable BP
- Loss of consciousness

Risk and Medical Tx of Asystole

Patient is already dead.

Medical Treatment

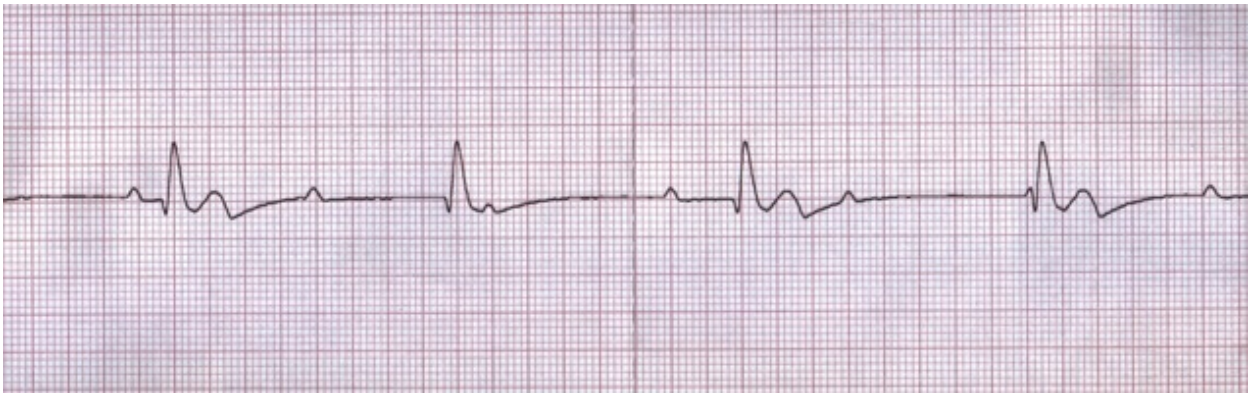
- CPR
- ACLS protocol

Nursing Interventions for Asystole

- Assess your patient
- Make sure there aren't any loose leads or leads that have come off the patient
- Treatment must be aggressive and immediate
- Call a Code Blue
- Start CPR/ACLS

Pulseless Electrical Activity (PEA)

Pulseless electrical activity (PEA) is when the ECG shows a detectable electrical current, but the heart muscle isn't reacting to it. PEA does not respond to defibrillation, and the patient is clinically dead.



Source: PEA

Causes and S/S of PEA

Causes: H's and T's

- Hypovolemia #1 cause
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo / Hyperkalemia
- Hypothermia
- Toxins
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma
- Massive MI

- Overdose of tricyclic antidepressants

Signs and Symptoms

- Pulselessness
- Loss of consciousness
- No palpable BP

Risk and Medical Tx of PEA

Risk of death as the rhythm has no associated cardiac activity.

Medical Treatment

- Determine cause & treat
- CPR
- Initiate ACLS protocol

Nursing Interventions PEA

- Assess your patient
- Treatment must be aggressive and immediate
- Call a Code Blue
- Start CPR/ACLS
- Run continuous monitor strips/Record
- Start IV if not already established and hang NS
- Notify MD

Watch it! Pulseless electrical activity (PEA) and asystole (10:44)

Module 5 takes approximately 3 hours to complete including test

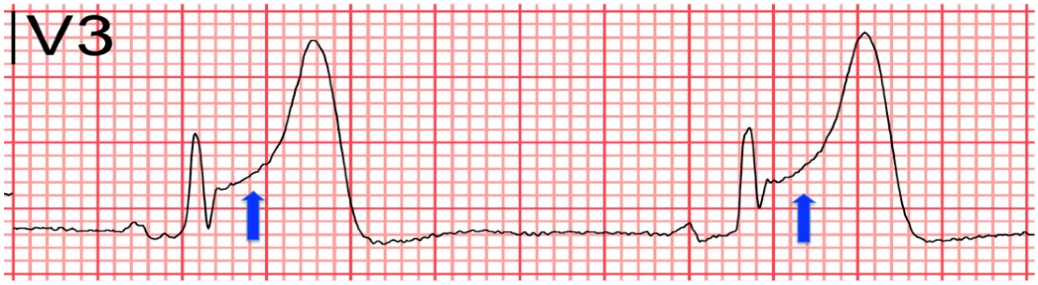
Read it!

Module 5: Ventricular Rhythms.
For an alternate, excellent review: Ventricular Dysrhythmias

ST-Elevation Myocardial Infarction (STEMI)

STEMI ST-Elevation Myocardial Infarction (STEMI) is a very serious type of heart attack during which there is an abrupt interruption of blood flow through one or all three of the major coronary arteries. This results in an immediate reduction of myocardial oxygen perfusion leading to cardiac muscle ischemia and tissue death. About 80% of inferior STEMIs are due to occlusion of the dominant right coronary artery (RCA).

ST-segment elevation is an abnormality detected on the 12-lead ECG.



Identifying STEMI

STEMI is diagnosed if there is >1-2mm of ST elevation in two contiguous leads on the ECG

Causes

Occluded coronary artery(ies)

Signs and Symptoms

- Chest pain or discomfort
- Shortness of breath
- Dizziness or light-headedness
- Nausea or vomiting
- Diaphoresis (sweatiness) unexplained by ambient temperature
- Palpitations (uncomfortable awareness of the heart beat)
- Anxiety or a feeling of impending doom

Risk of STEMI

Life-threatening medical emergency

Patients experiencing acute STEMI at risk for developing ventricular fibrillation leading to sudden cardiac arrest.

Medical Treatment of Diagnosed STEMI

- Intravenous access obtained
- Cardiac monitoring started
- Hypoxemic patients may benefit from oxygen therapy
- Patients need percutaneous coronary intervention (PCI) within 90 minutes of presentation at a PCI hospital or within 120 minutes if transfer to a PCI capable hospital is required.
- Treated with thrombolytics and/or with coronary balloon angioplasty or stent placement in a cardiac catheterization lab.

Nursing Interventions for STEMI

1. Assess your patient's history and signs & symptoms
2. Notify MD
3. Initialize a 12 lead ECG essential for diagnosis
4. Initiate Code STEMI

Watch it!

Watch this video describing the diagnosis of an MI and identify STEMI: Heart attack (myocardial infarct) diagnosis (10:44)

Watch this video: What is ventricle fibrillation (Vfib)? (8.48)

Watch this video: Pulseless electrical activity (PEA) and asystole (10:44)

Apply It!

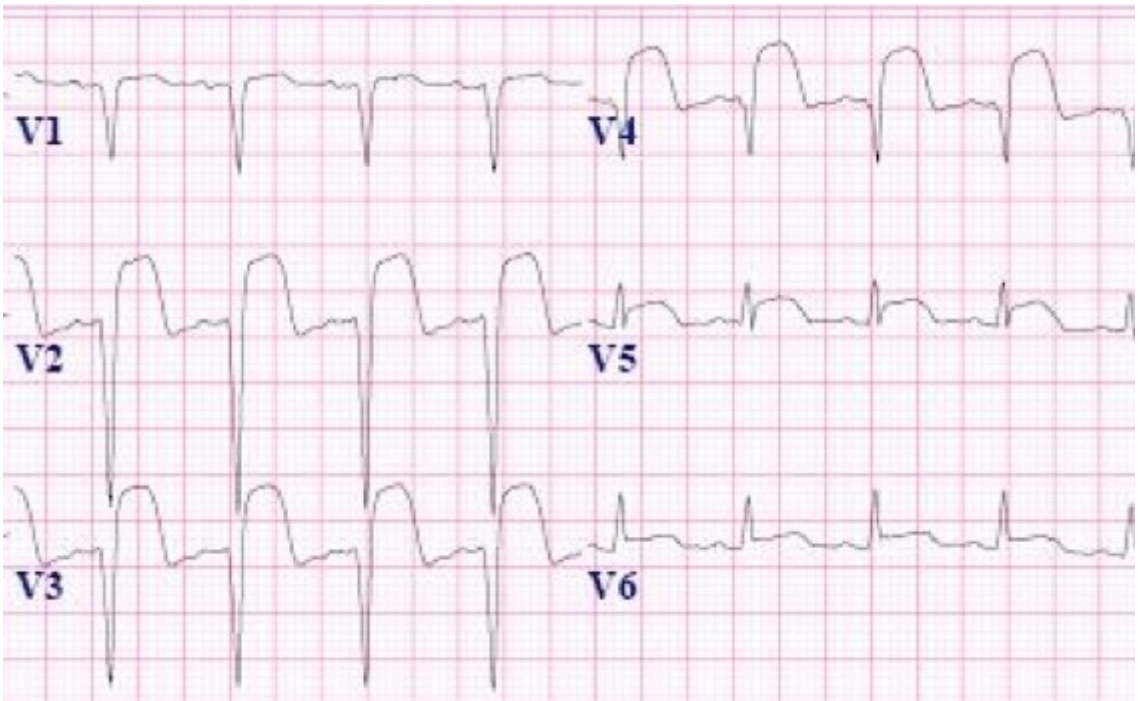
Complete the Case study below
Case study MRS. G.

Brief Patient History: Mrs. G is a 54-year-old woman who has been having fatigue and intermittent indigestion for the past month. She has a history of hyperlipidemia. She was admitted as an inpatient on a medical floor for management of her indigestion and chest pain. She is scheduled to undergo endoscopy tomorrow. Mrs. G suddenly becomes diaphoretic and complains of nausea and epigastric pain.

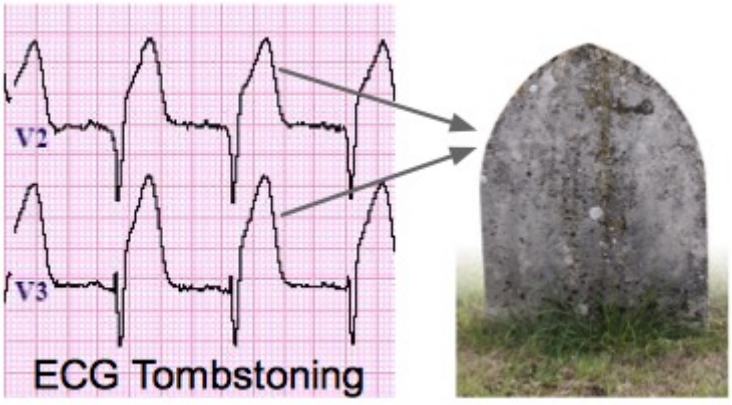
Clinical Assessment: The rapid response team evaluates Mrs. G. She continues to complain of severe pain, which now radiates to her neck, jaw and right arm. She has slight shortness of breath and is vomiting.

Vital Signs: BP: 116/64 mm Hg, HR: 114 beats/min, Respiratory rate: 18 breaths/min, T:37.2, and O2 saturation: 94%.

Diagnostic Procedures: The admission electrocardiogram (ECG) shows ST-segment elevation.



Anterior MI Pattern – Tombstoning



Source: Healio

Medical Diagnosis: Anterior myocardial infarction.

Questions

1. What are the primary outcomes you want to achieve for this patient?
a. Prevention of aspiration from vomiting
b. Pain relief and preservation of myocardial tissue
c. Elevate the PO2 quickly
d. Elevate her energy levels

Correct Answer: B

2. What interventions will promote optimal functioning, safety, and patient well-being?
a. Start O2 3litres/minute by nasal prongs
b. Initiate a Code Blue
c. Start thrombolytic drug administration and prepare the patient for percutaneous coronary intervention
d. Prepare the patient for cardioversion

Correct Answer: C

RATIONALE for Answers

1. The major outcomes expected for Mrs. G are pain relief and preservation of myocardial tissue, achieved through ensuring myocardial perfusion.

2. Mrs. G's cardiac rhythm has identified ST-segment changes so she needs thrombolytic therapy and immediate percutaneous coronary intervention (PCI) to restore perfusion to the heart muscle.

Test It!

Practice ECG interpretation by following the link: Basic Cardiac Rhythms – Identification and Response: p. 147.
Test your knowledge by completing the Module 5 multiple choice quiz.
You need to get all answers correct before progressing to the final quiz.

Questions
Module 5 Ventricular Rhythms

1.The main characteristics of ventricular rhythms are:
1.The SA node and AV junctional tissues do not generate an impulse
2. The ventricles start pacing the heart muscle
3. There are P erratic waves
4. There are wide QRS complexes
a. 1, 2, 3
b. 1, 3, 4
c. 1, 2, 4
d. 2, 3, 4

2.True or False? Ventricular tachycardia is the most common ventricular variation.
a. True
b. False

3. Ventricular bigeminy is a condition where premature ventricular contraction(s)(PVC):
a. Occur every other beat
b. Occur every third beat
c. Occur every fourth beat
d. Occur when there are 2 PVCs together

4.What is the condition when the SA and AV nodes fail and the heart rate is 20 – 40 beats per minute?
a.Idioventricular rhythm
b.Agonal rhythm
c.Ventricular fibrillation
d. Torsades de Pointes

5.Causes of asystole may be:
1. Myocardial damage due to acute myocardial infarction
2. Cardiac tamponade
3. Prolonged atrial fibrillation
4. Pulmonary embolism
a.1, 2, 3
b. 2, 3, 4
c. 1, 2, 4
d. 1, 3, 4

Correct answers: 1.C 2..B 3.A 4.C 5. C

Summary

Congratulations! You have successfully completed the 5-module learning resource on ECG interpretations where you now have that ability to:

- Describe cardiac anatomy, physiology and electrical conduction and 5-lead ECG lead placement.
- Explain the 5-step process to reading a cardiac rhythm strip.
- Identify normal rhythms and atrial and ventricular arrhythmias.
- Describe causes, signs and symptoms, nursing interventions and medical treatment for atrial and ventricular dysrhythmias.

These basic skills will assist you in the provision of quality care for cardiac patient. If you are interested in further resources and helpful apps, please access the Resources at the end of this document.

Before you take the online final summative test, practice all types of ECG strips, some with accompanying patient signs and symptoms.You can practice all types of ECG strips using the following resource: Flash Cards: Pacific Medical Training ECG, 2023.

Final Online Test:

Multiple choice test comprising of 30 questions takes 45 minutes to complete.

Final Test Cardiac Arrythmias for Nurses

This test consists of 30 multiple-choice and True/False questions.
A passing grade is 21/30. If needed, you should review the content and repeat the test until you get the acceptable grade.

Questions

1. Which structure is the primary or natural pacemaker of the heart?
a. Ventricular tissue
b. Atrioventricular node
c. Sinoatrial node
d. Purkinje fibers

2. Unoxygenated blood flows from inferior and superior vena cava to:
a.Right Atrium → Tricuspid Valve → Right Ventricle → Pulmonic Valve →Lungs → Through Pulmonary system
b. Left Atrium → Left Ventricle → Aortic Valve → Aorta → Systemic System
c. Right Ventricle → Pulmonic Valve → Lungs → Through Pulmonary system → Right Atrium → Tricuspid Valve
d. Through Pulmonary system → Right Atrium → Tricuspid Valve → Right Ventricle → Pulmonic Valve → Lungs

3. Place the following components of the cardiac conduction pathway in the correct anatomic order.
1. Atrioventricular node
2. Left & Right Bundle branches
3. Bundle of His
4. Internodal pathways
5. Purkinje fibers
6. Sinoatrial node
a. 6, 1, 4, 3, 2, 5
b. 6, 1, 3, 2, 4, 5
c. 6, 4, 1, 3, 2, 5
d. 4, 3, 2, 5, 6, 1

4. What is the function of the atrioventricular (AV) valves?
a. Assist with blood flow to the lungs and aorta
b. Prevent blood regurgitation back into the ventricles
c. Prevent backflow of blood into the atria during ventricular contraction
d. Contribute to ventricular filling by atrial kick

5. What is the definition of automaticity as it relates to cardiac conduction?
a. Ability of the cardiac cell to depolarize in response to an electrical stimulus.
b. Ability of cardiac pacemaker cells to fire at regular intervals.
c. The spread of electrical activity from one specialized cardiac cell to another.
d. Ability to generate an electrical impulse spontaneously, without external stimulation

6. A patient is admitted with a diagnosis of acute myocardial infarction. The monitor pattern reveals bradycardia. Occlusion of which coronary artery most likely resulted in bradycardia from sinoatrial node ischemia?
a. Right
b. Left anterior descending
c. Circumflex
d. Dominant

7. Why do many patients with very high heart rates frequently have chest pain and shortness of breath?
a. Patients with heart disease frequently have an anxiety disorder as well.
b. The rapid pounding of the heart in the chest wall causes the physical pain.

c. The heart muscle gets tired from the increased work.
d. The decreased diastolic time decreases oxygen delivery to the myocardium.

8. What percentage of volume does atrial kick contribute to ventricular filling?
a. 10%
b. 20%
c. 5%
d. 45%

9. The EASI Lead Placement Color Code is:
a. E Red: Anywhere, A Brown: Left mid-axillary line (5th intercostal space), S Black: Lower sternum (5th intercostal space), I White: Right mid-axillary line (5th intercostal space), Green: Lower sternum (5th intercostal space),
b. E Brown: Lower sternum (5th intercostal space), A Red: Left mid-axillary line (5th intercostal space), S Black: Upper sternum (just below sternal angle), I White: Right mid-axillary line (5th intercostal space), Green: Anywhere
c. E Green: Upper sternum (3rd intercostal space), A Brown: Left mid-axillary line (5th intercostal space), S White: Upper sternum (just below sternal angle), I Black: Left mid-axillary line (5th intercostal space), Black: Anywhere
d. None of the above

10. Which statement is false about ECG graph paper?
a. Each small 1 mm square equals 0.04 seconds.
b. Allows a measurement of heart rate on the vertical line.
c. One large square equals 0.20 seconds.
d. Amplitude is measured on the vertical line.

11.What is the order in which to apply the five-step approach to interpreting ECG rhythms?
a. Heart rate, Heart rhythm, P wave, PR interval, QRS complex
b. P wave, PR interval, QRS complex, Heart rhythm, Heart rate
c. Heart rate, Heart rhythm, QRS complex, P wave, PR interval
d. Heart rhythm, Heart rate, P wave, PR interval, QRS complex

12.The steps to the 6 second method to determine heart rate are to identify the
a. 6 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 10.
b. 10 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 6.
c. 3 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 20.
d. 20 second interval mark on the top or bottom of the graph paper and count the number of QRS complexes occurring then multiply by 3.

13.The P-R interval is measured from onset of P wave to the onset of the QRS complex.
a. A normal interval is 0.6 seconds.
b. A normal PR interval is between 0.12 – 0.20 seconds.
c. A normal interval is 6 seconds.
d. A normal interval is between 12 - 20 seconds.

14. In sinus tachycardia the rhythm is:
a. >400 bpm
b. > 80bpm
c. <100bpm
d. >100bpm

15. You did the 5-step process to read the ECG and identified your patient has sinus tachycardia. Which of the following IS NOT a characteristic of sinus tachycardia:
a. Rate: 160
b. Rhythm: regular atrial rhythm, irregular ventricular rhythm
c. P waves present, upright and uniform
d. PR interval is 0.12 – 0.20

16. In sinus bradycardia medical interventions are based on patient symptoms and may include:
a. Administering atropine
b. Initiating cardiac pacing
c. Administering oxygen and monitor O2 saturation
d. All of the above

17.Which criteria are representative of the patient in normal sinus rhythm?
a. Heart rate, 64 bpm; rhythm regular; PR interval, 0.10 second; QRS, 0.04 second
b. Heart rate, 88 bpm; rhythm regular; PR interval, 0.18 second; QRS, 0.06 second
c. Heart rate, 54 bpm; rhythm regular; PR interval, 0.16 second; QRS, 0.08 second
d. Heart rate, 92 bpm; rhythm irregular; PR interval, 0.16 second; QRS, 0.04 second

18.Sinus pause or arrest is the transient absence of P waves that last from 2 seconds to several minutes. Signs and symptoms of sinus pause can be:
a. May be asymptomatic, syncope, dizziness, bradycardia, loss of consciousness
b. Sort of breath, dizziness, heart palpitations, chest pain
c. Syncope, chest pain, shortness of breath
d. Exercise intolerance, cool, clammy skin, tachyarrhythmia

19. In atrial flutter, the key consideration in determining treatment is the
a. Atrial rate.
b. Ventricular rate.
c. Configuration of the flutter waves.
d. PR interval.

