Objective 3.02 Understand health informatics

Essential Questions

- What are the roles of health informatics professionals?
- What kind of information do health informatics personnel manage?
- How is health information communicated?

I Health Informatics

A. Health informatics professionals treat technology as a tool that helps patients and healthcare professionals

B. It is a career area that combines
   a. Technology - the use of computers in healthcare
   b. Healthcare science - the applied science dealing with the application of science, technology, engineering, or mathematics, to the delivery of healthcare.
   c. Communications - the act of transferring information through speech, the written word, or more subtle, non-verbal ways
   d. Administration - the performance or management of business operations, maybe including important decision making.
   e. Business Management - the activities associated with running a company, such as controlling, leading, monitoring, organizing, and planning.

C. There are two areas of health informatics, they include:
   a. Management - the organizational process that includes strategic planning, setting; objectives, managing resources, deploying the human and financial assets
   b. Technical – having knowledge of the mechanical and scientific use of technology in relation to its use in healthcare

D. Management duties include:
   a. Design and develop information systems needed for medical records and insurance
   b. Develop policies and procedures for handling medical information to ensure patient privacy and security
   c. Manage budget – being fiscally responsible with the monetary resources of your facility
   d. Train users – to make sure all designated employees receive education regarding the use of associated technology

E. Technical duties include:
   a. Design and develop information systems that operate between healthcare facilities
   b. Integrate all medical records and insurance requirements into one system
   c. Develop information systems that follow policies and procedures for handling information to ensure patient privacy and security

F. Health informatics professionals perform the following
   a. Analyze patient information
   b. Abstract and code patient information
   c. Document information
d. Communicate information

e. Manage health information systems

II Analyze information/data
A. Determine information required, this depends on the project involved
B. Collect required information
C. Evaluate the information
D. Report and distribute information within the legal guidelines

III Abstract and code patient information
E. Abstracting refers to collecting information from a medical record
F. Coding refers to the assignment of a code to each of the patient’s diagnoses and procedures for the purpose of reimbursement
G. Collect information to record charges and reimbursements
H. Use appropriate medical terminology
I. Apply information for regulatory and legal purposes
J. Coding refers to the assignment of a code to each of the patient’s diagnoses and procedures for the purpose of reimbursement; codes include the following:

a. Diagnosis codes - are used to group and identify diseases, disorders, symptoms, human response patterns, and medical signs, and are used to measure morbidity and mortality – (http://en.wikipedia.org/wiki/Diagnosis_codes)
   i. World Health Organization
      1. International Classification of Diseases (ICD) - is the standard diagnostic tool for epidemiology, health management and clinical purposes.
      2. Codes aid in tracing the presence of disease
   ii. US Department of Health and Human Services
      1. International Classification of Diseases Clinical Modification (ICD-CM)
      2. Used in diagnosis coding
   iii. ICD-9-CM Coding
      1. Used to code the diagnosis
      2. Must identify the main term in the diagnosis; example: Essential Hypertension
      3. The code book contains three volumes
         a. Volume 1 – Tabular list of diseases
         b. Volume 2 – Index to diseases
         c. Volume 3 – Index to procedures and tabular list of procedures
      4. Physicians’ offices and outpatient facilities use only Volumes 1 & 2 when coding
      5. Main Term in Diagnosis – is the condition causing the patient to be sick
         a. Example: Urinary Tract Infection
b. Infection is the main term in this diagnosis

c. Urinary Tract is the location of the infection and would not be the first place to look in the index (Volume 2)

6. Basic steps in ICD-9-CM Coding
   a. Locate the main term in the alphabetic index (Volume 1)
   b. Review the subterms
   c. Follow cross-references
   d. Verify the code found in the alphabetic index in the Tabular List (Volume 1)
   e. Assign the correct code
      Complete the handout: What’s the Main Term?

