



## **Answer Key**

For Foundational Curriculum **Unit Activities, Exercises and Quizzes:** Clusters 1-2/Modules 1, 2 and 3



#### **Unit 1 Review Exercises**



- Exercise 1: Explain the difference between health and healthcare <u>Health is the state of the human body, its systems, and condition; also expressed as a presence or absence of illness or injury, whereas healthcare is the maintenance or improvement of health via the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments.</u>
- Exercise 2: Explain the difference between eHealth and health informatics <u>eHealth is healthcare practice</u> <u>supported by electronic processes and information and communication technology; whereas health informatics is literally, the intersection of information and health; also, a term used to describe the multidisciplinary field that uses eHealth/health IT to improve healthcare.</u>



### Unit 1 Review Exercises (cont'd)



- Exercise 3: What are SOAP and HPIP? <u>SOAP and HPIP are both types of formats for an outpatient EHR</u>
- Exercise 4: What are the differences between an EHR and an EMR, if any? In Europe (and formerly in the US), EMR is the standard term used to refer to hospital generated electronic records (deriving from paper-based medical records and their associated departments). In many areas throughout Europe and globally, the term EHR is mainly used to refer to physician-, cloud-based or patient-generated electronic records.



#### **Unit 1 Exam**



- 1. "The multidisciplinary field that uses eHealth/health IT to improve healthcare" describes which of the following terms?
  - a. health
  - b. healthcare technology
  - c. healthcare
  - d. <u>informatics</u>
- 2. eHealth is the intersection of which two fields?
  - a. Healthcare and information communications technology
  - b. Health and health information technology
  - c. Communications and health informatics
  - d. Electronics and communications





- 3. Which of the following is <u>not</u> an eHealth component?
  - a. Clinical information systems
  - b. Data analytics
  - c. <u>Immunology</u>
  - d. Patient engagement
- The major components of an EHR include all of the following, except:
  - a. Patient health documentation (such as history, physical examination data, etc.)
  - Order entry (often called computerized provider order entry, or CPOE)
  - c. Clinical decision support (CDS)
  - d. Isolated Structural Analysis (ISA)





- 5. Which of the following statements is true about the SOAP record?
  - a. The objective data is equivalent to the history
  - b. The objective data is equivalent to the physical examination
  - The impression includes diagnoses and a treatment plan
  - d. The assessment includes diagnoses and a treatment plan





### **Unit 2 Review Exercises**

Use the HITComp tool to identify some of the 250 different types of workers who use eHealth in their jobs

- http://hitcomp.org
- Part 1: Find types of workers related to:
  - 1. administration example: <u>administrative assistant</u>
  - 2. research/biomedicine example: <u>clinical researcher</u>
  - 3. patient care role example: <u>sleep physiologist</u>
- Part 2: Use the HITComp tool to find the description for the role "phlebotomist"
  - 4. What is a phlebotomist in Italian? <u>flebotomo</u>
  - 5. In what service category is phlebotomist? <u>Ancillary</u>
  - 6. What role type is phlebotomist? <u>Operational-Technical</u>



#### **Unit 2 Exam**



- 1. What does HIM stand for in regards to eHealth?
  - a. Healthcare Informatics Maintenance
  - b. <u>Health Information Management</u>
  - c. Healthcare Information Maintenance
  - d. Health Identification Management
- 2. A nursing assistant would be categorized into which of the following eHealth domains?
  - a. Research/Biomedicine
  - b. Direct Patient Care
  - c. Security
  - d. Administration
- 3. Fill in the blank: All eHealth workers need to have at least \_\_\_\_\_\_ skills.
  - a. Baseline
  - b. Intermediate
  - c. Advanced
  - d. Basic





- 4. Which of the following is an example of a healthcare provider?
  - a. Clinician
  - b. Direct care provider
  - c. Therapist
  - d. All of the above
- 5. A hospital lawyer would be categorized into which of the following eHealth domains?
  - a. Research/Biomedicine
  - b. Direct Patient Care
  - c. Administration
  - d. Security



#### **Unit 3 Review Exercises**



# State whether the following care settings would likely be acute inpatient (admitted), acute outpatient (emergency room), or non-acute settings (clinic or office):