20.Which statement is true?
a. Atrial flutter is when the atrial muscle quivers without contracting
b. Atrial fibrillation is a coordinated rapid beating of the atria
c. In SVT, the atrial rate is 40 – 60 BPM
d. Atrial fibrillation is when the atrial muscle quivers without contracting

21. In what atrial rhythm is there a risk of atrial clot formation resulting in stroke or pulmonary embolism?
a. Atrial flutter
b. Atrial fibrillation
c. Premature atrial contraction
d. Supraventricular contractions

22. During premature atrial contractions the patient experiences:
a. Fainting
b. Loss of consciousness
c. Palpitations and skipped beats
d. Tightness in the throat

23. Supraventricular tachycardias are all fast (tachy) dysrhythmias in which the atrial and ventricular beats per minute exceed:
a.110 beats per minute
b. 150 beats per minute
c. 200 beats per minute
d. 250 beats per minute

24. Which statement is true for premature ventricular contractions (PVC)
a. PVCs have a regular, narrow shape.
b. PVCs are the most uncommon ventricular variation.
c. One sign of PVCs is hypertension.
d. PVCs may be caused by caffeine, stress or exercise.

25.Ventricular bigeminy is a condition where premature ventricular contraction(s) (PVC):
a. Occur every other beat
b. Occur every third beat
c. Occur every fourth beat
d. Occur when there are 2 PVCs together

26. What is the condition when the SA and AV nodes fail and the heart rate is

20 – 40 beats per minute?
a. Idioventricular rhythm
b. Agonal rhythm
c. Ventricular fibrillation
d. Torsades de Pointes

27. ST segment monitoring for ischemia has gained increasing importance with the advent of thrombolytic therapy. What is the most accurate method for monitoring the existence of true ischemic changes?
a. Biomarkers
b. Echocardiogram
c. 5-lead ECG
d. 12-lead ECG

28. Which portion of the electrocardiogram (ECG) is most valuable in diagnosing atrioventricular (AV) conduction disturbances?
a. P wave
b. PR interval
c. QRS complex
d. QT interval

29. The treatment of choice for a patient with ventricular fibrillation is
a. defibrillation.
b. transesophageal pacing.
c. synchronized cardioversion.
d. digoxin administration.

30. A nurse is working with a 68-year-old client with cardiac dysrhythmias who has cool skin, poor pulses, and mental status changes. Which of the following conditions is this client most likely experiencing?
a. Decreased cardiac output
b. Disturbed sleep pattern
c. Risk for deficient fluid volume
d. Ineffective breathing pattern

Answer Code

1. c
2.a
3.c
4.c
5.d
6.a
7.d
8.b
9.b
10.b
11.a
12.a
13. b
14.d
15.b
16.d
17.b
18.a
19.b
20.d
21. b
22.c
23.b
24.d
25.a
26.a
27. d
28.b
29.a
30.a

Resources

You have additional resources within this learning module available for you to review. Resources below are open and can add to your cardiac knowledge and assist your patients in understanding cardiac diseases.

Module Resource: The University of Toledo Medical Centre interactive publication: Basic Cardiac Rhythms – Identification and Response.

Fast & Easy ECGs – A Self-Paced Learning Program: Ventricular Dysrhythmias

Open Resources for Healthcare Professionals

Healio Learn the Heart

Practical Clinical Skills ECG Interpretation
Includes ECG Basics, Arrhythmia Guide, Practice Drills, Quiz

Heart Rhythm Society

European Heart Journal:
Free access to European Society of Cardiology Guidelines
Cardio image bank
Current research ad articles

Open Resources for Cardiac Patients

European Society of Cardiology Patient Websites:

These websites help your patients understand their cardiovascular disease including risk factors and positive steps to leading longer, healthier lives. These websites are available in multiple languages.

ECG Mobile Apps for Phone & Tablet. Downloadable from App Store

ECG interpretation Lite ($2.79). Rating: 5 Star, well worth the minimal cost
ECG Guide (1.39). Rating: 5 Star. Comprehensive, well worth the minimal cost
ECG Mastery Cardiology reference & review. Rating: 4.5, in app purchases
ECG Flashcards Pro ($0.99). Rating: none yet. User friendly and comprehensive
ECG Notes: Interpretation and Management Guide (free)
ECG Master Quiz, exam explanations – practice rhythms (free) Rating: none, not very helpful
ECG Pro ($34.99) Consists of 4 separate ECG apps. Rating: none yet. User friendly and comprehensive.

RESOURCE 2

Nurse Leadership and Management

The Nurse Leadership and Management e-book originated as an online healthcare app developed with the expertise of digital education researchers and healthcare practitioners from five European Union member states participating in an ERASMUS+ project.

The content of the e-book comes from open-source resources and offers nurses and other interested healthcare practitioners a convenient way to familiarize themselves with concepts pertinent to healthcare leadership and management. The e-book can also be used by or adapted by educators at all institutions at any level or country. Note that the term 'educator' is interchangeable with: practitioner, facilitator, professor, academic staff member, lecturer, instructor, teacher, tutor, and trainer.

Introduction

Healthcare delivery is on a rollercoaster ride due to the rapidity of changing health care delivery systems, cost, access, environmental impacts, communicable diseases, consumer expectations and demands for quality. These global, complex changes are redefining healthcare delivery, the practice of healthcare professionals, and organizational effectiveness. As nurses make up the majority of healthcare professionals, these challenges create a great demand for nurse leadership and management.

Although leadership and management may be mentioned synonymously, they are not the same. Leaders, focused on people and relationships, guide and motivate nurses to reach their patient care goals. They have the ability to see the complex healthcare system yet remain focused on maintaining a strong culture of quality care that improves patient outcomes (Wagner, 2018)

Managers, on the other hand, organize and guide nurses' work in organizations where they play a pivotal role in nurses' work lives. A nurse manager is responsible and accountable for the day-to-day operations of the workplace. This includes employee selection, hiring, orientation, staff development and evaluation, resource allocation and management, risk management, patient safety, financial accountability, and more. They supervise and influence the professional practice of frontline nurses, the largest groups of health care providers in the system (Wagner, 2018).

In contemplating nurse leadership and nurse management roles, nurses must consider what it takes to influence and lead transitions within the healthcare environment while simultaneously managing patient care

services. Nurses in these roles must develop specialized skills and have the conviction and motivation to move things forward and effect change (Huber, 2018).

Purpose

Nurse Leadership and Management is an educational e-book that can be accessed online or downloaded onto your desktop. There are 8 modules consisting of different information and activities for you. Expect to take approximately 16 – 20 hours to complete it.

Instructions

There are 8 modules in this course:

1. What is Leadership?
2. What is Management?
3. Components of Professionalism
4. Change and Innovation
5. Healthcare Communications
6. Managing Conflict
7. Teamwork and Interprofessional Healthcare Teams
8. Diversity in Healthcare

Each module consists of a four-step process:

Read It: You will read relevant material related to the topic, particularly from the primary sources (listed below). In some Read It sections you will notice there are hyperlinks which take you to evidence-based e-books and articles of interest. This reading is mandatory and testable. Reading designated as 'optional' is meant for you to explore topics of interest.

Watch It/ Listen to It: Educational videos or podcasts that review and reinforce the main concepts related to the module's topic.

Apply It: Transfer your new knowledge attained from reading and reviewing videos into practice by participating in relevant case studies. Although these are not reviewed or graded, completing these activities will solidify your knowledge, skills and judgment on the chosen topics.

Test It: Finally, after each module you will test that you have attained the knowledge and skill covered in the Read It! Watch It! and Apply It! sections by completing a brief online quiz at the end of each module. These quizzes are not graded and are meant as learning opportunities. You will find the answer code at the end of the module. If you do not get the correct answer, you should review the module contents to discover the correct response.

By completing the four-step process you will gain an overview of: nurse leadership and management, professionalism, communication and relationships, the health care environment and related management topics for today's nurses.

There is a summative final test at the end of the modules. Based on the expertise of nurse educators it was determined that a passing grade is 70%. If you do not attain this grade on your first attempt, we suggest you review the material and take the test again.

Learning Outcomes

By the end of the eight learning modules you will be able to:

1. Describe the differences between leadership and management.
2. Discuss components of professionalism in nursing.
3. Describe the processes of change and innovation in healthcare.
4. Explain the importance of healthcare communication.
5. Explore types and resolution of healthcare conflicts.
6. Discuss the dynamics of teamwork and interprofessional healthcare teams.
7. Explore concepts of diversity in healthcare.

Learning Activities

A primary resource for the content of this course is:
Huber, D. (2018). Leadership Nursing Care Management. Elsevier.
You do not need to purchase this text.

Other sources of material are downloadable e-books:
Applegate, et al. (2018). **Leadership in Healthcare and Public Health**
Goodman, B. (2019). **Leadership and Management in Nursing**
Wagner. J. (2018). **Leadership and Influencing Change in Nursing**

Throughout the modules there are links to readings and videos that enhance your learning.

Under some of the the Apply it! sections you find case studies to reflect upon from a nurse leader/manager perspective.

After each module there is a short multiple-choice quiz which you must complete and pass. You will find the answer code at the end of the module.

MODULE 1

What is Leadership?

As both leadership qualities and management skills are requirements for robust healthcare systems the first two modules focus on their definition and attributes. The first module delves into leadership. There is no one-size-fits-all leadership style nor only one way to describe an effective leader. In this module, you explore popular models of leadership and styles of leaders.

Learning Outcomes

At the end of this module you will be able to:

1. Discuss the definition of leadership and qualities and styles of leaders.
2. Discuss the roles of leaders.
3. Explain contemporary leadership theories and their application in nursing.

Definition of Leadership

Leaders are innovative and influence change, making improvements through forward-reaching action. Leaders get things done that meet the needs of the organization for, through, and with others by using their vision, influence and by engaging in social interactions with followers/ employees. They help employees create and achieve personal goals, and thus, to be effective in their jobs.

Effective leadership comprises three elements:

- Achieving Goals: meeting financial goals, producing quality products or services, satisfying customer needs.
- Creating smooth internal processes: cohesive groups, satisfied followers, efficient operations.
- Adapting to external influence: ability of the group to change and evolve effectively.

In the nursing profession, leaders identify clients' needs and encourage others to participate in actions that meet those needs. They have knowledge and skill sets that assist clients/patients in achieving their optimal health status.

Nurse leaders are action oriented and make a difference by empowering nurses through positive communication and bringing teams together to achieve group goals that consequently help build quality health care systems.

Key concepts

- Influence and motivate
- Vision and innovation
- Communication
- Group process to attain goals

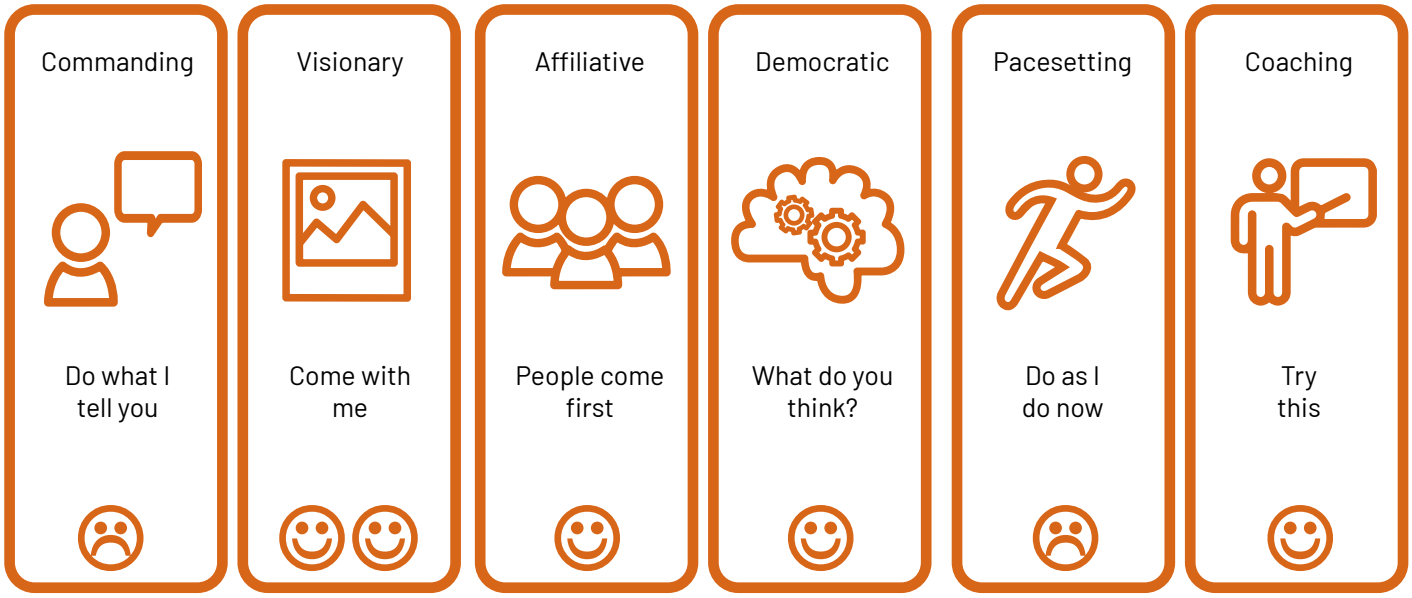
Main Leadership Theories

Leadership and management theory are usually discussed separately, despite their overlap. Leadership theories have been studied for a long time; not surprisingly, theories transition over time and amongst industries.

Today, in the information era, health care organizations are transitioning into interdisciplinary, holistic, and highly team-based learning organizations. These organizations value interpersonal connectivity, and support nurses' acquisition of evidence-based, professional knowledge and problem-solving expertise needed in the care of patients. Healthcare leadership must be interactional, relational, and transformational at all levels (Huber, 2018).

Contemporary leadership theories take dated feminist and transformational leadership perspectives into consideration yet focus on current behaviors for leaders: relationships, and interactions. This module reflects common contemporary theories from two decades of literature that are relevant to healthcare leadership: Goleman's leadership styles, charismatic, transactional, transformative and servant leadership as well as clinical leadership which is specific to nursing.

Goleman's Leadership Styles



In the early 2000's, **Goleman promoted 6 leadership styles** based on leadership research, and emotional intelligence. These six styles include:

1. Commanding leadership calls for immediate compliance by employees; they are ex-pected to carry out tasks without questioning.
2. Authoritative leaders motivate and mobilize employees toward a specific vision.
3. Affiliative leaders create emotional bonds and harmony with and among employees.
4. Democratic leaders encourage employee participation to build consensus and in deci-sion-making processes.
5. Pacesetting leaders expect excellence and self-direction from their employees.
6. Coaching leaders take time and energy to develop people so they can contribute to long term organizational goals.

Goleman demonstrated that each style is derived from the different components of emotional intelligence: self-awareness, self-management, social awareness, and social skill. His detailed description of styles is aligned to contexts and situations they are suited for, and pros and cons for using each one. Goleman's premise was that because each style was appropriate for different work-related situations, leaders should be able to transition seamlessly between styles. This should be feasible as leaders are able to improve their emotional intelligence through introspection, reflection, critical thinking, and application of new deportment and skills in the workplace. Thus, each style can be mastered and appropriately applied (Goleman, 2000).

Charismatic Leadership

Charismatic leaders inspire followers who are devoted and loyal to them and their vision.

These leaders have a strong conviction about their ideas and a high degree of self-confidence. They are energetic, enthusiastic, expressive, and excellent communicators. Charismatic leaders tend to actively build their image and manage the impression others have of them. They do this by appealing to their followers' emotions through their use of language, symbols, and imagery. Presenting a strategically crafted image as role models, they actively manage the impression others have of them (Takala, 2005). They "walk the talk," defining and framing the mission of the organization or group so it meaningful and relevant to followers.

Followers of charismatic leaders feel an intense emotional bond to the leader and believe their leader will change their organization, their community or even the world. Therefore, followers obey calls to actions, sometimes unquestioningly.

Charismatic leaders often emerge when followers perceive a need for change based on distress or a sense of impending crisis (Davis & Gardner, 2012). In these situations, charismatic leaders use dramatic symbols, and ideologies that help people understand their roles in managing the crisis.

On occasion charismatic leaders may mislead their followers with exaggerated estimates of their own or their followers' abilities and chances for success. Unethical charismatic leaders centre on themselves, while ethical leaders work with their followers to pursue and achieve a common goal (Takala, 2005).

Reflect: Are you, or have you worked with, a charismatic leader in your healthcare experience? How did this leader inspire you to work towards a specific cause, change or goal?

Transactional Leadership

Transactional leadership is based on control and motivation. Leaders promise rewards, called contingent rewards, to followers when they become productive, and accomplish tasks effectively. Contingent rewards, which are central to motivation, leadership, and management in this theory are given when followers fulfill their agreed-upon goals.

In transactional leadership training, leaders learn to reinforce appropriate behaviors, providing rewards for achieved goals. Inappropriate behaviours are discouraged and not rewarded; in some instances, punishment may ensue if goals are not met.

Healthcare organizations, which are typically bureaucratic, have traditionally employed transactional leadership strategies. Although transactional leadership can meet short and immediate term organizations goals, it neither inspires nor creates new cultures for healthcare organizations. Visionary and long-term goal accomplishment require transformational leadership.

Motivation with reward or punishment

Teams obey leaders

Teams are closely monitored and controlled

Transformational Leadership

Contrary to transactional leadership where leaders assign tasks and followers do as they are told, transformational leadership teaches people how to think, take ownership for their roles and, hopefully, exceed expectations.

Transformational leadership includes three factors.

1. Charismatic relationships inspire loyalty and respect between leader and follower. This strong bond reduces follower resistance and paves the way for engaging in major changes.
2. Intellectual stimulation is when the leader challenges followers intellectually and empowers them to problem-solve and develop innovative, creative solutions through a team approach. Teams challenge the status quo and determine what changes are needed, then search for novel solutions (Maxwell, 2017). Having the freedom to discuss and debate guides followers to perform beyond their expectations (Eisenbeiss, et al., 2008). As group interactions are not always convivial, transformational leaders must be excellent at conflict resolution.
3. Inter-personal relationships are developed between the leader and followers, with everyone being treated equitably and given unique attention. When followers feel special, they are inspired and motivated to be creative and perform better.

Transformational nursing leaders

Many nurse leaders are well-suited to the transformational role which calls for an interpersonal-oriented style of leadership and formation of unique relationships with each of their followers. They tend to be empathetic, expressive, and cooperative.

Transformative nurse leaders model integrity and fairness and set clear goals for their employees. They encourage creativity through empowerment, create supportive environments by rewarding experimentation and they allow for mistakes. They support their high expectations with appropriate resources and recognition.

Servant Leadership

Servant leadership is a value-based leadership model. It is more than a series of behaviors and actions, as providing service is the primary motivator for seeking a leadership role (Sherman, 2012). It can be highly emotional and personal, encompassing spirituality, integrity, caring for, and providing service to others. Servant leaders are optimistic, serving employees in the organization first by ensuring their high-priority needs are met.

Nursing servant leadership is a philosophy that resonates and guides the practice of many nurse leaders. Servant leadership builds trust with followers who believe their leader genuinely cares about their welfare. The ensuing psychological safety leads to increased employee engagement and the ability to attract and retain staff.

In healthcare where traditional bureaucratic environments are the norm, servant leadership can be a refreshing change for nurses, as servant leaders value teamwork, promote personal involvement, and demonstrate caring behavior. This type of leadership can enhance nurses' personal growth through professional development and coaching and help them problem-solve to better meet patient needs improve quality of care.
Ten characteristics essential for a servant leader include:

1. **Listening** –actively listens to staff needs of and supports their decision making.
2. **Empathy** – empathizes and understand other's needs.
3. **Healing** – resolves staff problems, negotiates conflicts and creates a healing environment.
4. **Awareness** – has a high level of emotional intelligence and self-awareness, and has a holistic view of situations.
5. **Persuasion** – persuades versus use of coercive power to influence
6. **Conceptualization** – visionary and focuses on the bigger picture.
7. **Foresight** – envisions situational outcomes and is proactive to attain the best results.
8. **Stewardship** – respectful of resources and staff and feels obliged to serve others without focusing on personal rewards.
9. **Commitment to Growth** – inclusive and values staff and helps strengthen them.
10. **Building Community** – recognizes the value of creating a sense of community among staff (Sherman, 2012).

Clinical Leadership

As one type of leadership model does not suit all organizational needs at any given time, leaders must learn and implement different styles. Although nurse leaders may adopt a style to suit a specific need, the model common

for all nurse leaders is Clinical Leadership.

There is a renewed focus on Clinical Leadership models at the point of care where innovation and improvement in organizational processes and individual care practices can achieve safe, quality outcomes.

Characteristics common to clinical leaders include:

- general leadership skills
- clinical expertise
- use of evidence-based practice to problem-solve
- effective communication
- collaboration and coordination
- practice skills in managing point of care patient services (Joseph & Huber, 2015, p. 56)

Module 1 takes approximately 2 hours to complete including tests

Leadership Styles and Attributes

Read it!

Read: Leadership and Influencing Change in Nursing: Sections 1.2; 1.3; 1.4 p. 12 – 20

Read: Morales, 2020. Characteristics and examples of transformational leadership in nursing.

Optional reading:

Bittner, A. (2019). Mentoring millennials for nursing leadership. Nursing, 49(10), 53-56. doi: 10.1097/01.NURSE.0000580656.81188.ee

De Moura et al. (2018). Charismatic leadership among nursing professionals: An integrative review.

Maxwell, E. (2017) Good leadership in nursing: What is the most effective approach? Nursing Times [online],113(8), 18-21.

Queens University of Charlotte (nd). Relationship between nursing leadership and patient outcomes. https://online.queens.edu/resources/article/nursing-leadership-and-patient-outcomes/

Smith, M.A. (2011). Are you a transformational leader? Nursing Management, 42(9), 44-50. https://journals.lww.com/nursingmanagement/Fulltext/2011/09000/Are_you_a_transformational_leader_.8.aspx

Solman, A. (2017). Nursing leadership challenges and opportunities. Journal of Nursing Management, 25(6), 405-406. https://onlinelibrary.wiley.com/doi/full/10.1111/jonm.12507

Watch it!
Why good leaders make you feel safe (11.59)

Apply it!
Take the quiz: What is your leadership style?

What is your primary leadership style?
Think of an example of when your style was effective.
Can you make changes to your style when appropriate?

Case Study
Leadership Challenge: Standing Up to a Charismatic but Unethical Leader
You work with a nurse leader who has considerable personal charisma. She has a grand vision of what the future of her unit should look like and how it should function. She has a lot of followers as she communicates with passion, inspires staff, and makes them feel special. You have prior personal knowledge and experience with her, and one of the few people who is aware she is not genuine. You believe she is focused on her personal agenda; wants to use others to advance her career, and would not hesitate to sacrifice her staff for her own benefit. You have also experienced that she is ruthless with those who disagree with her. You believe it is only a matter of time before her staff, your friends, suffer because of her extreme self-interest and lack of concern for others.

1. What can you do?
2. Should you share your concerns with other department members? With her supervisor?
3. If you decide to act, what are some productive actions you could take?
4. What are the consequences of your action or inaction?

Test it!
Take the Module 1 multiple choice quiz.

M/C Questions

1.Which of the following characteristics describe charismatic leaders?
a. Have clinical expertise and use of evidence-based practice to problem-solve
b. Inspire a shared vision and enabling others to act
c. Have a sense of spirituality, integrity, and care for, and provide service to followers
d. Appeal to followers' emotions through their use of language and symbols and strategically craft their image as role models

2. What leadership style uses contingent rewards to motivate employees?

a. Charismatic
b. Transactional
c. Transformational
d. Clinical

3. The value of transformative nurse leaders is that they:

a. Are good at controlling and motivating staff
b. Have healing characteristics help resolve staff problems and negotiate conflicts
c. Build relationships that create an intense bond with their staff
d. Create supportive environments that encourage creativity through empowerment, they reward experimentation and allow for mistakes

4. Leaders who are respectful of resources and staff and feel obliged to serve others without focusing on personal rewards best describes:

a. Servant leader
b. Transactional
c. Transformational
d. Clinical

5. Clinical leadership is a stand-alone model essential to all nurse leaders that can be combined with other leadership styles.

a. True
b. False

Answers: D, B, D, A ,A

MODULE 2

What is Management?

As an introduction to nursing management, it is important to know the distinction between management and leadership. To have the title of leader assumes competence. Therefore, an effective and successful manager can be considered a leader, but an incompetent manager is not a leader.

Management focuses on tasks, resources, processes, and operations of an organization. In the current healthcare systems, nursing management work is increasing in amount, scope, complexity, and intensity, especially where there are constrained resources. Nurse managers must acquire knowledge, skills, and abilities that help them manage effectively under stress, and the pressure of time constraints (Huber, 2018).

Learning Outcomes

At the end of this module you will be able to:

- Discuss 5 roles and responsibilities of a nurse manager.
- Compare and contrast systems theory and chaos/complexity theory.
- Describe MacLeod's seven elements of a management process
- Describe the factors contributing to the current global nursing shortage.
- Discuss the process of recruiting, hiring and orientation of new staff.
- Explain the 6 steps for the budget development workflow.

Definition

Nursing management is the application of the management process used to achieve a healthcare organization's goals and accomplish nursing care and services. It is central to nursing and requires a unique skill set that facilitates clinical work.

Managers plan, organize, coordinate, and control (Fayol, 1949). Nurse managers coordinate and integrate the work of nurses within the larger system and:

- monitor finances
- hire, train, and evaluate personnel
- aim to improve quality
- coordinate work loads
- solve problems
- meet organizational goals

Main Management Theories

Systems Theory

Systems theory looks at organizations as a whole. A system consists of interrelated, interdependent parts that work together to achieve common goals. Elements within systems interact with each other in their environment so when element in a system changes, it impacts the entire system.

Elements	Health Care Examples
Inputs to the system (resources)	Money, people, technology
Transforming processes/interactions (throughputs)	Nursing services, management
Outputs of the system	Clinical results, better life quality
Feedback	Patient & nurse satisfaction, government regulation, accreditation, lawsuits

(Huber, 2018, p.23)

Systems theory in healthcare can be used to analyze a planned change by identifying how inputs, throughputs, outputs, and feedback loops will fit into the current system. It may not be effective when dealing with high-risk areas and disorderly changes that can occur in most healthcare environments (Huber).

Chaos/Complexity Theory

Chaos theory implies that the world is constantly evolving to a greater level of complexity; the future is so unpredictable that long-term planning is not helpful. Simple systems can change in sudden, unexpected, or irregular ways due to the prevalence of uncertainty and non-linear interactions that deviate from the norm.

Health care organizations are complex systems with multiple parts, which are impacted and affected by internal and external factors. When multiple parts collide, they can create unpredicted and non-linear changes throughout the organization (Brockman et al. 2018).

Nurse managers need to understand this concept to move the practice environment forward. To do this, they must understand that controlling outcomes is a delusion. Rather, they must understand the past in order to prioritize present goals, while focusing on the future. This requires the ability to respect peoples' interconnectedness and communications, constantly

observe and assess situations, and make immediate adjustments that address the root of problems versus symptoms of the problems.

Management Processes

The management process is a rational, logical process based on problem-solving principles and simple practices.
Effective managers:

1. Ask: "What needs to be done?"
2. Ask: "What is right for the organization?
3. Develop action plans.
4. Take responsibility for communications and decision-making outcomes.
5. Are focused on opportunities, not problems.
6. Administer productive meetings.
7. Refer to "we," not "I."

MacLeod, (2012) proposed seven elements of a management process.
Planning: Identifies goals, selecting priorities, results, and methods to achieve results.
Strategic planning determines organizational purposes based on mission, vision, and major goals.
Tactical planning determines the specific details needed to implement goals, for instance project planning, staffing requirements, and marketing strategies.

Organizing: Resourcing supplies and people to accomplish goals. It includes establishing jobs, responsibilities, and positions within a unit. Nursing organizational activities include budgeting, staffing, and scheduling and developing committees and bylaws, orientation, and staff education.

Staffing: Recruiting, hiring, training, and retaining employees

Directing: Meeting organizational objectives by creating a healthy work environment through motivation, supervising, scheduling, and disciplining. The function of directing involves supervising and guiding others to accomplish their assigned duties. Managers require interpersonal skills to direct and supervise tasks, and to create and maintain employee motivation. Motivating influences up to 80% to 90% employee participation and positive outcomes (Hersey et al., 2013).

Coordinating and controlling activities builds a good work climate. Coordination is integral to motivating, supervising, scheduling, and ensuring desired results. If results are substandard, managers take action to modify, remediate, or reverse outcomes. A nursing example is using a standardized nursing clinical practice protocol to track client care. Managers analyze and correct variances through constant internal re-evaluation.

Reporting progress and results.

Budgeting.

Magnet Hospitals

Magnet hospitals directly impact the nursing profession and thus the work of nurse managers. They have specific organizational cultures that foster autonomy and control of practice. Nurses and physicians have strong, collaborative relationships. Higher levels of teamwork are associated with improved levels of nursing care and create an environment where practice excellence is the norm as are lower incidences of adverse events which improves patent outcomes (Kalish & Xie, 2014).

Organisations should encourage nursing input in staffing decisions and have staffing policies that are evidence-based, ethical and evaluated. They must provide adequate support services, appropriate equipment, and technological support for patient care (American Association of Critical-Care Nurses, 2016).

Nurses in magnet hospitals value education that includes professional development beyond orientation: in-service education, continuing education, formal education, and career development. Nurses value professional development for its economic potential, personal and professional growth, career advancement opportunities, and preceptor skill development.

Nurse managers in these hospitals provide administrative support. Clinical and managerial resources are also available.

Dealing with Nursing Shortages

Nurse managers are challenged by changing conditions, one of which is nurse staffing. A nursing shortage is defined as a situation in which the demand for employment of nurses (how many nurses employers would like to employ) exceeds the available supply of nurses willing to be employed. The hallmark of a nursing shortage is the discrepancy between the supply and demand for registered nurses (RNs). Indicators such as employer reports, vacancy rates, turnover, recruitment difficulty, staffing levels, RN supply per population, or forecasting models are used to determine a nursing shortage (Leadership and Nursing Care Management, 2018).

The nursing shortage cycles over the past few decades have been driven by the following:

- Aging of current nurses in the workforce and their impending retirement
- Lower numbers of students entering nursing as a career and a shift in need for nurses with graduate and post-graduate degrees
- Decreased number of academic nursing faculty, diminishing the ability of nursing schools to meet education demands
- Aging global population and need to expand capacity to meet care demands
- Significant changes in health care delivery systems as nations reform health care

Work Factors Impacting Shortages

Work environment factors cited as stress-related reasons for increased nursing turnover include workload, lack of autonomy, relations with managers, and compensation (Hayhurst et al., 2005).

One remedy is to promote the 6 tenets of healthy work environments: effective communication and decision making, honest collaboration, appropriate staffing and workload, meaningful recognition, and authentic leadership.

Workload and Staffing

Insufficient staff raises nurses' stress level, affects job satisfaction, and causes nurses to leave the profession. Some institutions have a team of 'float nurses' who are assigned daily to diverse units where there are reported sick calls. In these situations, the nurse manager must assess patient acuity and the float nurse's knowledge and skill base to ensure appropriate work assignments and safe patient care.

Research shows that appropriate patient assignments improve job satisfaction and can be a key factor in retaining experienced nurses in healthcare institutions (Hairr et al., 2014).

Recruitment and Compensation

Recruitment is complex and may have strong links to partnerships with schools of nursing and related clinical and preceptor programs. These initiatives can attract and retain (or deter) new graduates. When a nursing student enters an institution for training, it opens the opportunity to forge relationships and opportunities for students. This assists institutions with recruitment and retention strategies so students can transition to the health care facility in a nursing capacity.

Compensation varies across geographical areas and healthcare systems. The only consistency is that during nursing shortages, whether local or national, there is market pressure to increase nurse salary levels.

Screening, Interviewing and Hiring

Screening is the process where applications are reviewed to determine whether the nurse meets pre-established criteria for the position. Equal opportunity employers follow established guidelines, and most application processes are completed and reviewed online. Although this increases the applicant pool it also requires increased screening time.

The interview is designed based on the job description and is the basis for hiring. Targeted interviewing methods helps interviewers gain personal and professional information from candidates and helps evaluate the candidate's values and practice patterns. This type of interview discourages subjective bias, allowing for objective comparison of candidates based on their responses. It keeps interviewers on target and asking appropriate questions.

Open-ended and follow-up questions are recommended. For example:

- Tell me about your current position.
- What do you like best / least about it?

Questions can get more in-depth responses and determine the candidate's behavior:

- Think of a time in your experience when X was needed, and describe how you did X.

Questions that are job-specific allow the candidate to discuss actions and decisions such as the following:

- How would you handle the varied work hour requirements?
- Based on work requirements relative to lifting, how would you transfer a patient who weighs 350 pounds?

Information obtained through an interview helps the committee or manager assigned to the recruitment process to determine the candidate's "fit" with the unit and/or organizational culture. Results from multiple interviews provide consistent data to compare candidates.

Hiring an employee who practices the core values of an organization ensures a fit with unit staff and the organization. It eases employee transition into their new role and has been shown to have an impact on retention and organizational cost savings.

Conversely, a poor candidate selection can waste training and development funds, result in decreased productivity, staff morale, and dissatisfied

clients.

Orientation and Performance Evaluation

Organizational orientation is directed at engaging and integrating new employees by assisting them to successfully prepare for their job. Orientation must extend beyond employee's initial introduction to the organization and role expectations by providing a defined coaching and mentorship program. This extension of orientation, or onboarding, is an interactive process centered on self-learning and renewal that lasts up to 1 year.

Performance evaluation provides feedback during employee onboarding by an assigned preceptor/coach, and in most organizations, new employees receive an initial formative performance evaluation within the first 3 - 4 months.

A full performance evaluation then occurs at the end of the orientation period and annually thereafter. Feedback regarding ongoing performance needs to focus on the employee's achievement toward defined goals, their relationships with peers, and their contribution to clinical and/or leadership practices (Huber, 2019).

Staffing and Scheduling

There is a societal contract to provide safe, quality nursing care and services for all clients in every health care setting (ANA, 2010). Staffing management is a critical contributor to achieving these outcomes. Staffing management is a crucial, highly complex and time-consuming activity for nurse managers.

Staffing management and successful clinical outcomes across the healthcare care continuum are dependent on providing the right number of nursing staff with the right qualifications.

Staffing is a complex adaptive system subject to changing external environments, nursing work rules, workload, workflow, and institutional financial targets. Further, the nursing workforce is affected by diversity and cultural differences, and an increased need for technological skills. There has been a generational change in value such as a renewed focus on lifestyle, family time, and work/life balance that influence whether nurses choose to work full or part-time. This influences how nurse managers staff their units.

Current evidence-based models and European nurse-staffing research support the rationale for specific staffing mixes and educational qualifications. These can be found in the Read It! section of this module.

Health Information Technology: Staffing Software

Nurse scheduling may be done manually by managers who use templates, or the previous schedule to plan the appropriate number and type of staff to match patient volume. This process is complicated, however, this need not be the case as there is a variety of scheduling software available designed to improve the process. Predictive analytics offers a solution by forecasting patient demand weeks (and months) in advance. Analyzing historical census and other data and metrics for each unit provides accurate staffing forecasts so the right healthcare provider is available at the right time. Nurse managers are responsible to ensure reliable data is being used to build these predictive models to ensure accuracy. Successful implementation of such software have increased employee satisfaction, improved nurse retention, saved labour costs, and decreased managers' time spent on staff scheduling (Larson, 2018).

The American Nurses Association created a resource for nurse managers who are considering the evaluation of software solutions that helps assess Workforce Management (Staffing) Systems, Patient Classification/Acuity Systems, and the Request for Proposal (RFP) process.

Budgeting

Nurse managers need to understand budgeting, productivity, and costing to manage financial resources responsibly in an era of soaring health care expenditures and limited resources. Staff nurses' involvement is also necessary as they are the frontline employees who have ideas and strategies to contain costs at the unit level because they constantly make decisions about products, and resource allocation.

A budget is a cyclical plan specified in the currency of the country. It is a framework that conveys management's intentions and financial expectations regarding revenues and expenditures.

Budgets are designed to be planning documents, that must be useful; flexible and modifiable so administrators do not hesitate to take appropriate actions or decisions to deal with unanticipated contingencies. Budget processes ensure that resources are appropriately aligned with key organizational initiatives (Talley, & Thorgrimson, 2019). A full description of the budget development process can be found in the **Read It!** Section at the end of this module. Before you delve into the process, however, it is important to understand the two types of budgets found in healthcare organizations: the capital budget and the operational budget.

Capital budgets deal with spending large amounts of money on goods that have an anticipated life span within the organization. The criteria may differ over organizations, but as an example, capital expenditures may be

'items costing over $10,000 and having a life span of 5 years.' As you can imagine, organisations require unit managers to support these requests with such documents as: needs analysis, vendor quotes for purchase/ installation, staff training, and explanation of how the purchase relates to the organisation's strategic objectives. After the capital expenditure lists are complete, the finance department generates an organisational list of items for purchase that is negotiated, prioritized and decided upon by senior management (Talley, & Thorgrimson, 2019).

Operating budgets are created each fiscal year and address daily operations. There is a labor budget and expense budget that includes such items as patient supplies, office supplies, pharmacy etc.

As each unit generates a 'revenue' from caring for patients, expenses are charged against this revenue and include such items as utilities, housekeeping, linen, and miscellaneous administrative services. Nursing service areas have a unit of service measure reflecting the type of services provided. For instance, inpatient nursing units measure patient days, while the OR measures volumes in OR minutes.

Service measures help analyze productivity used for: monitoring trending, comparing to benchmarks, reporting to regulatory bodies, and budgeting. The nurse manager conducts their budget performance analysis and presents the unit's performance data to hospital administration and finance to justify the new operating budget. Nurse managers who demonstrate fiscal understanding and knowledge of the budget process are likely to be more successful at achieving budget objectives (Talley, & Thorgrimson, 2019).

Retaining the Nurse Manager

This module highlights the pivotal role of the nurse manager, as this person is essential to staff satisfaction and retention, and achievement of organizational goals including quality patient care. The number of qualified nurse managers in acute care institutions, however, is decreasing (Zastock & Holly, 2010).

Factors affecting nurse manager retention are retirement, unreasonable span of control (number of direct staff reporting to them), and increased staff diversity with coordination required across different nursing units. Tight resources, the need to keep abreast of changing regulatory requirements, and acquire new management skills are challenging. The tipping point for some is also the increased acuity of hospitalized patients and ubiquitous technological availability that increases the pressure of 24/7 communication and availability (Zastock & Holly, 2010). Healthcare organisations must address these issues in order to retain the requisite

number of nurse managers.

Module 2 takes approximately 2 hours to complete including tests

Read it!

Nurse staffing and education in Europe: if not now, when? 2014.
4 Management Styles to Strive For, and 4 to Avoid (7:00)

Watch it!

The future of work is chaos (13.43)
Can you name three phrases that explain chaos?
complex unpredictable, appears random, sensitive to micro change
Do you think chaos theory is appropriate to manage healthcare work?

Apply it!

Take the quiz: Management Style Questionnaire
What do you think of the results?

Test it!

Take the Module 2 multiple choice quiz.

Questions

1.Which of the following statements is true?