- 1. Construction worker with nail in foot <u>Acute outpatient (emergency room)</u>
- 2. Pregnant woman with regular visits to her obstetrician *Non-acute*
- 3. Young man with sudden aneurysm (burst blood vessel in brain) <u>Acute inpatient (admitted)</u>
- 4. Elderly man in nursing home scheduled for heart surgery <u>Acute</u> <u>inpatient</u>
- 5. Athlete with injured knee who needs physical therapy *Non-acute*
- 6. Baby with cough *Non-acute*
- 7. Pregnant woman in labor <u>Acute inpatient (admitted)</u>
- 8. Young girl with psoriasis (chronic skin condition) *Non-acute*

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#### **Unit 3 Exam**



- 1. An acute care setting would include which of the following locations:
  - a. Doctor's office
  - b. Outpatient surgery clinic
  - c. Inpatient medical-surgery unit
  - d. Physician's laboratory
- 2. A non-acute care setting would include which of the following locations:
  - a. Emergency room
  - b. Hospital radiology department
  - c. Intensive care unit
  - d. <u>Day surgery clinic</u>





- 3. Which health care setting overlaps with Direct Patient Care and Engineering/ ICT/IS?
  - a. Information Technology
  - b. Research/Biomedicine
  - c. <u>Informatics</u>

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- d. Administration
- 4. Healthcare systems aid in coordination of care. Which one of the following do healthcare systems <u>not</u> provide or contribute to?
  - a. Good health in populations
  - b. Robust algorithms for business intelligence across all industries
  - Balancing the levels of actual care provided with the expectations of the populations they serve
  - d. A mechanism for continuity of care for a patient/consumer throughout all episodes





- 5. Which of the following statements about benchmarking is <u>false</u>?
  - a. Benchmarks include quality metrics and KPIs
  - b. Benchmarks include direct patient care and informatics
  - Benchmarking is the process of evaluating subjects by comparing them with an established standard
  - d. Benchmarking is often part of data analytics and quality measurement

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#### **Unit 4 Review Exercise**



- 1. Produce a short workflow mapping of the following process <u>(See next page for diagram):</u>
  - 1. The process begins
  - 2. The patient arrives to the medical-surgical unit
  - 3. Physician orders medication for patient
  - 4. Nurse gets a worklist notifying him that patient needs medication
  - Nurse asks patient's name and birthdate to validate the patient is correct
  - 6. Nurse asks patient if she has allergies
  - 7. <u>Important: If yes, he does not administer medication</u>
    - a. The allergy is noted in the chart
    - b. A new medication is requested
  - 8. If no, he administers the medication
    - a. The process is complete
- 2. Is there a critical step in the above mapping exercise?
  - a. <u>Yes Step 7</u>



#### **Unit 4 Review Exercise**



The process begins









The patient arrives to the medical-surgical unit

Physician orders medication for patient

Nurse gets a worklist notifying him that patient needs medication

Nurse asks patient's name and birthdate to validate the patient is correct

Nurse asks patient's name the patient if she has allergies



The allergy is noted in the chart.

A new medication is requested.



He does not administer the medication



He administers the medication

No

The process is complete



#### **Unit 4 Exam**



- 1. Which of the following statements defines "clinical process"?
  - a. Deploying and optimizing information systems and technology
  - b. Magnifying complex manual workflows
  - c. Mapping nursing and physician work flows
  - d. <u>The combined activities undertaken by medical staff at the different</u> <u>areas of expertise and specialization</u>
- 2. Which of the following statements about provider workflows is false?
  - a. EHRs always make complex workflows easier
  - b. Clinical practice involves many specific ways in which work flows
  - c. Patient workflows are very important to integrating EHRs
  - d. Electronic health records can both simplify and intensify complex manual workflows





- 3. Which of the following questions would help determine a workflow for medication administration?
  - a. In which city is the organization located?
  - b. Who is the patient's next of kin?
  - c. When will the patient's barcode armband be scanned for medication cross-checking?
  - d. What mode of payment did the patient select at registration?
- 4. Which of the following activities are <u>not</u> part of an ambulatory workflow?
  - a. Registering a patient
  - b. <u>Admitting a patient</u>
  - c. Scheduling a patient
  - d. Rooming a patient (putting the patient in a room)