1. **Management focuses on tasks, resources, processes, and operations of an organization.**
2. **Leaders focus on people and relationships, guide and motivate employees to reach their goals.**

a. 1
b. 2
c. 1&2
d. Neither 1 nor 2

2.During the Covid 19 pandemic, a tertiary hospital made the decision to halt elective sur-gery so the ICU would not be overburdened with ventilated surgical patients. Nurses from the OR were deployed to Covid testing units. The closure of the OR allowed the hospital to create more ventilated beds in the postanesthesia care unit. These decisions allowed the hospital to treat all Covid patients, but negatively impacted the elective surgery waitlist.
What kind of management theory does this scenario demonstrate?

a. Systems theory
b. Chaos theory
c. Complexity theory
d. Authority theory

3.Lucienne is a nurse manager on a acute medical unit. The hospital has budgeted for a total upgrade of IV pumps in the new fiscal year. She wants to involve all nurses on the unit in the decision-making process, and she will make the final decision based on their feed-back.
Lucienne is demonstrating what kind of management style?

a. Coaching
b. Democratic
c. Servant
d. Autocratic

4.The management process is a logical, systematic approach based on problem-solving and effective practices. According to MacLeod, which elements are in this process?

a. Communication, marketing, decision-making, responsibility for actions taken
b. Recruiting, staffing, leading productive meetings, budgeting
c. Planning, organizing, staffing, directing, coordinating, reporting, budgeting, Staff scheduling, motivating, assessing practices, implementing new practices, evaluating

5.Which of the following factors contribute to the current global nursing shortage?

1. Aging of current nurses in the workforce and their impending retirement
2. Maintaining the status quo in health care delivery systems with high compensation for nurses
3. Decreased number of nursing educational faculty to teach in graduate and post-graduate degrees and lower numbers of students entering nursing as a career

a. 1 & 2
b. 2 & 3
c. 1 & 3
d. All of the above

Answers 1 C; 2 D; 3 B; 4 C; 5 C

MODULE 3

Components of Professionalism

Professionalism in nursing encompasses multiple topics. Nurse managers, as leaders and role models, must hold their practice to the highest standards by using evidence-informed practice, and adhering to values and ethico-legal practice. They must have the competencies to create a practice environment that encourages collaborative relationships and teamwork and be able implement interventions to maintain staff health. Managers accomplish this by sharing with their nursing staff a philosophy of care that integrates the unit's purpose, best practices, and patient/family/employee centered care. In this module you learn practical tactics for nurse managers to make decisions, manage time, and assess and intervene with employees who experience stress and moral distress.

Learning Outcomes

- Describe the relationships between nurse leadership and healthy practice environments, patient safety, and quality patient care outcomes.
- Identify some of a manager's stressors relating to time management and propose interventions.
- Explain five ethical principles that nurses must adhere to.
- Define moral distress, explaining causes, symptoms and interventions.
- Explain rationed nursing care and its causes.
- Outline the steps in the decision-making model.

Ethico-legal Practice

Nurses, as health care professionals, must consistently practice within jurisdictional laws, scopes and standards of practice, and ethical codes based on professional levels of education and experience.

Legalities involving healthcare professionals is country/state specific, and it is the responsibility of all nurses to know and practice legally, and for nurse managers to enable legal practices that prevent patient harm.

Nurses and nurse managers are accountable for supervising licensed and unlicensed healthcare personnel. Supervision includes monitoring performed tasks, ensuring they are done correctly, and assigning tasks appropriately so they do not exceed the competency level of the care giver.

In order to do this, managers must assess the competency of staff; provide adequate and ongoing training and evaluation; make appropriate staffing decisions; and ensure professional client treatment.

Ethical principles are universal and fundamental to healthcare decision-making. Common ethical terms include the following:

Autonomy is the ability of individuals to make their own health decisions.
Fidelity is being loyal, faithful, and committed to clients and accountable for ones' actions and responsibilities.
Veracity is telling the truth to the client and not providing deceptive or misleading information
Confidentiality means one cannot disclose a client's information to anyone without the client's permission
Privacy is the client's right to having their personal information and data protected.
When ethical principles are breached, it can compromise care and lead to stressors for nurses.

Time ~ Stress

Situational stress in healthcare and the ability to respond in a timely manner is inherent in nursing practice. Nurse managers anticipate and prepare for stressful situations that require time-sensitive care and decision making. The inability to manage time and make appropriate decisions can cascade untoward events.

Managing time is a deliberate process of identifying, focusing, prioritizing, and completing activities needed to achieve goals (Claessens et al., 2007) efficiently. Managers can look at specific strategies to help manage their time. Schedule blocks of time daily to:

- Conduct unit rounds with patients/families, and staff
- Tackle and make sure you prioritize emails. You may prefer to consider this for later in the day versus the beginning.
- Have an 'open door' policy so staff feel comfortable coming to you for advice or to ask questions.

Other time management strategies include: post your daily schedule on your office door with your contact information in case of urgencies; take time to recognize staff for their contributions, celebrate occasions; schedule periodic meetings; support staff by following-up on issues, questions, and concerns in a realistic time frame.

Moral Distress

Nurse managers must understand the conditions their staff work in and respond rapidly to diverse events such as unexpected budget short-falls or

dealing with community health crises. Such unplanned events add to the staff nurses' regular responsibilities and can cause complexity compression – the need to manage normal and extra responsibilities within specific time frames. Beyond the psychological repercussions of *complexity compression* is a more dire condition: *moral distress*.

According to Sasso et al. (2016), moral distress is emotional, psychological, and physiological suffering that commonly happens with nurses when their actions go against their ethical values, principles, or moral commitments. Ethical dilemmas that compromise care or go against professional values and put patients or professionals in harms-way cause distress.

Unpredictable situations, complex encounters, and reduced time for care activities are stress-inducing ethical and moral conflicts that can result in acute or chronic physical, psychological or emotional issues (American Psychological Association, 2013).

Resilience is the ability to bounce back from negative situations causing stress. According to Pines et al., (2012), resilient people have a positive self-image, an optimistic internal locus of control, act in helping others, are empathetic, and organized with their daily responsibilities. Nurses can learn the behavioral skills needed to manage interpersonal conflict, and over come feelings of powerlessness and psychological distress. Nurses who are resilient are psychologically empowered and can manage external stressors.

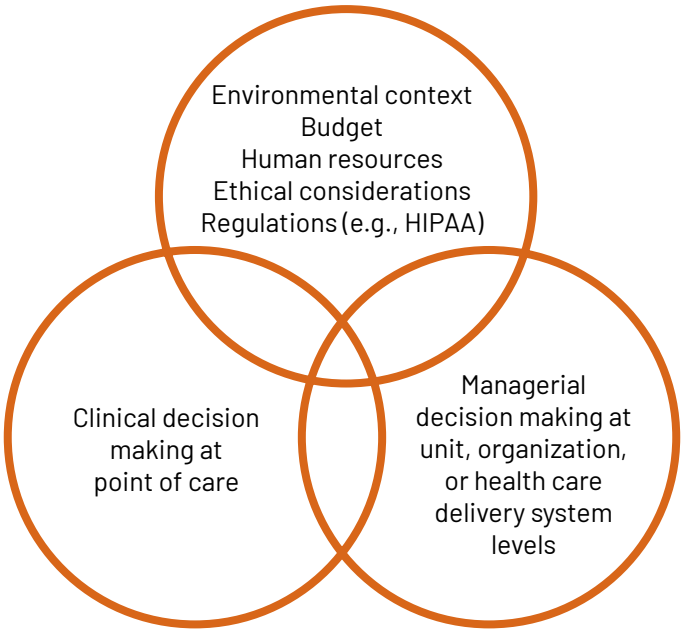
Altman (2020) describes causes, symptoms and solutions that managers should be attentive to with employees, particularly in time of stress (see readings).

Dynamic Work Environments

Starting with a strong ethico-legal stance, nurse managers can move to creating a dynamic work environment. The first step is developing a nursing unit vision and purpose that aligns with the organization. Next is ensuring that nursing services are based on primary health care principles and meet specific needs and perspectives of patients/clients using a patient-focused approach that involves them in care plans. Nurses must be professionally accountable and adhere to standards of practice and codes of ethics, provide culturally relevant care using evidence-informed best practices, and recognize when to advocate for issues of social justice.

Managers who know the collaborative team members' professional preparation, personalities, and unique contributions can empower them to accomplish organizational goals. Effective delegation, and communication can lead to motivated, self-directed professionals; offering incentives can assist with a supportive learning environment and encourage life-long learners. Creating and maintaining a dynamic environment is an iterative process and nurse managers must always be aware of the need to massage, tweak or radically

change aspects of the environment as situations and needs change.



The relationship between clinical and managerial decision making.
Source: Frank. Chapter 4 Nursing Leadership

Managerial Decision Making

Nurses make clinical, managerial, or direct care decisions within organizations, communities or at the health care delivery system level. Effective decisions rely on analytical skills that take into account individual staff and patient care needs, ethical frameworks and human resource and financial considerations. All decisions impact the quality and safety of care, as well as the climate of the healthcare workplace.

Nursing administrators' standards of practice and competencies support that all nurses must be able to gather, analyze and synthesise a lot of information to make decisions. The spectrum for nursing decision-making ranges from day-to-day patient care, to managing resources and solving multifaceted problems in complex healthcare systems.

Many models exist as step-by-step frameworks to guide decision making for nurses depending on context and complexity of the environment. Nurses may be sole decision makers or may facilitate group decision making. The nursing process (assess, diagnose, outcome identification, plan, implement, evaluate) is an example of one well-known model for clinical decision making. However, the nursing process is not effective for the nurse manager who must choose between competing alternatives for action.

The following is a basic problem-solving process:

- identify the problem
- gather information
- determine the desired outcome
- develop solutions

- consider the consequences of the solutions
- make a decision
- implement and evaluate the solution

It is also important to reflect on the efficacy of the process used for decision-making as a learning tool for future reference.

Missed or Rationed Nursing Care

Missed or rationed nursing care refers to patient care that is implicitly prioritised, left incomplete, or omitted. This occurs when there is insufficient time, staff, and material resources for nurses to carry out care activities for all patients. Examples of contributing factors include the enhanced acuity of patients, reduced staffing due to sick calls and attrition, and staffing skill mixes that do not meet the care and safety needs of patients. This results in situations where nurses on a shift work harder with less support. They are forced to prioritise, ration or miss care, resulting in higher morbidity and mortality rates. Nurse managers are challenged by work intensification, because maintaining patient safety, despite added acuity, must be balanced with meeting staffing and resource targets.

Despite healthcare organizational directives, nurse managers must advocate for their employees and patients, ensuring that concerns are heard by upper management. This is done by monitoring and reporting situations on shifts that result in incomplete care.

An excellent resource to assist nurse managers in efforts to reverse this phenomenon can be found in document created by the European Cooperation in Science and Technology (2020). Promoting Patient Safety through Minimising Missed Nursing Care.

Module 3 takes approximately 2 hours to complete including tests

Read it!

Altman (2020). Facing Moral Distress During the COVID-19 Crisis
Kompanje (2020). Ethics in the time of Corona

Watch it!

Read and watch the short video outline basic ethical principles involved in healthcare decision-making
A matter of life and death: Which patients should doctors treat first? (3:07)

Test It!

Questions

1. Nurse M and Nurse S are friends working on different units. They are taking a coffee break together. Nurse M says "Can you believe it? I have a patient, Mrs. H. who's 70 years old and was admitted in respiratory distress. She has Covid 19 and admitted she has been out in public and has not been following the recommended health precautions. Some people deserve what they get! What ethical principle is Nurse M breaching?

a. Autonomy
b. Fidelity
c. Veracity
d. Confidentiality

2. Events like dealing with unplanned community health crises can add to nurses' regular responsibilities. The need to manage normal and extra responsibilities within specific time frames can cause complexity compression. This can in turn lead to

a. resilience
b. moral distress
c. interpersonal conflict
d. team dysfunction

3. A nurse on an acute care unit comes on to the night shift to find there are two sick calls with no replacements. He knows from the outset that he will have to prioritise and that once again, some patients may not receive the prescribed care. This is considered rationing care.

a. True
b. False

4.The process for managerial decision-making occurs in the following order:

a. identify the problem, develop solutions, plan the implementation
b. gather information, figure out a solution, discuss the solution with your employees, implement the solution.
c. identify the problem, gather information, determine the desired outcome, develop solutions, consider consequences of the solutions, make a decision, implement and evaluate the solution
d. brainstorm with the staff to determine the problem, come to a consensus with the staff on a solution, ask the staff to implement and monitor the results

5.Which of the following is NOT a cause for rationed nursing care?

a. Insufficient time
b. Reduced patient acuity
c. Insufficient resources
d. Inadequate staffing

Answers 1 D; 2 B; 3 A; 4 C; 5 B

MODULE 4

Change and Innovation

Introduction

Continuous change is the new normal in healthcare. Nurses are bombarded with adapting to an aging demographic, increasing patient acuity, and strains on mental health, emergency, and geriatric services.

The information era benefits and challenges healthcare environments. Nurses must reassess all levels of educational requirements, practice models, skill mixes, the complexities of integrating research and evidence-based practice. Ethical dilemmas are common. Change is complex, messy and seldom easy. Dealing with perpetual change can be stressful for all nursing positions resulting in change fatigue (Vestal, 2013).

Nurses have three choices: they can resist, ignore, or actively participate in change processes. Nurse managers and leaders guide healthcare change processes and must understand change theory, applicable research, and cases of successful change projects. They must initiate changes that are most likely to be implemented at the point of care by staff nurses. Nurse managers must understand the role of their nurses in creating and sustaining change.

Learning Outcomes

- Explain why nurse managers must be change agents.
- Identify change theories: Lewin's Unfreezing–Change–Refreezing Model
- Discuss the similarities between the nursing process and the change process.
- Describe the nurse manager's role in initiating, implementing and sustaining change.
- Discuss how managers handle resistance to change.
- Differentiate among change strategies

Definitions

Change is a complex process that makes things different than they were. There may be unpredictable variables along the path to change.

Three main types of change are:

1. **Planned change** is a deliberate decision and effort to improve the system.
2. **Innovative change** introduces new ideas or methods.

3. **Transformative change** is a creative use of novel ideas and innovations that make a fundamental impact on a system.

Two organizational change strategies

Top down: Initiating and sustaining organizational change adds unique challenges. Organizational change can be imposed by administrators as a top-down planned strategy. A plan for the change is determined, communicated to middle managers and disseminated to employees. If employees deem the change unnecessary, imposed from above, or threatening their work security, the process is often met with resistance and may not work (Longenecker & Longenecker, 2014).

Emergent

Emergent change takes multidimensional complexities and the importance of a participatory process into consideration. All members of the organization are involved in generating ideas, planning, implementing and sustaining change. In nursing, staff and "recipients" of change at the point of care are integral to the process (Longenecker & Longenecker, 2014; Shanley, 2007).

Resistance is the refusal to accept change; it may slow down or stop the change process.
Change agent is a facilitator encouraging people to change behaviors and/or opinions. (Cambridge Dictionary, 2016).

Disruptive innovation

Disruptive innovation is a process where a new technology that is easily adapted by the end user, becomes popular and displaces established technologies or business practices that have been slow to change. Examples in the healthcare sector include increasing the use of nurse practitioners for primary care, and, a trend that is already occurring, moving more patient care from acute care hospitals to clinics and homes (Huber, 2018). For a clear understanding of this topic please view the video below.

A further example is the ongoing EU project interopEHRate, electronic health records in peoples' hands across Europe. Citizens of EU countries will have access and full control of their private healthcare records via secure Smart EHRs on mobile devices.

Module 4 takes approximately 2 hours to complete including tests.

Read it!

Leadership and Influencing Change in Nursing. Chapter 9 Common Change Theories and Applications to Different Nursing Situations p. 155 – 170.

Optional Reading: This document reveals the EU Expert Panel suggestions for effective ways of investing in health. EU (2016). Disruptive Innovation Considerations for health and healthcare in Europe

Watch it!

The Future of Work is Chaos (13:43)
Lewin's 3-Stage Model of Change: Unfreezing, Changing & Refreezing (8:07)
Roger's Diffusion of Innovation (3:36)
Disruptive Innovation Reimagining Health Care (8:43)

Apply it!

Case study

Disruptive Innovation in Health Care

Disruptive innovations involve technology that is meant to simplify processes. An example in healthcare involves an innovation developed for African American men. This population has higher rates of hypertension than the rest of the population. Hypertension can lead to co-morbidities. A barber-based blood pressure control program for African American men was instituted by trained barbers in African American owned shops. They provided blood pressure monitoring to their male clientele during each haircut and provided printed educational materials and feedback encouraging people with elevated blood pressure to visit their doctor. Screening processes and educational materials provided at each haircut significantly improved blood pressure control and increased treatment rates in hypertensive clients. This innovative approach met a community health need in a cost-effective manner. Source: Adapted from Huber, 2018.

Test it!

Test your knowledge by completing the Module 4 multiple choice quiz.

Questions

1. What does the creative use of novel ideas and innovations that make a fundamental impact on a system refer to?

a. Transformative change
b. Innovative change
c. Emergent change
d. Planned change

2. According to Lewin the reason for creating awareness of why the current status or situation needs to change helps with

a. Communication
b. Unfreezing people's resistance to necessary change
c. Transitioning people to a new, changed status
d. Solidifying change

3. In September, 2019, around 600 New Yorkers queued up near Apple's Fifth Avenue store to purchase the newly released iPhone 11. Roger's diffusion of innovation theory calls these people

a. Laggards
b. Early majority
c. Innovators
d. Early adopters

4.Managers can reduce resistance to change by:

a. involving staff in planning change
b. Sharing information
c. Surprising staff with a needed change
d. A&B

5. An approach to change that has a process directed by everyone, with self-directed behaviour and using task lists with a 70% adoption rate describes:

a. systematic change
b. transformational change
c. chaotic change
d. nursing process change

Answers: 1 A; 2 B; 3 D; 4 D; 5 C

MODULE 5

Healthcare Communications

Introduction

Communication plays a central role in health care. Effective team and interpersonal communications have been empirically shown to improve patient safety and satisfaction as well as having a positive contribution to employee engagement and organizational culture.

A manager's efficacy is predicated on an effective, open communication style that is trustworthy, respectful, and empathetic. This style builds a culture where followers are receptive to the organizational vision and mission and need for ongoing healthcare changes. Nurse managers are daily engaged in interactions and interventions that call for skillful, sensitive communication strategies such as persuasion, negotiation, bargaining and conflict management. In this respect a skilled manager acts as a role model for encouraging the effective development of communication skills in all peer-to-peer, interprofessional and nurse/patient interactions (Vertino, 2019).

Learning Outcomes

- Explain why nurse managers must excel at communicating.
- Consider the variables impacting communications and possible causes, consequences, and cures, for 5 ineffective interpersonal communications.
- Reflect upon personal attributes that are effective and ineffective for communication and methods to become an effective communicator.
- List consequences of poor communication to healthcare.
- Relate organizational culture and "no talk" rules to tensions in the workplace.
- Discuss TeamSTEPPS and SBAR communication techniques used to ensure patient safety.

To start this module, please read the article by Vertino (2014). Effective Interpersonal Communication: A Practical Guide to Improve Your Life. Then proceed to the reading below and completion of the activities.

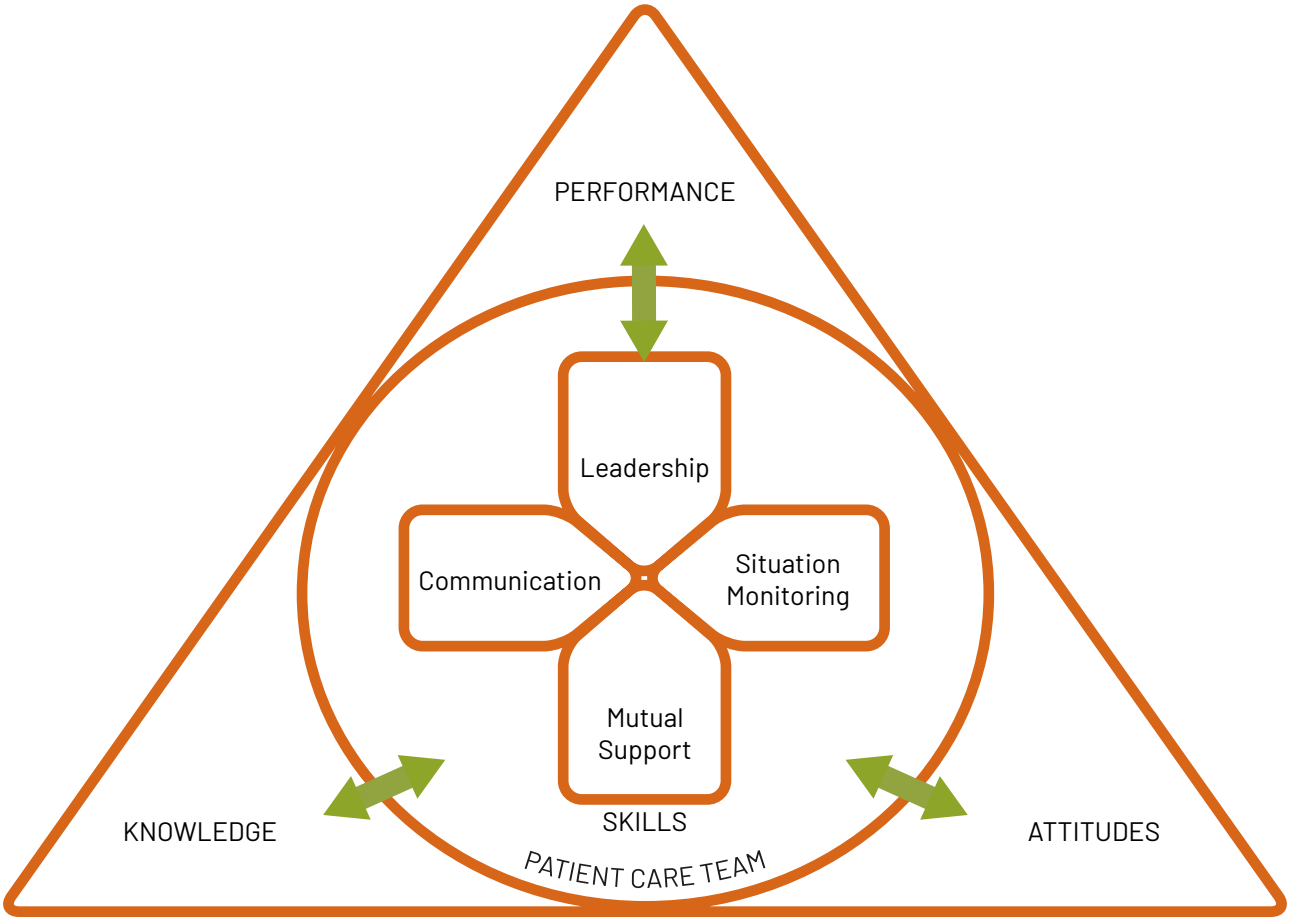
Effective Team Communication

Nurse leaders/managers need to be familiar working and communicating with groups and teams who are foundational to healthcare within the organization. Participants in a group who are satisfied and pleased to be part of that group, are

effective contributors. The leader's style of communication used with groups starts with defining and clarifying, and transitions to involving and empowering when the group is ready (Hersey et al., 2013).

There is much research evidence that acknowledges that preventable medical errors leading to unsafe patient care are often a result of ineffective team communication. To that end, different strategies have been developed and evaluated that assist team communication functions. One of these is TeamSTEPPS.

TeamSTEPPS is an evidence-based, training program designed to enhance team communications. The acronym stands for Team Strategies and Tools to Enhance Performance and Patient Safety. Teams in different health care settings and specialty areas have been trained to use this program that has 5 pillars: team structure, leadership, situation monitoring, mutual support, and communication. Extensive education and training programs are available on the Agency for Healthcare Research and Quality website.



Model of TeamSTEPPS key principles of teamwork.
Source: [Agency for Healthcare Research and Quality. 2016]. TeamSTEPPS: Strategies and tools to enhance performance and patient safety. Rockville, MD: Author. http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html

SBAR, another communication or reporting technique stands for: **S**ituation, **B**ackground, **A**ssessment, and **R**ecommendation. This verbal technique facilitates communication that is focused, timely, and prioritises information between nurses, physicians and other healthcare providers in urgent care and day-to-day reports.

Module 5 takes approximately 2 hours to complete including tests

Read it!

Vertino, K., (September 30, 2014) Effective Interpersonal Communication: A Practical Guide to Improve Your Life . *The Online Journal of Issues in Nursing, 19*(3), Manuscript 1. DOI: 10.3912/OJIN.Vol19No03Man01.

Optional: Hersey, Blanchard & Johnson. (2013). Management of organizational behavior: Lead-ing human resources. 10th ed. Pearson Education.

Search: Agency for Healthcare Research and Quality for TeamSTEPPS program and other interprofessional communication resources.

Watch it!

It's not about the nail (1:41)
Inpatient Surgical: Successful Outcome With TeamSTEPPS technique (6:59)
What is SBAR? (5:04)

Apply it!

Review the possible causes of ineffective communication in Ventino, Table 1: Ineffective Interpersonal Communication: 12 Possible Causes, Consequences, Cures, and Examples for Effective Communication.
Can you identify any that personally relate to you? Write down measures you can take to improve your communication.

Case Study

Nurse Cassar works is a charge nurse on an inpatient unit. Due to post-pandemic issues, there had been a change of two nurse managers over the past year leaving the unit and staff in a chaotic, unsettled state. In the interim, the shift charge nurses were responsibility for the unit. Nurse Cassar was frustrated because she was responsible for staffing issues. Short staffing resulted in mandatory overtime, daily sick call due to complaints of burnout and feeling powerless because nothing seemed to change for the better on the unit. There were always patient care and staff issues to resolve or other practitioners needing assistance with unsolved problems, and they trusted Nurse Cassar to help as she was efficient, organized, and got the job done.

She heard about the TeamSTEPPS program in a leadership and management

course she was taking. She went to the appropriate website, read the material, and eventually convinced her superior to allow her to attend a training session. Nurse Cassar learned about the importance of daily huddles, briefs and debriefs, and then implemented training on her unit. Over a short period of time staff started supporting each other and working more together as a team. The morale on the unit improved, yet the workload had not changed.
Source: Based on Ventino 2019.

Test it!

Take the Module 5 multiple choice quiz.

1. One of your unit nurses is consistently upsetting her co-workers with misdirected anger and blame. The finger-pointing and disharmony of the group has come to your attention as manager of the unit. When you try to talk to the employee about their behaviour, they put the blame on you. What is your most appropriate communication approach?

a. "I can see that you are upset. I would like to discuss this calmly and rationally."
b. "I am the manager here. Don't point your finger at me."
c. "I thought you and Maria were friends. It is childish to get angry and upset with her."
d. "If I hear of you upsetting the staff one more time, you will have a one day suspension

2. Which of the following are internal variables that impact communication that you can control?

a. Chaotic circumstances and conflict in the workplace
b. Personal body language and demeanor
c. Thoughts and feelings
d. Education, experiences, and role

3. It is inappropriate to send an employee or colleague an email when you

a. are apologizing for your behaviour
b. are accepting an invitation
c. thanking them for a job well done
d. are concerned about them

4. One of your staff nurses is consistently late for the morning shift. Her colleagues are complaining that this unfair – they don't get an extra 15 minute 'break' each day. You approach her and calmly explain the situation and tell her that she will need to organize her time better as the expectation is that she will be on the unit ready to work at 7:30. You also explain that if her late behaviour persists, she will receive a written warning that will go on her personnel file. This communication is an example of

a. Self analysis
b. Setting boundaries
c. Lack of empathy
d. Power differential

5.The message from the short video "Its not about the nail" is that:

a. When you have a headache you are not thinking straight
b. When you have a problem, most people have a solution to solve it
c. When you have a problem, sometimes you just need someone to listen to you.
d. You should keep problems and opinions to yourself.

Answers: 1 A; 2 B; 3 A; 4 B; 5 C

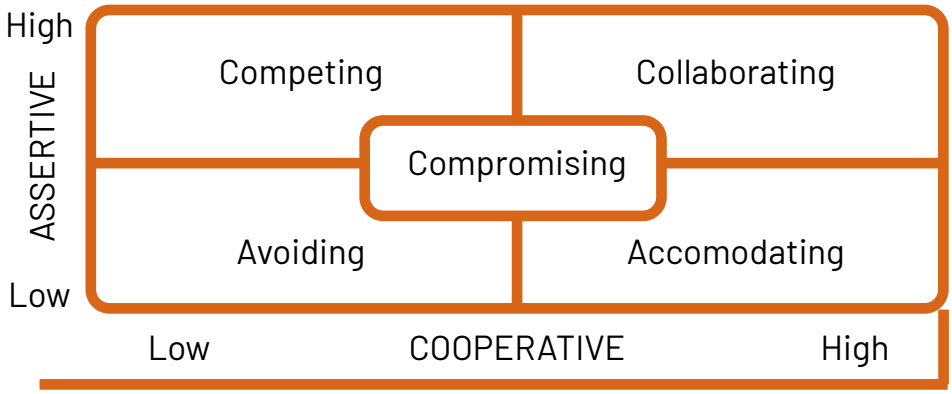
MODULE 6

Managing Conflict

Introduction

Healthcare is relationship-based, and as such, communications can be complex. As you have seen, a lot depends on effective communication, as When organizational culture is fraught with conflict-ridden relationships, employees suffer job dissatisfaction that can lead to reduced productivity, resulting in sub-par patient care and safety issues.

Everyone has the basic need to belong and feel heard. Our language is based on culture and experience. People who are judgmental and critical in their communications can create defensive reactions in others who may feel threatened, unsafe, and insecure. TThese people may react with anger to what author Melanie Sears (2010) in Humanizing Health Care considers violent behaviour.Nurse leaders are responsible for their environment and employees so need tools to address hostility and the possibility of physical or psychological aggression.



Learning Outcomes

- Explain the characteristics of a toxic workplace environment
- Describe causes of conflict and how it escalates
- Explain approaches to conflict management
- Determine how to adapt your approach to conflict
- Discuss the relationship between high stress and mental disorders for nurses
- List strategies necessary to mitigate stress in healthcare workplaces

To start this module, please read: Smiley Wegner (2018). Identifying and Understanding How to Manage Conflict. In Chapter 11 Leadership and Influencing Change in Nursing p. 196 – 212

Workplace Violence

You have read about day-to-day types of organisational conflicts that arise in healthcare settings and appropriate ways to manage these situations. However, underlying socio-cultural-political climates can contribute to toxic environments. This may be characterised by the use of physical force by a person at the workplace against an employee that may cause physical injury. Psychological aggression, for instance in the form of bullying or intimidation, may be based on race, ethnicity, or gender. Violence can be overt: physical or verbal threats of a harmful, financial, or sexual manner, or they can be covert: neglect, humiliation, withholding information, or rudeness (Canadian Nurses Association, nd).

Research indicates that nurses are high risk (>50%) for being recipients of horizontal and vertical violence. Victims experience negative physical and mental health symptoms: depression, anxiety, low self-esteem and isolation, and decreased job satisfaction resulting in absenteeism (CNA, nd.).

Nurse leaders and managers must advocate for employees who lack the ability to resolve conflict on their own. They must communicate zero tolerance for violent behaviors and advocate for honest communication processes grounded in compassion and empathy.

High Stress = Mental Health Disorders

Due to the chaotic nature of the healthcare industry, nurses are regularly exposed to high-stress situations at work. This repeated psychological trauma can have a cumulative effect on nurses' mental health. In research conducted with over 3200 Canadian nurse respondents (CFNU, 2020. Mental disorder symptoms among nurses in Canada), the most frequently reported direct trauma exposures were: physical assault (92.7%); death of an individual after extraordinary efforts were made to save their life (88.9%); death of someone who reminded the nurse of friends or family (86.0%).

Nurses also reported the following daily workplace stressors that were not adequately managed.

The percentages represent nurses who found these issues extremely stressful.

- Institution regularly over capacity 73.2%
- Inadequate staff to adequately cover the unit 49.8%
- Unpredictable staffing and scheduling 45.9%
- Lack of support by nursing administrators 35.0%

- Not enough time to complete all their nursing tasks 35.0%
- Too many non-nursing tasks required, such as clerical work 32.7%
- Having to deal with violent patients 32.0%
- Having to deal with abusive patients 29.7%
- Having to work through breaks 29.6%
- Watching patients suffer 28.4%
- Being held accountable for things over which they have no control 28.2% (CFNU, 2020, p. 43).

Dealing with these daily issues wears down nurses' ability to cope leading to burnout, critical incident stress, post-traumatic stress disorder (PTSD), major depressive disorder, general anxi-ety disorders, panic disorders, and suicidal ideation. As nurses are much more prone to most of these disorders than the general public, it is incumbent for nurse managers and administrators to care for the health of these workers.

Measures that can be implemented for nurses at a local level by managers and administrators:

- Early intervention and support after critical incidences.
- Mental health training for all nurses and enhanced coping strategies.
- Establish policies and protocols to ensure that mental health training programs are ac-cessible and effective.
- Resolve staffing shortages and inappropriate staff mix.
- Ensure workplace violence risk assessments, programs and security measures are in place.
- Reduce the administrative burden on nurses by reducing non-nursing duties. (CFNU 2020, p. 5).

Healthcare funding agencies can implement projects for assessing, providing resources for, ed-ucating, and conducting research on nursing and healthcare environments.

Module 6 takes approximately 2 hours to complete including tests

Read it!

Smiley, F. Leadership guide to conflict and conflict management

Wegner (2018). Identifying and Understanding How to Manage Conflict. In Chapter 11 Leader-ship and Influencing Change in Nursing p. 196 – 212

Article: A hidden truth: Hostility in healthcare

Article: Forgione, P. (May 15, 2020). New patterns of violence against healthcare in the covid-19 pandemic

What is your conflict resolution style?
Conflict Resolution Style

Apply it!

Self-study: Complete the exercises on conflict on pages 212 – 214 in Wegner (2018). Identifying and Understanding How to Manage Conflict. In Chapter 11 Leadership and Influencing Change in Nursing p. 196 – 215.

Test it!

Take the Module 6 multiple choice quiz.

1. The surgeon has fallen behind in his list of elective operations. He is supposed to finish at 15:30, but still has one hernia repair patient left to operate on. He calls the nurse manager into the room and tells her he needs to do this patient as the patient has been NPO all day and is from out of town so should not be cancelled. The manager says that he can go ahead if all the two nurses in the room agree to do overtime to finish the list. One nurse has to go pick up her child from day care, so cannot stay late. The surgeon is really upset and blames her for having to cancel this patient.
This scenario is an example of

a. Data conflict
b. Structural conflict
c. Values conflict
d. Relationship conflict

2. A nurse is a member of an interprofessional health care team. In discussing a patient's needs, the nurse disagrees with a member of another profession. What is the most effective way to manage this kind of interprofessional conflict?

a. Gather with other nurses on the nurse's unit and discuss the views of this other profession-al.
b. Educate the patient on the conflict and support the nurse's findings with a plan of care.
c. Create openness to hear the other's views and explore the nurse's own biases regarding the subject.
d. Ask the patient's physician to make the decision about the best course of action.

3. During the Covid 19 pandemic, Italy reported that nearly 50% of frontline healthcare workers who had made or seen extraordinary, yet futile, efforts to save patients' lives suffered from

a. Post-Traumatic Stress Disorder (PTSD)
b. Insomnia
c. Loss of appetite
d. Drug abuse

4. There is a nurse manager position open for competition in the Outpatient Clinic. Rumor has it that a senior nurse manager from a medical unit is applying for the job. Dr. S., Director of the clinics, does not like working with this nurse. He approaches the Director of Nursing and tells her not to hire this nurse as all the physicians will rebel. The Nursing Director tells the doctor that there is a process in place to choose the right candidate and he has no business threatening her decision with bad behaviour. Dr. S. slams the door as he leaves her office.
This is an example of what kind of

a. Value conflict
b. Intrapersonal conflict
c. Power conflict
d. Economic conflict

5. In the above scenario, the Director of Nursing has chosen what conflict management style?

a. Collaborating
b. Accommodating
c. Avoiding
d. Competing

Answers: 1 B; 2 C; 3 A; 4 C; 5 D

MODULE 7

Teamwork and Interprofessional Healthcare Teams

Introduction

Healthcare reforms and care-delivery initiatives call for primary healthcare, a service philosophy focused on health promotion, identifying populations at risk, prevention of illness, treat-ment, and rehabilitation. Complexities of providing psycho/social/physiological care requires a team-based approach and shared patient responsibility. Interprofessional practice is essential due to the unique skills of each discipline. Overall, teams reduce healthcare costs and improve patient outcomes through.

Lesson Outcomes

- Describe the characteristics of positive healthcare teams.
- Illustrate the need for interprofessional collaboration, communication, and flexible leadership within the healthcare system.
- Explain specific non-technical skills that support interprofessional teams.
- Outline six interprofessional competencies.

Definitions

Multidisciplinary: combining or involving more than one discipline or field of study (Merriam-Webster Dictionary, 2020). Example: Patient management requires a multidisciplinary approach which may include nurses, physicians, nutritionists, psychologists, environmental workers, and administrators.
Interprofessional: occurring between or involving two or more professions or professionals (Merriam-Webster Dictionary, 2020). Example: An interprofessional team consisting of nurses, surgeons and anestheologists work in the operating room.

A Need for Teams

Nurse leaders/managers in today's health care organizations must deal with changing healthcare reimbursements, and governmental regulations. They need to provide managed care across the continuum within shifting social trends such as an aging population, and increased migration. A lot of work completed in organizations today is done through collabora-tive teams that provide the strength, structure, and resiliency to deal with work complexities

and changes. Managers are thus challenged to work collaboratively with practitioners, non-clinical staff, and senior management, patients, and external stakeholders. At times they will serve as a team leader; at other times they will serve as a member, so being capable of both leading and following are essential skills. Understanding the characteristics of teams, and the basic principles for attaining successful outcomes increases the nurse leader's effectiveness.

Nursing Teams

Within the nursing profession, a high degree of specialization exists. There are advance- care nurse practitioners, direct care registered nurses, licensed practical nurses, clinical nurse specialists, nurse educators, nurse midwives, and nurse anesthetists. They work in innumerable specialty areas and care for the patient across a healthcare continuum. Establishing effective nursing teamwork requires expertise in group dynamics, clear communication, and coordina-tion so they accomplish goals interdependently.

Interprofessional Teams

Health care environments are evolving at an unprecedented rate with new specialized knowledge, scientific and technological advances, and redesign of care that requires resolving complex problems or tasks. Health care leaders recognize the importance of interdisciplinary, team-based approaches to address these complexities as high-quality work output and cost control are impossible without communication, collaboration, and teamwork.

Engaging teams in change processes allows for diverse points of view, creativity, innovation, and an enhanced ability to adapt to continuous or sudden change. It is an opportunity for participants with special knowledge and skills to work collectively and cooperatively as part of im-portant processes and decision-making. Healthcare team members who share similar patient care values, ideas, and responsibilities can hone their collective practice through repetitive in-teractions. They become proficient in non-technical skills such as communicating, cooperating, co-ordinating and managing tasks, anticipating situations, reflecting on actions, and evaluating results. This synergy can result in outstanding performance (Clendinneng, 2020; Qureshi & Dhaliwal, 2016).

Another application of interprofessional teams is in direct patient care. Many hospital units rely on high functioning teams to prioritise and provide care, such as in emergency departments, intensive care units, and operating rooms. Interprofessional work teams should have opportunities to learn and train together on communication strategies, shared leadership, situational awareness, mutual trust, and team evaluation. These attributes, combined with the ability of interprofessional teams to work together consistently, helps members develop a shared men-tal model where they become capable of modifying and aligning their personal behaviour based on of their colleagues'

expectations (Clendinneng, 2020).

An example of where teams are important is in healthcare safety. Adverse events are not commonly attributed to poorly performing healthcare professionals but are the result of causal pathway failure in healthcare delivery processes. Interprofessional teams that are proficient in non-technical skills, the cognitive and social skills needed to communicate, coordinate actions, and make decisions on patient safety processes demonstrate fewer adverse outcomes.

Healthcare practitioners in these teams are aware of evolving patient care situations, prioritize tasks in complex environments and assume and alternate the leadership role when appropriate (Clendinneng, 2020). All members are accountable for outcomes.