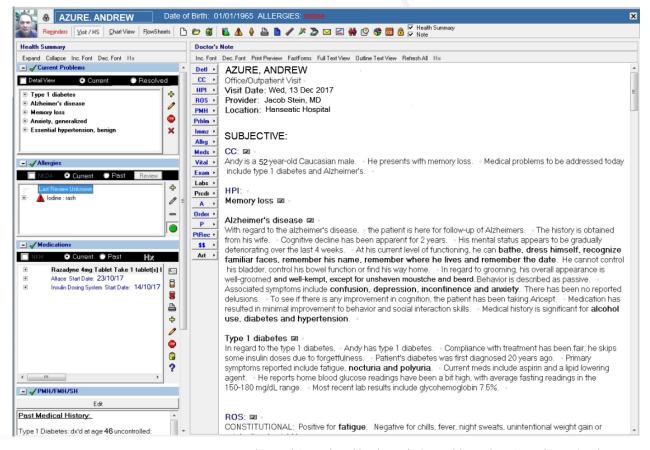
- 5. Which of the following activities are usually part of an emergency department workflow?
  - a. Performing surgery
  - b. Interdisciplinary care planning and discharge summary
  - c. Transfer from the ICU to the medicine-surgical unit
  - d. <u>Determining acuity and triaging the patient</u>



### **Unit Review Exercise/Activity**



 On the diagram below, indicate which data is structured and which data is unstructured:



Current Problems
(diagnoses):
✓ <u>Structured</u>
Unstructured
Allergies:
✓ <u>Structured</u>
Unstructured
Medications:
✓ <u>Structured</u>
Unstructured
Past Medical History:
Structured
✓ <u>Unstructured</u>
Subjective:
☐ Structured

Unstructured



#### **Unit Exam**



- 1. The basic six hospital reports include all of the following except:
  - a. History and Physical Examination
  - b. Radiology Report
  - c. <u>Incident Report</u>
  - d. Pathology Report
- 2. Which of the following statements is true about clinical documentation?
  - a. Documentation demonstrates the clinician's accountability
  - b. Documentation includes only information from clinicians but would not include information from orderlies, researchers, coders or chaplains
  - c. Documentation includes primarily second-hand information
  - d. Documentation has its basis in unfounded conclusions and personal judgements





- 3. Which of the following statements best describes patient data as a form of documentation?
  - a. Data that has been aggregated from individual patients
  - b. <u>Data that is obtained from the patient, from family or friends, from health records, or from the clinician's own observations</u>
  - c. Information available from informal sources, such as the organizational knowledge of staff in the clinic or hospital
  - d. Conclusions about health that are generalizable to many persons
- 4. Which of the following statements is true about documentation?
  - a. Late entries are mandatory and are required to be completed based on memory or best guess
  - b. Late entries can be made even when the clinician cannot accurately recall the care provided or the event
  - c. Changes can be made to other clinicians' documentation when needed
  - d. <u>Changes or additions should be clearly marked as such and should not</u> obscure or delete any previously recorded entry or data





- 5. Which of the following is a typical example of unstructured data?
  - a. Laboratory data
  - b. History of the Present Illness
  - c. Electrocardiogram (ECG) results
  - d. ICD diagnoses



### **Unit Review Exercise/Activity**



 On the following graphic, name which of the following data elements could be used to confirm a patient's identity:

AZURE, ANDREW Date of Birth: 01/01/1965 ALLERGIES: Indine Male: Age 52 Bed: 11-A	×
Reminders Visit / HS Chart View FlowSheets 🕒 🗁 🍪 🛍 🥼 🔓 🖿 🖋 🔊 🖂 🥰 😲 😍 🚾 🙃 🗸 Health Summary	
Name: ☑ Yes □ No	
Date of Birth: ☑ Yes □ No	
Allergies: ☐ Yes ☑ No	
3	
Gender: ☑ Yes ☐ No	
Age: ☑ Yes □ No	
Bed location: ☐ Yes ☑ No	