Characteristics of Interprofessional Teams

Effective interprofessional work teams must be created and managed by leaders who are integral in building trusting, collaborative relationships founded on non-technical skills that help teams and achieve high level results. Such teams share the following characteristics:

- All team members have clear goals.
- They have clarity about each team member's role and contributions, and appreciate generational, cultural, and diversified thinking.
- They practice succinct, open communication with effective decision making and conflict management.
- All members are engaged in cooperative relationships in the workplace.
- Members trust each other and share participative leadership.

As interprofessional collaboration is so essential in healthcare, there are competency frameworks that help members work together. For example the National Interprofessional Competency Framework (2010) outlines six competency domains:

1. interprofessional communication
2. patient/client/family /community-centred care
3. role clarification
4. team functioning
5. collaborative leadership
6. interprofessional conflict resolution

The dynamics of interdisciplinary teams, however, creates some unique challenges. When teams are comprised of professionals who have been educated, socialized, and are used to their unique vocabulary, professional values, and standards and practices, then it may become challenging for them to

work across disciplines. Many professionals are more comfortable functioning independently instead of as part of a team. Lencioni (2006) promoted the idea that to overcome the tendency team members have to function in their own narrow scope (silo thinking), and to avoid common 'turf battles', the team needs to have a pressing, time-constricted goal to focus on.

Without trust, team members may be inclined to protect their established healthcare roles, blame others and be unable to confront and resolve issues. They may lose the opportunity for function and growth by withholding ideas, observations, and questions.

Module 7 takes approximately 2 hours to complete including tests

Read it!

Toye & Wagner (2018). Primary health care: Interprofessional leadership, collaboration and teamwork. In Chapter 6 Leadership and Influencing Change in Nursing p. 110-123

Canadian Interprofessional Health Collaborative. 2010. A National Interprofessional Competency Framework

Optional: An excellent resource for learning about IP Teams and Education: Creating the Health Care Team of the Future: The Toronto Model for Interprofessional Education and Practice

Review: 20 Team Building Questions For Work (That are Non-awkward)

Watch it!

Just a routine operation (13:56)
Ted Talks: How to turn a group of strangers into a team (12:46)
Cultivating collaboration in health care (9:51)

Test it!

Take the Module 7 multiple choice quiz.

1. The Canadian Interprofessional Health Collaborative (CIHC) has four key competencies for interprofessional collaboration. They include role clarification, team functioning, collaborative leadership, and which of the following?

a. Patient-centred care.
b. Quality improvement.
c. Dealing with interprofessional conflict.
d. Reflection.

2. A patient undergoing chemotherapy visits with his interprofessional team once a month. He observes the oncologist encouraging other team members, such as the nurse, the pharmacist, or the social-worker, to take on the lead role during the meetings, on the basis of the patient's concerns and goals. Which interprofessional leadership element is being demonstrated by the oncologist?

a. Inspiring a shared vision.
b. Enabling others to act.
c. Challenging the process.
d. Encouraging the heart.

3. A non-technical or soft skill required by interprofessional teams that is of primary importance for patient safety is:

a. Diagnosis
b. Electing a team leader
c. Communication
d. Debriefing

4. In interprofessional teams, psychological safety refers to members being able to speak their opinion freely without threat.

a. True
b. False

5. New nurse managers may not have formal administrative or leadership orientation, but are expected to be team leaders. Leaders who exhibit high Emotional Intelligence have an ef-fect on:

a. How individuals follow direction and interact with one another
b. How individuals cope in stressful situations.
c. Team relationships
d. All of the above

Answers: 1 C; 2 B; 3 C; 4 A; 5 D

MODULE 8

Equity, Diversity & Inclusion in Healthcare

Introduction

The global movement of people and populations that we are experiencing in the 21st century make it imperative for nurses to move beyond simplistic views of how we perceive our patients and clients. Increased migration and the ability to connect technologically with peoples across the globe makes socio-cultural issues dynamic and fluid as it changes and adapts according to new patterns of social interaction (McGibbon & Mbugua, 2020).

Culture intersects with social constructs such as race, ethnicity, language, class, gender, and visible and invisible disabilities. It is an integration of an individual's values, norms and behaviours based on upbringing, and historical, political, and social constructs and contexts that we learn and adapt throughout our lives, and which we respond to, largely unconsciously, in everyday life.

Healthcare professionals must examine their own culture and beliefs, and ensure that they are respectful of others as differences can all-too-often have the potential to complicate the healthcare practitioner-patient relationship and, henceforth, the provision of health services (Medical Board of Australia 2014). Further, health is impacted by social determinants of health so improving health equity is contextual and complex involving cross-sectoral interventions.

Learning Outcomes

- Describe culture, cultural competence, and cultural safety in nursing.
- Discuss cultural diversity.
- Articulate the generational differences among Veterans, Baby Boomers, Generation X, and Generation Y.
- Explore the issues of workplace diversity in health care organizations for nursing staff, nurse leaders, and patients and families.
- Explain the need cultural humility for LGBTQ2S clients in the healthcare system
- Describe how the nurse leader can manage workplace diversity.

Module 8 takes approximately 2 hours to complete including tests

Read it!

Applegate, 2018. Cultural Humility and LGBTQ Communities in the Healthcare Environment. Chapter 11 in Leadership in Healthcare and Public Health.

Gomez, L. E., & Bernet, P. (2019). Diversity improves performance and outcomes. Journal of the National Medical Association, 111(4), 383-392. doi:http://dx.doi.org.eztest.ocls.ca/10.1016/j.jnma.2019.01.006

Igoe, K. (2022). Approaching Diversity, Equity, and Inclusion Through a Future-Oriented Lens

Ko¨llen, 2015. Diversity Management in the European Health Care Sector: Trends, Challenges, and Opportunities.

Udod & Racine, (2019). Diversity in Health Care Organizations. In Chapter 2. Leadership and Influencing Change in Nursing p.25-46.

How does your country rank in the LGBTQ Rainbow Map?

Watch it! Vignette

Family Counseling and Coming Out (Bisexual identification)(5:00)

Test it!

Take the Module 8 multiple choice quiz.

1.To address gender and diversity issues in nursing, which of the following actions WOULD NOT be appropriate for a unit manager to incorporate?

a. Providing more clinical placements with male nurses for male nursing students.
b. Educate health care employees to embrace diversity based on culture, religion, ethnici-ty, gender, ability, and sexual orientation.
c. Decrease the negative stigma associated with men's working in a nurturing profession.
d. Encouraging white women to enter nursing instead of medicine, because this group in un-derrepresented in nursing.

2. Which of the following statements is an accurate definition of cultural conflicts?

a. Cultural imposition is using others' values as the absolute guides in providing services to patients and interpreting their behaviour.
b. Ethnocentrism is a belief that one's own way of life is inferior to that of others.

c. Stereotypes are generalizations about any particular group that point out unique character-istics.
d. Discrimination is treating people unfairly on the basis of their group membership

3. What characterizes culturally congruent care?
a. It fits the patient's life values, patterns and unique meanings.
b. It is based on meanings of care generated by the nurse and unregulated providers.
c. It is the same as the values of the professional health care system.
d. It is based on the assumption that a person's own way of life as superior to those of other cultures.

4. A nurse manager knows that the unit nurses may work with patients from many different cultural backgrounds. The manager keeps their eyes open for nurses who unfortunately and in-advertently, may impose their own cultural beliefs on patients. Which of the following is an example of a nurse imposing personal perspectives on a patient?
a. Adapting the patient's room to accommodate extra family members who are visiting.
b. Seeking information on gender-congruent care for an Egyptian patient.
c. Encouraging a Syrian woman to decide to take contraceptives without discussing this with her husband.
d. Encouraging family members to assist with the patient's care when it is appropriate for them to do so.

5.The health disparities experienced by LGBT people include infectious and chronic disease, be-havioral health and quality of life issues.
a. True
b. False

Answers: 1 D; 2 D; 3 A; 4 C; 5 A

Nurse Leadership and Management Summary

No matter if you are a novice or seasoned nurse manager, hopefully you have found valuable information in these eight modules that have informed you, challenged you to reflect, and helped move your practice forward.

This is by no means an exhaustive program and there are many more topics to be explored for nurse managers. To that end, there is a reference list of literature used for these modules plus other online open source resources you may chose to explore.

Nurse Leadership and Management Resources

1. American Organization for Nursing Leadership (AONL). https://www.aonl.org/education/overview
2. European Federation of Nurses Associations http://www.efnweb.be/?page_id=802
3. EFN Competency Framework http://www.efnweb.be/wp-content/uploads/EFN-Competency-Framework-19-05-2015.pdf
4. ENDA European Nurse Directors Association https://enda-europe.com/
5. ICN, International Council of Nurses
6. SSN, Sykepleiernes Samarbeid i Norden, Nordic Nurses Association
7. EFNNMA, European Forum of National Nursing and Midwifery Associations
8. ACENDIO, Association for Common European Nursing Diagnoses, Interventions and Outcomes
9. HORATIO, European Association for Psychiatric Nurses
10. PSSN, Nordic Psychiatric Nurses Association
11. IOM, International Organisation for Migration

Final Online Test:

Once you are ready, take the multiple choice / true/false test consisting of 35 questions. You need 26/30 or a 75% pass rate to be successful in this course. You may review the content of this resource and repeat the test if you do not get this grade initially.

1.Which of the following statements is true?
1.Management focuses on tasks, resources, processes, and operations of an organization.
2.Leaders focus on people and relationships, guide and motivate employees to reach their goals.
a.1
b.2
c.1&2
d.Neither 1 nor 2

2.During the Covid 19 pandemic, a tertiary hospital made the decision to halt elective surgery so the ICU would not be overburdened with ventilated surgical patients. Nurses from the OR were deployed to Covid testing units. The closure of the OR allowed the hospital to create more venti-lated beds in the postanesthesia care unit. These decisions allowed the hospital to treat all Covid patients, but negatively impacted the elective surgery waitlist.
What kind of management theory does this scenario demonstrate?
a. Systems theory
b. Chaos theory
c. Complexity theory
d. Authority theory

3.Lucienne is a nurse manager on a acute medical unit. The hospital has budgeted for a total upgrade of IV pumps in the new fiscal year. She wants to involve all nurses on the unit in the decision-making process, and she will make the final decision based on their feed-back. Lucienne is demonstrating what kind of management style?
a. Coaching
b. Democratic
c. Servant
d. Autocratic

4.The management process is a logical, systematic approach based on problem-solving and ef-fective practices. According to MacLeod, which elements are in this process?
a.Communication, marketing, decision-making, responsibility for actions taken
b. Recruiting, staffing, leading productive meetings, budgeting

c.Planning, organizing, staffing, directing, coordinating, reporting, budgeting Staff scheduling, motivating, assessing practices, implementing new practices, evaluating

5.Which of the following factors contribute to the current global nursing shortage?
1. Aging of current nurses in the workforce and their impending retirement
2. Maintaining the status quo in health care delivery systems with high compensation for nurses
3. Decreased number of nursing educational faculty to teach in graduate and post-graduate degrees and lower numbers of students entering nursing as a career.
a. 1 & 2
b. 2 & 3
c. 1 & 3
d. All of the above

6. Nurse M and Nurse S are friends working on different units. They are taking a coffee break together. Nurse M says "Can you believe it? I have a patient, Mrs. H. who's 70 years old and was admitted in respiratory distress. She has Covid 19 and admitted she has been out in public and has not been following the recommended health precautions. Some people deserve what they get! What ethical principle is Nurse M breaching?
a.Autonomy
b.Fidelity
c.Veracity
d.Confidentiality

7. Events like dealing with unplanned community health crises can add to nurses' regular responsibilities. The need to manage normal and extra responsibilities within specific time frames can cause complexity compression. This can in turn lead to
a. resilience
b. moral distress
c. interpersonal conflict
d. team dysfunction

8. A nurse on an acute care unit comes on to the night shift to find there are two sick calls with no replacements. He knows from the outset that he will have to prioritise and that once again, some patients may not receive the prescribed care. This is considered rationing care.
a. True
b. False

9.The process for managerial decision-making occurs in the following order:
a.identify the problem, develop solutions, plan the implementation

b. gather information, figure out a solution, discuss the solution with your employees, implement the solution.
c. identify the problem, gather information, determine the desired outcome, develop solutions, consider consequences of the solutions, make a decision, implement and evaluate the solution
d. brainstorm with the staff to determine the problem, come to a consensus with the staff on a solution, ask the staff to implement and monitor the results

10.Which of the following is NOT a cause for rationed nursing care?
a. Insufficient time
b. Reduced patient acuity
c. Insufficient resources
d. Inadequate staffing

11. What does the creative use of novel ideas and innovations that make a fundamental impact on a system refer to?
a. Transformative change
b. Innovative change
c. Emergent change
d. Planned change

12.According to Lewin the reason for creating awareness of why the current status or situation needs to change helps with
a. Communication
b. Unfreezing people's resistance to necessary change
c. Transitioning people to a new, changed status
d. Solidifying change

13.In September, 2019, around 600 New Yorkers queued up near Apple's Fifth Avenue store to purchase the newly released iPhone 11. Roger's diffusion of innovation theory calls these people
a. Laggards
b. Early majority
c. Innovators
d. Early adopters

14.Managers can reduce resistance to change by:
a. involving staff in planning change
b. Sharing information
c. Surprising staff with a needed change
d. A&B

15.An approach to change that has a process directed by everyone, with self-directed behaviour and using task lists with a 70% adoption rate describes:
a. systematic change
b. transformational change

c. chaotic change
d. nursing process change

16. One of your unit nurses is consistently upsetting her co-workers with mis-directed anger and blame. The finger-pointing and disharmony of the group has come to your attention as manager of the unit. When you try to talk to the employee about their behaviour, they put the blame on you. What is your most appropriate communication approach?
a. "I can see that you are upset. I would like to discuss this calmly and rationally."
b. "I am the manager here. Don't point your finger at me."
c. "I thought you and Maria were friends. It is childish to get angry and upset with her."
d. "If I hear of you upsetting the staff one more time, you will have a one day suspension."

17. Which of the following are internal variables that impact communication that you can control?
a. Chaotic circumstances and conflict in the workplace
b. Personal body language and demeanor
c. Thoughts and feelings
d. Education, experiences, and role

18.It is inappropriate to send an employee or colleague an email when you
a.are apologizing for your behaviour
b.are accepting an invitation
c.thanking them for a job well done
d.are concerned about them

19. One of your staff nurses is consistently late for the morning shift. Her colleagues are complaining that this unfair – they don't get an extra 15 minute 'break' each day. You approach her and calmly explain the situation and tell her that she will need to organize her time better as the expectation is that she will be on the unit ready to work at 7:30. You also explain that if her late behaviour persists, she will receive a written warning that will go on her personnel file. This communication is an example of
a. Self analysis
b. Setting boundaries
c. Lack of empathy
d. Power differential

20.The message from the short video "Its not about the nail" is that:
a. When you have a headache you are not thinking straight
b. When you have a problem, most people have a solution to solve it
c. When you have a problem, sometimes you just need someone to listen to you.
d. You should keep problems and opinions to yourself.

21. The surgeon has fallen behind in his list of elective operations. He is supposed to finish at 15:30, but still has one hernia repair patient left to operate on. He calls the nurse manager into the room and tells her he needs to do this patient as the patient has been NPO all day and is from out of town so should not be cancelled. The manager says that he can go ahead if all the two nurses in the room agree to do overtime to finish the list. One nurse has to go pick up her child from day care, so cannot stay late. The surgeon is really upset and blames her for having to cancel this patient.
This scenario is an example of
a. Data conflict
b.Structural conflict
c.Values conflict
d.Relationship conflict

22. A nurse is a member of an interprofessional health care team. In discussing a patient's needs, the nurse disagrees with a member of another profession. What is the most effective way to manage this kind of interprofessional conflict?
a. Gather with other nurses on the nurse's unit and discuss the views of this other professional.
b. Educate the patient on the conflict and support the nurse's findings with a plan of care.
c. Create openness to hear the other's views and explore the nurse's own biases regarding the subject.
d. Ask the patient's physician to make the decision about the best course of action.

23. During the Covid 19 pandemic, Italy reported that nearly 50% of frontline healthcare workers who had made or seen extraordinary, yet futile, efforts to save patients' lives suffered from
a. Post-Traumatic Stress Disorder (PTSD)
b. Insomnia
c. Loss of appetite
d. Drug abuse

24.There is a nurse manager position open for competition in the Outpatient Clinic. Rumor has it that a senior nurse manager from a medical unit is applying for the job. Dr. S., Director of the clinics, does not like working with this nurse. He approaches the Director of Nursing and tells her not to hire this nurse as all the physicians will rebel. The Nursing Director tells the doctor that there is a process in place to choose the right candidate and he has no business threatening her decision with bad behaviour. Dr. S. slams the door as he leaves her office.
This is an example of what kind of
a. Value conflict
b. Intrapersonal conflict

c. Power conflict
d. Economic conflict

25. In the above scenario, the Director of Nursing has chosen what conflict management style?
a. Collaborating
b. Accommodating
c. Avoiding
d. Competing

26. The Canadian Interprofessional Health Collaborative (CIHC) has four key competencies for inter-professional collaboration. They include role clarification, team functioning, collaborative leader-ship, and which of the following?
a.Patient-centred care.
b.Quality improvement.
c.Dealing with interprofessional conflict.
d.Reflection.

27. A patient undergoing chemotherapy visits with his interprofessional team once a month. He observes the oncologist encouraging other team members, such as the nurse, the pharmacist, or the social-worker, to take on the lead role during the meetings, on the basis of the patient's concerns and goals. Which interprofessional leadership element is being demonstrated by the oncologist?
a. Inspiring a shared vision.
b.Enabling others to act.
c. Challenging the process.
d.Encouraging the heart.

28. A non-technical or soft skill required by interprofessional teams that is of primary importance for patient safety is:
a. Diagnosis
b. Electing a team leader
c. Communication
d. Debriefing

29. In interprofessional teams, psychological safety refers to members being able to speak their opinion freely without threat.
a. True
b. False

30. New nurse managers may not have formal administrative or leadership orientation, but are expected to be team leaders. Leaders who exhibit high Emotional Intelligence have an effect on:
a. How individuals follow direction and interact with one another

b.How individuals cope in stressful situations.
c.Team relationships
d.All of the above

31. To address gender and diversity issues in nursing, which of the following actions WOULD NOT be appropriate for a unit manager to incorporate?
a. Providing more clinical placements with male nurses for male nursing students.
b. Educate health care employees to embrace diversity based on culture, religion, ethnicity, gender, ability, and sexual orientation.
c. Decrease the negative stigma associated with men's working in a nurturing profession.
d. Encouraging white women to enter nursing instead of medicine, because this group in underrepresented in nursing.

32. Which of the following statements is an accurate definition of cultural conflicts?
a. Cultural imposition is using others' values as the absolute guides in providing services to patients and interpreting their behaviour.
b. Ethnocentrism is a belief that one's own way of life is inferior to that of others.
c. Stereotypes are generalizations about any particular group that point out unique characteristics.
d.Discrimination is treating people unfairly on the basis of their group membership

33. What characterizes culturally congruent care?
a.It fits the patient's life values, patterns and unique meanings.
b.It is based on meanings of care generated by the nurse and unregulated providers.
c.It is the same as the values of the professional health care system.
d.It is based on the assumption that a person's own way of life as superior to those of other cultures.

34. A nurse manager knows that the unit nurses may work with patients from many different cultural backgrounds. The manager keeps their eyes open for nurses who unfortunately and inadvertently, may impose their own cultural beliefs on patients. Which of the following is an example of a nurse imposing personal perspectives on a patient?
a. Adapting the patient's room to accommodate extra family members who are visiting.
b. Seeking information on gender-congruent care for an Egyptian patient.
c. Encouraging a Syrian woman to decide to take contraceptives without discussing this with her husband.
d. Encouraging family members to assist with the patient's care when it is appropriate for them to do so.

35.The health disparities experienced by LGBT people include infectious and chronic disease, be-havioral health and quality of life issues.
a. True
b. False

Answers

1.C
2.A
3. B
4. C
5. C
6. D
7. B
8. A
9. C
10. B
11.A
12. B
13. D
14.D
15.C
16. A
17.B
18. A
19.B
20. C
21. B
22.C
23.A
24. C
25. D
26. C
27. B
28. C
29. A
30. D
31. D
32. D
33.A
34. C
35.A

References

Agency for Healthcare Research and Quality. [2016]. *TeamSTEPPS: Strategies and tools to enhance performance and patient safety*. Rockville, MD: Author. Retrieved from http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html

Aiken, L. et al. (2014). Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *Lancet*, (383), 1824–30. http://dx.doi.org/10.1016/ S0140-6736(13)62631-8

Altman, M. (2020). Facing moral distress during the COVID-19 crisis. [Blog]. *Critical Care Nurses Association.* Facing Moral Distress During the COVID-19 Crisis - AACN

Applegate, 2018. Cultural humility and LGBTQ communities in the healthcare environment. In *Leadership in Healthcare and Public Health.*

Bittner, A. (2019). Mentoring millennials for nursing leadership. *Nursing*, 49(10), 53-56. doi: 10.1097/01.NURSE.0000580656.81188.ee

Canadian Interprofessional Health Collaborative. (2010). *National interprofessional competency framework.* https://phabc.org/wp-content/uploads/2015/07/CIHC-National-Interprofessional-Competency-Framework.pdf

Claessens, B., van Eerde, W., Rutte, C., & Roe, R. (2007). A review of the time management literature. *Personnel Review*, 36(2), 255-276. https://doi.org/10.1108/00483480710726136

Clendinneng, D. (2020). Case study research on nurses' perceptions of various educational strategies for learning non-technical skills. *ORNAC Journal*, March, 2020. 1-29.

Davis, K. & Gardner, W. (2012). *Charisma under crisis revisited: Presidential leadership, perceived leader effectiveness, and contextual influences. The Leadership Quarterly*, 23(5), 918–933. DOI:10.1016/j.leaqua.2012.06.001

DeMoura. A., Hayashida, KY., Bernardes, A., Zanetti A., Gabriel, CS. (2019). Charismatic leadership among nursing professionals: An integrative review. *Revista Brasileria Enfermgamem*, 72(1), 315-20. [Thematic Issue: Work and Management in Nursing]. DOI: http://dx.doi.org/ 10.1590/0034-7167-2017-0743

Eisenbeiss, S. A., van Knippenberg, D., & Boerner, S. (2008). Transformational leadership and team innovation: integrating team climate principles. *The Journal of applied psychology*, 93(6), 1438–1446. https://doi.org/10.1037/a0012716

European Cooperation in Science and Technology (2020). *Promoting patient safety through minimising missed nursing care.* guidance-nursing-managers-rancare-web-optimized-1.pdf (enda-europe.com)

EU Horizon (2020). interopEHRate, electronic health records. Home - InteropEHRate

EU (2016). D*isruptive innovation: Considerations for health and healthcare in Europe.* 012_disruptive_innovation_en_0.pdf (europa.eu)

Forgione, P. (2020). New patterns of violence against healthcare in the covid-19 pandemic. BMJ Opinion, May, 2020. New patterns of violence against healthcare in the covid-19 pandemic - The BMJ

Goleman, D. (2000). Leadership that gets results. *Harvard Business Review,* Mar-Apr. 2000). Leadership That Gets Results (hbr.org)

Gomez, L. E., & Bernet, P. (2019). Diversity improves performance and outcomes. *Journal of the National Medical Association*, 111(4), 383-392. doi:http://dx.doi.org.eztest.ocls.ca/10.1016/j.jnma.2019.01.006

Goodman, B. (2019). Leadership and Management in Nursing

Hairr, DC., Salisbury, H., Johannsson, M., & Redfern-Vance, N. (2014). Nurse staffing and the relationship to job satisfaction and retention. *Nurse Economist*, 32(3), 142-147.

Hersey, Blanchard & Johnson. (2013). *Management of organizational behavior: Leading human resources*. 10th ed. Pearson Education.

Hospital News (nd). A hidden truth: Hostility in healthcare. A hidden truth: Hostility in healthcare - Hospital News

Huber, D. (2018). *Leadership nursing care management*. Elsevier.

Igoe, K. (2022). Approaching diversity, equity, and inclusion through a future-oriented lens. *Harvard T.H. Chan School of Public Health.* Approaching Diversity, Equity, and Inclusion Through a Future-Oriented Lens | Executive and Continuing Professional Education | Harvard T.H. Chan School of Public Health

Joseph, M. & Huber, D. (2015). Clinical leadership development and education for nurses: Prospects and opportunities. *Journal of Healthcare Leadership*, 7 55–64. https://doi.org/10.2147/JHL.S68071

Kalisch BJ, Xie B. Errors of Omission: Missed Nursing Care. *West J Nurs Res.* 2014;36(7):875-890. doi:10.1177/0193945914531859

Ko¨llen, T. (2015). Diversity management in the European Health Care Sector: Trends, challeng-es, and opportunities. In: *Challenges and opportunities in health care management*, 27-45 .

Longenecker, C. & Longenecker, P. (2014). Why hospital improvement efforts fail: A view from the front line. *Journal of healthcare management / American College of Healthcare Executives*, 59(2),147-57. DOI:10.1097/00115514-201403000-00010

Maxwell, E. (2017) Good leadership in nursing: What is the most effective approach? *Nursing Times* [online],113(8), 18-21. Good leadership in nursing: what is the most effective approach? | Nursing Times

Morales, M. (2020). Characteristics and examples of transformational leadership in nursing. [Blog] Relias. Examples & Qualities of Transformational Leadership in Nursing | Relias

Nelson, S., Tassone, M., Hodges, B. (2014). Creating the health care team of the future: The Toronto Model for Interprofessional Education and Practice. https://digitalcommons.ilr.cornell.edu/books

Pines, E. W., Rauschhuber, M. L., Norgan, G. H., Cook, J. D., Canchola, L., Richardson, C., & Jones, M. E. (2012). Stress resiliency, psychological empowerment and conflict management styles among baccalaureate nursing students. *Journal of advanced nursing*, 68(7), 1482–1493. https://doi.org/10.1111/j.1365-2648.2011.05875.x

Qureshi, Y.A., & Dhaliwal, K. (2016). High performance team - Necessary in a healthcare set-ting. *Bangladesh Journal of Medical Science*, 15, 10-14. DOI:10.3329/BJMS.V15I1.27138

Sasso, L., Bagnasco, A., Bianchi, M., Bressan, V., & Carnevale, F. (2016). Moral distress in undergraduate nursing students: A systematic review. *Nursing ethics*, 23(5), 523–534. https://doi.org/10.1177/0969733015574926

Sears, M. (2010). Humanizing health care: Creating cultures of compassion with non-violent communication. PuddleDancer Press.

Shanley, C. (2007). Management of change for nurses: Lessons from the discipline of organiza-tional studies. *Journal of Nursing Management*, 15(5), 538-46.
doi: 10.1111/j.1365-2834.2007.00722.x.

Sherman, R. (2012). The need to be a servant leader. *Emerging RN Leader*. Emerging Nurse Leader - A leadership development blog (emergingrnleader.com)

Solman, A. (2017). Nursing leadership challenges and opportunities. *Journal of Nursing Management*, 25(6), 405-406. Nursing leadership challenges and opportunities - Solman - 2017 - Journal of Nursing Management - Wiley Online Library

Smiley Wegner (2018). Identifying and understanding how to manage conflict. In *Leadership and influencing change in nursing* p. 196 – 212.

Smith, M. A. (2011). Are you a transformational leader?. *Nursing Management*, 42(9), 44-50.
Are you a transformational leader? *Nursing Management*, 42(9), 44-50.

Smiley, F. *Leadership guide to conflict and conflict management*. Press Books. Leadership Guide to Conflict and Conflict Management – Leadership in Healthcare and Public Health (pressbooks.pub)

Solman, A. (2017). Nursing leadership challenges and opportunities. *Journal of Nursing Management*, 25(6), 405-406. https://onlinelibrary.wiley.com/doi/full/10.1111/jonm.12507

Stelnicki, A., Carleton, N. Reichert, C. (2020). Mental disorder symptoms among nurses in Canada. *Canadian Federation of Nurses Unions*. OSI REPORT.indd (fcsii.ca)

Takala, T. (2004). Charismatic leadership and power. *Journal of Problems and Perspectives in Management*, 3(3), 45-55.

Talley, & Thorgrimson, 2019

The Medical Futurist. (April, 2020). Life after Covid 19. What will change?
Toye & Wagner (2018). Primary health care: Interprofessional leadership, collaboration and teamwork. In Chapter 6 Leadership and Influencing Change in Nursing p. 110-123

Udod & Racine, (2019). Diversity in Health Care Organizations. In Chapter 2. Leadership and Influencing Change in Nursing p.25-46.

Vertino, K., (September 30, 2014) Effective Interpersonal Communication: A Practical Guide to Improve Your Life . *The Online Journal of Issues in Nursing*, 19(3), Manuscript 1. DOI: 10.3912/OJIN.Vol19No03Man01.

Vestal, 2013

Wagner. J. (2018). *Leadership and influencing change in nursing*. Press Books. Leadership and Influencing Change in Nursing – Simple Book Publishing (pressbooks.pub)

Wegner (2018). Identifying and understanding how to manage conflict. In *Leadership and Influencing Change in Nursing*, 196 – 212

Wong, C. A., Cummings, G. G., & Ducharme, L. (2013). The relationship between nursing leadership and patient outcomes: a systematic review update. *Journal of Nursing Management*, 21(5), 709-724.

Zastock, D., & Holly, C. (2010). Retaining nurse managers. American Nurse Today, 5(12)., 5. Zastock D Holly C 2010 Retaining nurse managers American Nurse Today 5 12 5 | Course Hero

RESOURCE 3

Digital Videos to Support Online Learning

In our Erasmus+ funded research grant entitled **Teaching Online: Video Initiatives in Digital Education and Mobile Learning (TOVID)**, we developed the three video series listed below in collaboration with partners from Universities in Finland, Malta, and Slovenia aas well as Learning Works, a Further and Higher Education Institution, Mater Dei Hospital and the Post Graduate Medical Training Program at the University of Malta.

The Get Ready Video Series – three 5-7 minute videos,

The Get Started Video Series – four 5-7 minute videos; and

The Get Online Teaching Tips Video Series - nineteen 2-4 minute videos.

Our purpose in developing these very brief videos is to support educators wishing or needing to make the transition from traditional face-to-face teaching to teaching effectively online. The videos can be viewed on a phone, tablet or computer. The videos provide a rationale for teaching online, ideas and strategies for effectively designing, delivering and evaluating digital education, and Teaching Tips from colleagues who share their best practices on how to effectively teach, save time and build an online learning community.

The Get Ready Video Series

Get Ready is intended to address the portion of educators who are still resistant to digital education. For early users, this video series may seem redundant as it addresses topics they may have dealt with a decade or more ago. But in reality, particularly before COVID, in some countries such as Malta, Italy and Slovenia, we found there was still considerable resistance to transitioning to teaching online. It wasn't uncommon to hear educators suggest eLearning was inferior and express concerns that students would cheat if not attending face-to-face sessions. Educators expressed conviction about the quality of their face-to-face teaching even though learners admitted to being distracted, texting, completing assignments, shopping or browsing the internet during face-to-face lectures.The set of three approximately 5-minutes Get Ready videos covers topics such as; what is eLearning, when is eLearning appropriate, what are the benefits and shortcomings of eLearning; and the rationale for teaching online. The expectation was that this digital education series would convince sceptical educators of the merits of eLearning and motivate them to continue to view the second TOVID video series, Get Started. The titles of the Get Ready series are the following:

What is Online Learning and When is it Appropriate?

Benefits and Shortcomings of Online Learning

Online Learning in Healthcare Industry

The Get Started Video Series

The Get Started video series consists of four approximately 5-minute videos that summarize topics highlighted in the Designing, Delivering and Evaluating Effective Online Learning Resource and the European Union Digital Education Quality Standard Framework (**http://project-digit.European Union/index.php/resources/**) such as:

- Designing Content for effective eLearning
- Delivering Effective eLearning
- Structure
- Policies Supporting the Online Learner
- Importance of Community to eLearning
- Evaluating Online Learners and Learning Events

The Get Started digital video series contains links to practical resources to help improve pedagogies, digital literacy, assessment methods, and the learning experience of learners in a digital age. The series was designed to motivate learners to take first steps in teaching online and to enrol in additional digital education training. The videos are conveniently available by clicking on the links below.

First Steps in Planning Effective Online Learning

Delivering Effective Online Learning

Supporting Learners in an Online Environment

Evaluating Online Learning

The third TOVID digital video series entitled **Get Online Teaching Tips** consists of 19 approximately 2-minute videos sharing online teaching tips by educators who have transitioned to teaching online. Topics are related to organizing content, saving time, and engaging learners. Educators wrote their scripts in a standardized template, so all videos have a consistent look and feel. The purpose of the Teaching Tips video digital series is to create a learning community among educators and provide continuous support for digital education allowing countries, universities, and the private and public industry to learn with and from one another. The Get Teaching Tips video series provided an opportunity for academic staff and healthcare educators to continue to learn and improve the quality of their online teaching.

The videos are conveniently available by clicking on the links below.

Making the Theoretical Tangible, Applicable and Tacit

Efficient and Effective Chunking – A Read it, Discuss it and Apply it Model

Long Live Formative Assessment

RoadMaps: A Game Changer To Effective Online Learning

Connecting with Learners Through Weekly Announcements

Podcasts in Education

Group Activity in Zoom

Quizzing to Improve Exam Results

How to Engage Learners in Social Interaction and Opinion Exchange via Padlet?

How to Visually Enhance your Presentation for Free?

Using Road Maps to Facilitate Learner Engagement in An Online Study Unit

SeeSaw in Teacher Education

Activate on a Distance

Team Teaching On-line for a Diverse group – or How we Survived our First On-line Resource

Keep on Offering Virtual Office Hours to Learners

Be Creative with Canvas

'Connect'!

Using Kahoot to Boost Learners' Participation in the Classroom

Teaching Employability Skills in a Collaborative Online Environment like MS Teams

We hope you will watch all the videos, but understand you are busy and may only be able to watch a few. Enjoy!

Reference

Bengs, A. MacDonald, C.J., Cassar, M., Yeratziotis, A., Geratziotis, G., Prosen,M., Cilia, J., Granberg, A., Papadopoulos, G.A., Ličen S., (2023) *Teaching Online: Digital Initiatives in Digital Education and Mobile Learning*, INTED2023 Proceedings, pp. 2794-2804. doi: 10.21125/inted.2023.0771 ISBN: 978-84-09-49026-4; ISSN: 2340-1079

RESOURCE 4

European Union Digital Education Quality Standard Framework and Companion Evaluation Toolkit

How can this Framework help make my online teaching more effective

Purpose of the Framework

The framework and toolkit are proposed as quality standards to guide the design, delivery and evaluation of effective digital education across the European Union and the wider international context. This theoretical framework, presents all the variables and sub-variables you need to consider when designing and teaching effective online learning in one convenient location. The framework is an interactive tool that can be used not only to guide the design of effective eLearning experiences, but also to analyse your own teaching and see what areas you may need or want to improve. The framework and toolkit are to be used in a flexible and adaptive manner, and are applicable to education and training institutions, industries, and audiences regardless of where you are in the online learning adoption process.

Why use a Framework?

The Covid-19 pandemic positioned digital education in a new light. The need for educational institutions to develop strategies, standards and establish quality assurance across digital education became even more evident than before. With educational and training institutions under pressure to offer digital education options, determining an appropriate theoretical framework was a logical first step. A curriculum framework acts as a credible, quality standard and guide for designing, delivering and evaluating effective education programs resulting in superior digital education experience. Frameworks identify, explain, predict, and demonstrate complex relationships between concepts, key and sub variables, and best practices of digital educational events.

What exactly is the Framework?

The interactive framework resulted from best practices found in existing frameworks and models in the literature from across the globe coupled with the experience of digital education researchers from 5 European Union countries participating in an ERASMUS+ project. The framework comprises definitions of the variables and sub-variables to facilitate context and understanding. Moreover, the visualisation of the framework presents the relationship among the different variables. This feature of the framework is believed to be a unique contribution to the world of digital education.

The framework is not intended to be a manual on how to design, deliver and evaluate online learning, but the variables and sub-variables must be considered when designing, delivering and evaluating effective digital education. The use of this adaptive framework and toolkit across different contexts and countries should translate towards enhanced quality assurance together with favourable increased harmonisation and transferability of digital education initiatives.

Demonstration (Open Framework)

Based on an extensive literature review, it became clear that effective digital education requires thoughtful and skillful design of the following variables: content, delivery, support, community and structure. All variables and sub-variables in this framework are considered essential to effective digital education design, delivery and evaluation. It is recognized that these variables and sub-variables are not isolated entities - there is overlap and redundancy between and among them. It is also realized that the descriptions for many of these variables and sub-variables could go under various terms or titles. It is the 'concept' and the collective application of these variables and sub-variables that result in effective digital education practice. If you click on any variable or subvariable in the framework the definition will emerge. For example, click on the variable 'Content' and the definition will emerge. Similarly, click on the sub-variable 'Authentic', and the definition emerges.

The connectivity design was selected from several proposed options because it was considered novel as it diverted from the wi-fi logo. A positive point was that the connectivity design had not been seen in other frameworks which generally featured a triangle, puzzle or an onion-layered figure.

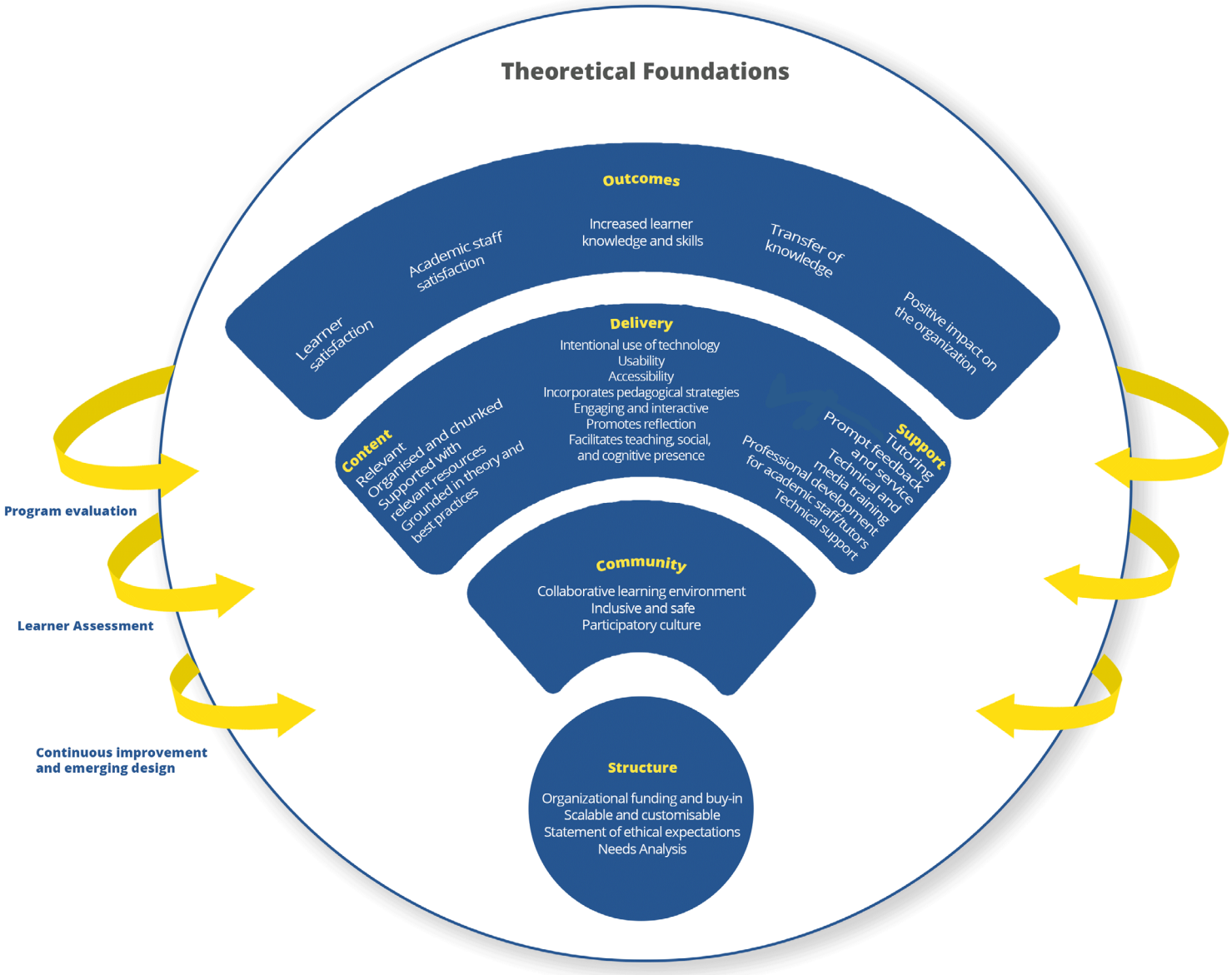
The framework is interactive.
Start by clicking on the tutorial button in the top right hand corner of the framework. The tutorial explains what the framework is and how to use it in 6 languages. Listen to the tutorial in whatever language you prefer.
Click on any word in the framework diagram, and the definition of the concept will emerge.
Click on the Evaluation Toolkit button in the box to your right below and formative and summative surveys and sample interview questions you can use to assess your learning event will emerge.