Photo: ✓ Yes ☐ No





- 1. Which of the following processes is <u>not</u> part of activating a patient?
  - a. Opening up the patient's record for documenting on it
  - b. Performing a two-part validation of the patient using data elements
  - c. Signing on to the PACS system
  - d. Assuring you have the correct patient displayed on the screen
- 2. Which of the following is <u>not</u> one of the "golden rules" for documenting?
  - a. <u>Document Timely, Adequately, and Accurately</u>
  - b. Document Objectively and Factually
  - c. Use Unapproved Abbreviations Only When Time is Short
  - d. Ensure Date, Time, and Signature is Entered for All Record Entries





- 3. What should you do if you need to correct an error you discover you have previously made when documenting on a patient?
  - a. Go back into the record and delete the data as soon as possible
  - b. <u>Amend or add an addendum to the documentation per your organization's protocols</u>
  - c. Print out a copy; cross out the data and then scan the revised document back into the EHR
  - d. It is not possible to correct errors when documenting on a patient; just ignore it
- 4. Which of the following is true about signatures in documentation?
  - a. Documents never need co-signatures
  - b. Medical students can usually sign documentation without a co-signer
  - c. You must call to investigate why a document is stalled in a worklist queue
  - d. <u>Care protocols may require review or co-signing before a document can</u> move forward in a worklist queue



### **Unit Review Exercise/Activity**



- Locate three examples of telehealth technologies available in your area
  - If you cannot find examples in your area, use the internet to locate technologies available in other areas

- Sample Answer:
  - In Germany, MyRehab, Doc Cirrus, Avizia



#### **Unit Exam**



- 1. "A short suggestion or informational message, sometimes interactive and/or offering further action options, and often integrated with clinical decision support rules" defines a(n):
  - a. Prompt
  - b. Template
  - c. Macro
  - d. Algorithm
- 2. A combination of paper and electronic health record defines which of the following?
  - a. A mixed case health record
  - b. A hybrid health record
  - c. A clinical decision support system
  - d. A SOAP record





- 3. Which of the following statements might be found on a "normal" review of systems?
  - a. The patient is alert and oriented x3.
  - b. The heart has a regular rate and rhythm.
  - c. Cranial nerves II through XII are grossly intact.
  - d. No eye pain. No complaints of blurred vision.
- 4. Which of the following is <u>not</u> an example of a telehealth application?
  - Off-site referral specialist consultation through monitors with transmission of PACS images
  - b. Remote patient monitoring devices
  - c. <u>PACS images from the Emergency Room viewed within the Radiology</u> Information System
  - d. Uploading video to help render a diagnosis





- 5. Which of the following would typically be part of an organization's downtime procedure?
  - a. Paper forms are available for a maximum of four hours during a downtime
  - b. Paper forms used during the downtime can be scanned back into the EHR as unstructured data when downtime is concluded
  - c. Downtime procedures apply to only scheduled downtimes, but not to those due to power failure, or natural or man-made disasters
  - d. <u>Paper forms are available to replace key EHR functions during</u>
    <u>downtimes, such as order entry, medications administration and</u>
    documentation



### **Unit Review Exercise/Activity**



- 1. What is the medical term that means disease of the liver? <a href="hepatopathy">hepatopathy</a>
- Using the term from #1 above, combine it with another root word to form a medical term that means disease of the liver and spleen. <u>hepatosplenomegaly</u>
- 3. What is the medical term for surgical repair of a right side groin hernia? <u>right lateral inguinal</u> <u>herniorrhaphy</u>
- 4. What does thoracocentesis mean? <u>puncture of</u> the lung to remove fluid



#### **Unit Exam**



- 1. All medical terms must have which of the following word parts?
  - a. Prefix
  - b. Root
  - c. Combining vowel
  - d. Suffix
- 2. In the medical term "chemotherapeutic", "therap-" is called a:
  - a. Prefix
  - b. Combining vowel
  - c. <u>Combining word</u>
  - d. Suffix





- 3. Which of the following statements about combining words is <u>false</u>?
  - Using a combining word to combine roots together makes it easier to pronounce long terms
  - b. Combining words do not always have to use an "o" as the combining vowel
  - c. You can use a combining word or vowel to join a prefix and a suffix
  - d. You should use a combining vowel to join two root words together when one ends in and the other begins in a consonant
- 4. Which of the following statements is true?
  - a. When writing word roots, we include the word root followed by a slash and then the combining vowel
  - b. If the suffix begins with a vowel, use a combining vowel
  - c. Use combining vowels between two prefixes
  - d. You cannot use an "i" as a combining vowel