Click here for the video tutorial

Click here to see the Evaluation Toolkit

Erasmus+

European Union Digital Education Quality Standard Framework and Companion Evaluation Toolkit



European Union Digital Education Quality Standard Framework Variables and Sub-Variables – Defined

Effective digital education requires the thoughtful and skilful design of the following variables: content, delivery, support, community and structure. Carefully implemented learner assessment and program evaluation are essential to the success of a digital education program. Commitment to continuous improvement through emerging design ensures that digital education continues to meet evolving learning needs and leverage of advancing technology.

Effective digital education leads to learner and educator satisfaction, increased learner knowledge and skills, the transfer of knowledge, and a positive impact on the organisation.

Theoretical Foundations

Constructivism acknowledges that one's learning is an active, ongoing process. Learning is subjective because individuals' cognitive processes differ. They perceive their environment and experiences differently and link their perspective to prior knowledge. As such, learning is unique, fluid and contextual.

Social constructivism takes learning to the collective level where people learn with and from others by interacting and collaborating in social contexts, or communities of practice or inquiry. Connectivism is a digital learning theory applicable to networked, online environments. When people connect to and participate in an online community, they interact dynamically with others using rich multimedia resources. This environment provides new ways for people to make connections between ideas and concepts, and the capacity to create knowledge by incorporating current information.

Outcomes

Outcomes resulting from effective digital education include increased learner and educator satisfaction, increased learner knowledge and skills, transfer of knowledge, and a positive impact on the organization.

Learner satisfaction

Digital education provides education and training solutions that correspond to learner and community interests and labour market needs. Learners appreciate the convenience, flexibility, and access to resources that enhanced digital educational opportunities provide. Digital education removes physical barriers and travel limitations, empowering learners who live in remote or rural areas to participate in higher education study units or take classes in subjects that are not offered in their locations.

Educator satisfaction

Educators benefit from the flexibility and convenience that digital education provides both themselves and their learners. Educators and training professionals who integrate digital technologies into their teaching gain satisfaction as a result of increasing the learning opportunities, satisfaction and success of learners in a digital world.

Increased learner knowledge and skills

Relevant, authentic content ensures that learners attain intended learning outcomes. Digital education that includes complementary core competencies to match work and study skills, and provides versatile study paths ultimately leads to securing and maintaining better employment.

Transfer of knowledge

Carefully planned learning activities such as scenarios, problem-solving case studies, simulations, reflection, discussions and collaborative group activities enable learners to seamlessly transfer new knowledge to real-world applications.

Positive impact on the organization

Reusable, adaptable and scalable teaching resources can lead to innovation and change within organizations. Organizations can leverage effective digital education to become competitive, relevant, and innovative and enable educators and trainers to attract learners, compete internationally and meet the needs of learners in the 21st century.

Content

The content of an effective digital education program provides all the information learners need to attain the required learning outcomes. Effective content is relevant, organised and chunked, supported by relevant resources, and grounded in theory and best practices.

Relevant

Each digital education session begins with a statement of three to five learning outcomes that are the objective of the session. Designers then select content to align with and lead to these learning outcomes. Relevant learning event content faithfully reflects problems and issues that arise in real-world situations. Learners engage in activities that present the same type of cognitive challenges they will encounter in an applied environment. This enables the acquisition of information, concepts, and skills that are meaningful, comprehensive and relevant to the present or future workplace.

Organised and chunked

Content is organized into succinct segments or 'chunks' that present a comprehensive overview of the information needed to attain the learning outcomes. Content progresses logically, builds on previous information, and provides learners with a sense of pacing and completion. It is presented objectively, through unbiased language, matching the learner's level of understanding. Content is organised into clear sections such as introduction, information presentation, exercises, interaction, conclusion and take-home messages. The estimated amount of time required to complete each section is noted, tracked and adjusted as needed.

Supported with relevant resources

Additional readings and resources support the content overview to ensure that topics are covered in appropriate breadth and depth. Academic articles, videos, and websites provide background information and alternative presentation options that address varying learning styles and needs. The resources encourage learners to reflect on their own thinking and learning processes. Additional resources can encourage social negotiation and critical thinking, which

can help generate insight and promote the elaboration of concepts and ideas.

Grounded in theory and best practices

Theory and empirical research provide the basis for effective digital education content. Educators refer to their personal and professional experience, pedagogical best practices and adult learning theory to create activities that facilitate the transfer of theory into practice. Educators also take advantage of learners' personal and professional experience, so they not only learn from the educator, but with and from each other.

Educators from accredited learning organizations share core competencies and partner with subject matter experts from private industry to design learning solutions that are closely aligned with the skills required in the workplace.

Delivery

Effective digital education is carefully designed using intentionally selected technology to ensure the usability and accessibility of the learning platform. Pedagogical strategies leverage technology to ensure that the learning experience is engaging and interactive, provides opportunities for learner reflection, and facilitates teacher, social, and cognitive presence.

Intentional use of technology

Selective and relevant use of technology supports teaching and learning and results in educational solutions that assist with meeting future competence needs and ensure smooth, flexible, and convenient digital study paths for learners.

Usability

An effective digital education platform is intuitive to navigate. Information is continually updated to ensure there are no dead ends or outdated links. Careful organisation minimises the number of steps or "clicks". Embedded objects such as shareware, images, audio, and video clips are easy to download. If external software is needed to view or use content, links and instructions are provided. Bandwidth should be considered when including large files (e.g., images, video, and animations). Careful use of colour, size and type of font, and background contributes to usability. European Union legislation is addressed and adhered to (legislation: https://eur- lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016L2102..

Accessibility

An effective digital education platform is technologically robust, easy to navigate and freely available to all learners and educator. A flexible and customised design based on analyses of how different learners may potentially use the content incorporates a multitude of technological and pedagogical features that ensure the content is accessible to all learners and learning styles. It allows participation at any time and any place, including for those with limited access to the internet.

Content is often and ideally augmented by links and resources on the internet; therefore, delivery must be designed to ensure these external resources are accessible to all users.

Incorporates pedagogical strategies

Learning experiences are appropriately designed and facilitated by knowledgeable educators using evidence-based teaching practices. Educators incorporate a variety of instructional strategies and activities and apply a range of modes of learning to accommodate diverse learning styles, and to maximise and leverage the experience of each learner. Educators use pedagogic frameworks specific to digital education to guide the design, delivery and evaluation of their learning sessions. Educators or tutors are available within the learning environment to

enable the comprehension of information and encourage self-directed learning. They solicit feedback, engage learners in problem-solving experiences, and provide positive reinforcement.

Pedagogical considerations include providing learners with a clear roadmap of expectations and learning outcomes, with a focus on appropriate teaching and learning strategies and determining the type and amount of content and appropriate level of instructor support. Pedagogical strategies also guide the development of formative and summative assessment.

Engaging and interactive

Effective digital education promotes and facilitates interaction with the content, as well as among learners and with the educator. Engaging activities stimulate learners' interest and understanding and facilitate the transfer of knowledge and skills into practice. Peer-helping activities enrich the learning experience for adult learners, enabling them to assume personal responsibility and connect past learning experience to the current one.

Promotes reflection

In effective digital education, tutors encourage learners to reflect upon concepts and ideas learned by responding to thought-provoking questions that stimulate discussion and critical thinking. Content and design are leveraged to promote independent reflection, as well as in in response to other learners.

Facilitates teaching, social, and cognitive presence

Effective digital education implements strategies to encourage participation and engagement by enabling learners to experience teaching presence. Teaching presence includes the perception that the tutor is available, reading posts, responding quickly to questions, and providing timely, relevant, and constructive feedback.

Effective digital education is designed to promote a sense of social presence or community engagement among learners and with their educator. Having the opportunity to get to know and trust both the tutor and other learners, particularly at the beginning of a digital education study unit, enables learners to identify with the community and to communicate purposefully in a trusting environment.

Effective digital education encourages the learner to be cognitively present in the learning environment by incorporating activities specifically designed to challenge them to analyse, think critically and reflect. Educators ask thought-provoking questions and design problem-solving scenarios that require the learner to apply their new knowledge or skills to a work-related or practical solution.

Support

An effective digital education environment requires ongoing support from educators, prompt feedback on assignments, and responses to emails and questions within interactive forums. Learners are introduced to the digital education platform to ensure they can engage with it effectively. Educators and tutors are trained to deliver and evaluate the program. Continuous technical and media support is available for both learners and staff.

Tutoring

Success in the digital education environment is directly related to how present and engaged learners perceive their educator to be within the virtual classroom. Learning, engagement, and enjoyment of the experience is enhanced when learners feel a responsiveness equal or superior to face-to-face instruction. Educators communicate clear expectations and instructions, identify opportunities, challenges and agency, provide timely constructive feedback, announcements and updates, and create a learning community where learners feel

comfortable and supported. Educators address small problems before they become significant, thereby helping learners avoid stress, frustration and attrition.

Prompt feedback and service

Within a digital education environment, educators or tutors provide feedback on assignments and respond to email queries in a timely manner. To facilitate the ability of learners to access support from educators and peers promptly and conveniently, the learning environment also provides services such as interactive question and answer forums and online office hours. Class announcements, study unit notes, and assignments are readily available.

Technical and media training

Prior to the start of a digital education session, learners receive a thorough introduction to the learning environment, so they can comfortably access and participate in the digital education platform.

Professional development for educator/tutors

Educators/tutors are trained to design, deliver and evaluate effective digital education. The training provides the basic knowledge to facilitate a digital education learning session while enabling staff to experience what it is like to be a learner in the environment. Educators also have access to professional development through their organizations to keep up to date with digital education best practices. Training and professional development that is certified by an accreditation body can help ensure quality and stimulate participation, facilitate comprehension of information and encourage self-directed learning. They solicit feedback, engage learners in problem-solving experiences, and provide positive reinforcement.

Technical support

Administrative and technical support are freely available to both learners and educators to help them use and access the technical systems supporting the digital learning environment. Step-by-step instructional videos can be used to walk learners through downloading software or performing technical tasks. Face-to-face or video conferencing sessions can help learners who have challenges interacting with the technology.

Community

Effective and user-friendly digital education incorporates community-building strategies to establish a collaborative learning environment that is inclusive and safe. Educators encourage a culture of commitment to thoughtful reflection, open resources, experimentation, risk taking, assessment, and analysis.

Collaborative learning environment

The digital education environment enables learners to work together to explore a significant question or create a meaningful project. Learning events and programs enable knowledge to evolve through discussion, reflection, and collaboration. Learners have the opportunity to take the initiative and responsibility to listen, question, and think critically within the community of fellow learners. Learners are empowered by learning with, from and about one another. Educators model the sense of community by supporting and providing constructive feedback to learners and encourage learners to do the same.

Inclusive and safe

Effective digital education establishes a learning community where learners feel comfortable and have a sense of belonging. Success, engagement, satisfaction, and learning are dependent on the support and sense of identity that comes from developing relationships within the learning environment and being a valued member of a community. Ethical principles guide

educators as they work to establish an inclusive and safe learning environment. These principles include learner confidentiality, learner development, pedagogical competence, an appropriate and supportive approach to sensitive topics, respect for learners and colleagues, and valid, fair assessment. The educator also explains and enforces principles of internet etiquette. Options are provided to support varied learner needs and abilities.

Participatory culture

To encourage learners to actively and safely participate in the collaborative learning environment, a set of policies and expectations are established regarding etiquette and protocols for reflection and discourse within the community. This culture of participation can be facilitated by having learners create profiles that are available to other learners, so they get to know each other. A café-style forum where learners can socialise within the context of the learning environment can stimulate participation within the community.

Structure

Key structural components provide scaffolding on which effective digital education is built and can continue to deliver value to the host organization and to learners. Developing and maintaining effective digital education solutions that are scalable for varying and future needs of the organization and are customisable for different classes or learners requires organizational funding and buy-in. Clear statements of ethical and academic guidelines for assignments, postings, plagiarism, and participation can help ensure fair, consistent and high-quality standards within the learning environment.

Organizational funding and buy-in

The ability to create and deliver effective digital education depends on funding and buy-in from the organization planning to implement it. Developing a fully realized, robust, and scalable digital learning platform requires coordinating input from educators, instructional designers, software developers, videographers, and graphic designers. Delivery of successful digital education programs depends on ongoing, multi-faceted support including administrative assistance, training for educator, academic help for learners, as well as technology and media support for all participants.

Scalable and customisable

Effectively designed digital education can be scaled up or down according to class or staff requirements. It is easily adaptable for changing class or learner needs and can be delivered by several tutors for many resource offerings.

Statement of ethical expectations

A clear statement of ethical expectations ensures that tutors and learners are aware of their ethical responsibilities when participating in digital education. This includes policies regarding confidentiality, attendance, participation, and consequences for cheating and plagiarism. It also communicates the expectations around demonstrating respect for other learners and educators.

Learner Assessment

Assessment is integrated into the pedagogical strategies and meshes with the overall learning design. Assessment activities that encourage dialogue, collaborative activities, and problem-solving can be more effective than traditional tests. Clear guidelines about how learners should submit completed assignments, due dates, evaluation criteria, and modes for feedback prepares learners for the workload.

Program evaluation

Program evaluation is a systematic assessment of the learning event content and delivery based on feedback solicited from learners. Educators conduct brief formative assessments at regular intervals throughout delivery of the learning event. Formative assessments ask learners what is working and what is not working for them in the study unit. The anonymous feedback enables staff to understand the progress and needs of learners and address minor issues before they become significant. A summative evaluation administered at the end of each study unit assesses the overall study unit to address quality standards related to content, delivery, support structure, community and outcomes. Consistent program evaluation provides quality assurance safeguards and ensures that best practices and cutting-edge knowledge outcomes remain robust and equal or superior to traditional face- to-face learning.

Continuous improvement and emerging design

Educators and designers of effective digital education continually assess learning events and sessions and, when possible, implement changes to improve the quality of the learning event in situ or for the next iteration. Updating content and design on an ongoing basis ensures that digital education continues to address evolving learning requirements and technological advances.

*All variables and sub-variables in this framework are considered essential to effective digital education design, delivery and evaluation. It is recognized that these variables and sub-variables are not isolated entities—there is overlap and redundancy between and among them. It is also realized that the descriptions for many of these variables and sub- variables could go under various terms or titles.

Table 1: Digital Education Variables and Sub-Variables

Structure	Delivery	Content	Community	Support	Outcomes
Scalability - resource can be taught many times, the economy of scale justifies the time and effort needed to design.	Usability - information on the site is kept up-to-date, organized and easy to navigate with no dead ends or stale links.	Content is relevant and authentic.	A collaborative and healthy learning environment.	Free convenient professional development is provided to faculty to support them in transitioning to teaching online.	Increased learner satisfaction regarding options and quality of teaching and learning.
Motivation - buy in from administration and faculty. Provide solutions to the barriers preventing some educators from embracing technology to enhance teaching.	Accessibility - A variety of learning activities incorporated to address various learning styles.	Content is grounded in theory and best practices.	The learning community is comfortable, inclusive, and safe.	Prompt feedback - timely, thoughtful and relevant feedback provided on assignments, and in response to postings and emails.	Increase faculty satisfaction regarding teaching options and flexibility.
Ethical responsibilities - adhere to copyright compliance fair use, plagiarism and accessibility standards.	Evidence of Teacher, Cognitive and Social presence.	Content is professionally presented, organized and chunked in meaningful segments, which progress logically building on previous information.	Learners cooperate by interacting and supporting one another.	Facilitators available for tutoring and support.	Increased knowledge and skills. Opportunities to apply new knowledge in practical situations.
Institutional funding and support provided.	Pedagogical strategies chosen to support the achievement of outcomes and competencies.	Content is supported with relevant resources and additional readings. Instructional materials and resources conveniently provided and accessible online.	Learners are empowered by learning with and from one another.	Teachers are responsive to learner needs and concerns.	Increased use and effectiveness of technology in teaching.
Virtual platform selected considering both the accessibility and usability of the hardware and software.	Activities require learners to reflect and think critically.		Learners are challenged with responsibilities in the learning process.	Technical support is available and issues promptly addressed.	Increased institutional impact, perception of quality and delivery, and international competitiveness in the digital era.
Collaboratively designed blended and online study units and resources with partnering European Unionropean Union universities.	Activities are engaging and interactive.		Learners are engaged in the learning process.	Basic technical and media training for learners to increase digital comfort and fluency in accessing and using the virtual platform and creating digital products (e.g. videos).	
	Evidence-based teaching practices and research informed teaching practices.				

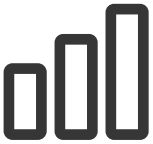
Evaluation

A variety of formative and summative assessment strategies are implemented to ensure fair and consistent learner assessment and attainment of the learning objectives.

Ongoing program evaluation/audit is conducted to facilitate continual resource/study unit improvement.

Companion Evaluation Tools

A companion evaluation toolkit consisting of a formative, quantitative survey, 'temperature check', a summative quantitative survey, and a follow-up qualitative interview protocol to assess programs using the framework. The instruments can be accessed by clicking on the word Toolkit in the right upper corner of the framework figure.



Temperature Check is the name given to a brief quantitative Likert scale online survey including two quantitative open-ended questions soliciting information on the European Union Digital Education Quality Standard Framework variables. The anonymous temperature check takes learners approximately 5 minutes to complete. The purpose of the temperature check is to obtain feedback early in the resource so that any minor concerns can be addressed before they become major issues.

The brief **summative qualitative Likert scale online survey** including quantitative open-ended questions also solicits information on the European Union Digital Education Quality Standard Framework variables. The anonymous summative survey requires learners approximately 10 minutes to complete. The purpose of the summative survey is to obtain feedback at the end of the resource so that any necessary changes and improvements can be made in the next iteration of the resource.

The **interview protocol** provides sample open-ended questions that could be used to solicit detailed follow-up data and triangulate information obtained from the temperature check and summative survey.

Click here to read a detailed description about designing the framework and toolkit

In Conclusion

The framework was designed by taking some of the best ideas and practices from all existing digital education frameworks and models in the literature combined with the teaching tips and lessons learned from experienced educators in five countries who were early adopters and pioneers in eLearning. The framework is intended to assist you when designing, effective digital learning experiences. Refer to it to identify all the things you need to consider when designing your online events. You can also refer to the framework to identify strengths and shortcomings in your study units, courses, modules, or sessions and determine what you may want to keep and continue, drop or eliminate, or add and enhance.

Reference

MacDonald, CJ; Backhaus, I., Yeratziotis, A., Vanezi, E., Clendinning, D.; Seriola, L., Häkkinen, S; Cassar, M.; Mettouris, C.; Papadopoulos, G. (2021). *European Union digital education quality standard framework and companion evaluation toolkit. Open Learning: The Journal of Open and Distance Learning and eLearning*. https://www.tandfonline.com/doi/full/10.1080/02680513.2021.1936476