- 5. Using your cumulative knowledge of medical terms and word parts, what is the definition of the word "heminephrectomy"?
  - a. Puncture of half of the kidney
  - b. Plastic surgery of the kidney
  - c. Incision into the liver
  - d. Removal of part of the kidney



### **Unit Review Exercises/Activities**



- 1. Are the lumbar vertebrae superior or inferior to the coccyx?
- 2. In which region is the heart contained?
- 3. In which extremities are the humerus located?
- 4. Where are the gastrocnemius muscles?
  - a. When lying in the recumbent dorsal position, do these muscles touch the examining table?
- 5. Which view of a chest x-ray would show a front to back view of all the ribs and spine, an anterior-posterior view, or a lateral view?
  - a. Is this view taken on the sagittal or frontal plane?
- 6. Is the wrist located at the distal or proximal end of the radius?
- 7. What is the largest organ?
- 8. What does the abbreviation b.i.d. stand for?

#### **Answers:**

- 1. superior
- 2. torso/thorax
- 3. superior extremities (arms)
- 4. <u>inferior extremities (lower legs)</u>
  - *a. <u>no</u>*
- 5. <u>anterior-posterior view</u>
  - a. <u>frontal plane</u>
- 6. <u>distal end</u>
- 7. <u>skin</u>
- 8. <u>twice a day</u>



#### **Unit Exam**



- 1. Which of the following terms means the same as posterior?
  - a. dorsal
  - b. top
  - c. front
  - d. midline
- 2. Which of the following statements is true?
  - a. The lateral side of the abdomen is located near the umbilicus
  - b. The patella lies in the midline of the superior extremity
  - c. The anterior side of your body is also its frontal or ventral side
  - d. A large superficial cut would be on the interior of the body





- 3. On which plane or view of the MRI would you see a profile (side view) of the nose?
  - a. Frontal plane or view
  - b. Transverse plane or view
  - c. Sagittal plane or view
  - d. Parasagittal plane or view



- a. cervicis, oris, mandible and mentis
- b. mamma/mammary glands, abdomen, umbilicus and pelvis
- c. brachium, antecubitus, carpus and palma
- d. crus, tarsus, pes and phalanges







- 5. "Comprises the mechanical and chemical processes that provide nutrients, and eliminates waste from the body" describes which body system:
  - a. Cardiac
  - b. Endocrine
  - c. Exocrine
  - d. Excretory
- 6. Which of the following organs are located in the thorax?
  - a. <u>the kidneys</u>
  - b. the sensory organs
  - c. the cerebrum
  - d. the integument





- 7. Phalanges are found in which of the body regions:
  - a. In the thorax
  - b. In both the superior and inferior extremities
  - c. Only in the superior extremities
  - d. Only in the inferior extremities
- 8. Which of the following organs are located in the thorax?
  - a. the kidneys
  - b. the sensory organs
  - c. the cerebrum
  - d. the integument





- 9. The quadriceps and hamstrings are located inferior to which bones:
  - a. the patella
  - b. the humerus, ulna and radius
  - c. the femur, tibia and fibula
  - d. the metatarsals
- 10. Which of the following abbreviations stands for "every other day"?
  - a. b.i.d.
  - b. q.d.
  - c. q.h.s.
  - d. q.o.d.





#### **Unit Review Exercise/Activity**

- Explain the difference between business process design and redesign. Why are both terms important?
- 2. What are the seven steps of the BPR cycle?
- 3. What are the six BPM change mechanisms?
- 4. Which BPM change mechanisms overlap with steps of the BRP cycle?

#### **Answers:**

1. Business process design is taking a business process and mapping that process. The business processes in healthcare are often visualized as a flowchart of sequences of activities with interweaving decision points, or as a process matrix of a sequence of activities with relevant rules based on data in the process. Business process redesign or re-engineering focuses on the analysis and redesign of workflows and business processes within an organization, typically utilizing information systems and technology to transform the workflows and business processes. Both business process design and redesign are very important in that BPR cannot occur without first having BPD with mapping of the clinical and/or business workflows





- Explain the difference between business process design and redesign. Why are both terms important?
- 2. What are the seven steps of the BPR cycle?
- 3. What are the six BPM change mechanisms?
- 4. Which BPM change mechanisms overlap with steps of the BRP cycle?

Answers (cont'd):

- 2. The seven steps of the BPR cycle are: evaluate status, identify processes, analyze and map processes, improve and redesign processes, incorporate information systems and technology, test processes, implement
- 3. <u>The six BPM change mechanisms are: discovery,</u> modeling, analysis, measurement, improvement, and optimization
- 4. analysis and improvement



#### **Unit Exam**



- 1. Which of the following activities is the best example of a business process within healthcare?
  - a. ordering a medication in the EHR
  - b. assessing and diagnosing a patient
  - c. monitoring vital signs and entering them into the record
  - d. scheduling and registering a patient for a chest x-ray
- 2. Which of the following would be a decision point in a business process design diagram?
  - a. Patient is scheduled for a chest x-ray
  - b. Patient arrives to the radiology department
  - c. <u>Is the patient pregnant?</u>
  - d. Patient is sent to primary care provider for pregnancy test





- 3. The current state components of the business process redesign cycle include which of the following:
  - a. analyze and map processes
  - b. improve and redesign processes
  - c. incorporate information systems and technology
  - d. implement
- 4. A discipline that uses various methods to discover, model, analyze, measure, improve and optimize business process describes what concept:
  - a. clinical pathways
  - b. <u>business process management</u>
  - c. evidence-based medicine
  - d. clinical protocols





- 5. In a healthcare organizational structure, the information and communications technology department typically reports to which executive:
  - a. chief nursing officer (CNO)
  - b. <u>chief information officer (CIO)</u>
  - c. chief medical officer (CMO)
  - d. chief financial officer (CFO)
- 6. Statements that are informed by a systematic review of evidence, an assessment of the benefits and harms of alternative care options, and include recommendations that are intended to optimize patient care, best describe which of the following decision making tools:
  - a. computerized alerts
  - b. condition-specific order sets
  - c. <u>clinical practice guidelines</u>
  - d. clinical protocols





#### **Unit Review Exercise/Activity**

- Identify the three technology-supported interdisciplinary care coordination tools that are used during provider rounds <u>Computerized rounding and sign-off/sign-out tools</u>, <u>Multidisciplinary rounds and Status and progress notes</u>
- Name the three informatics areas that are means to achieve interdisciplinary care and continuity of care goals <u>clinical decision</u> <u>support, personal health records, and telehealth/telemedicine</u>



#### **Unit Exam**



- 1. "The practice of caring for patients (and their families) in ways that are meaningful and valuable to the individual patient" describes what concept:
  - a. telehealth
  - b. continuity of care
  - c. patient-centered care
  - d. care coordination
- 2. Patient access to care as a part of care coordination would include which of the following technology or information system components:
  - a. Ensuring behavioral professionals have eHealth and digital skills
  - b. <u>Transmission of hospital discharge summary reports directly to the</u> primary care physician at the time of discharge
  - c. Integration of clinical pathway reports into the care process
  - d. Displaying patient preferences in the EHR when the patient record is open





- 3. Which of the following dimensions of care would help ensure that patients are involved in decision-making, recognizing they are individuals with their own unique values?
  - a. Emotional support
  - b. Physical comfort
  - c. Integration of care
  - d. Patient preferences
- 4. Which of the following statements describe bedside monitoring devices?
  - a. The information accessed includes information about medications, vital signs, and laboratory test results
  - b. They are electronic tools that are developed to facilitate communication and information sharing by providing summary information and explicitly requiring providers to identify goals for each patient
  - c. They are used to obtain information directly through device interfaces and can pull in vital signs from physiological monitors, ventilator settings and respiratory status
  - Bedside monitoring devices are used to document and track discharge planning activities





- 5. The eHealth/informatics area that supports care coordination in the manner that would enable a physician to track infection rates on discharged patients is which of the following:
  - a. <u>measurement</u>
  - b. clinical decision support
  - c. telehealth
  - d. personal health records