b. Procedure Codes – CPT Coding, a coding system, defined in the publication Current Procedural Terminology, for medical procedures that allows for comparability in pricing, billing, and utilization review.
   i. Used to code medical procedures and services performed in outpatient facilities
   ii. Has an index and a numerical listing
   iii. To use the code book
         1. Go to the index, locate the procedure
         2. Go to the numerical listing to determine which code is appropriate for the procedure listed in the charge form

iv. There are 6 sections within the numerical listing
   1. Evaluation and management
   2. Anesthesia
   3. Surgery
   4. Radiology
   5. Pathology and laboratory
   6. Medicine

v. The CPT index is organized by alphabetical main terms with include
   1. Procedures
   2. Services
   3. Organs
   4. Anatomic sites
   5. Conditions
   6. Eponyms (a name for a disease that was derived from a person’s name) [http://www.bing.com/search?q=eponyms&src=IE_SearchBox&adlt=strict]
   7. Abbreviations

vi. This is quite different from what you learned from the ICD-9-CM coding

vii. Reminder, with ICD-9-CM coding, you had to pick a main term; not true with CPT coding

viii. For this reason, most students like CPT coding over ICD coding

ix. Basic steps in CPT Coding
1. **Review the procedure or service** listed on the charge slip; example Rapid Strep Test
2. **Locate the main term** for the procedure or service
3. **Locate subterms** and follow cross references
4. **Record all codes** listed to be reviewed
5. **Review the description** of procedure/service codes
6. **Record all codes** listed to be reviewed
7. **Assign the appropriate code number**

Complete the CPT Coding handout

**IV** Document Information

A. Obtain and record patient information – this was discussed in the diagnostic and therapeutic services objective. In health informatics, this person might be the **admissions clerk**

B. Transcribe health information

a. The **medical transcriptionist** transcribes health information dictated by the physician and other healthcare professionals into the patient’s chart/medical record

b. This requires knowledge of **medical transcription practices** and **legal guidelines**; this includes:
   i. Knowledge of medical terminology
   ii. Understanding of anatomy, physiology, and disease processes
   iii. Familiarity with pharmacology and laboratory tests

c. Proofread Transcribed Reports
   i. Evaluate the **punctuation** of the document
   ii. Evaluate **spelling** using spell check
   iii. Pay close attention to words that **sound alike**; example hear/here, sight/site
   iv. Evaluate possible **keying errors**, pay particular attention to numbers
   v. Use the **print layout view** to evaluate the entire page of your document

C. Complete and process insurance forms

a. **Health Insurance Specialist** completes and processes insurance forms
   i. Reviews the **charges**
   ii. Codes diagnoses and procedures
   iii. Posts charges and payments to the patients account

b. **CMS – 15** – a standards form used to **request reimbursement** for healthcare services
   i. From a **third-party payer**; such as an insurance company
   ii. Or, from a **government program**; such as Medicare/Medicaid
   iii. Example of the form (handout)

D. Follow the legal guidelines form documents

a. **Maintain the confidentiality** (HIPAA) of the patients information at all times; only those individuals or facilities who have the patients **written consent** to access information may be provided with such

b. **Ethical claims posted for insurance reimbursement** – patient must be informed that **personal information** may be requested by the insurance company in order to process the claim
Complete the CPT Coding handout

Communicate information, as it refers to the patient in the following avenues:

A. Filing records may be done using several methods; they vary depending upon the facility; examples include
   a. Alphabetic – information is filed simply in alphabetical order according to the following
      i. The patient/individual
      ii. Businesses
      iii. Institutions
      iv. Government agencies
      v. Subjects
      vi. Topics
      vii. Geographic locations
   viii. Basic information regarding using this method
        1. Files names on a unit-by-unit basis
        2. Each part of the name is considered a separate unit
        3. Each name must be compared letter by letter in order to place the names in proper sequence
   b. Numeric – uses numbers in various combinations, which include:
      i. Straight-numerical, or consecutive
      ii. Duplex-numerical, two or more sets of numbers separated by dashes, commas, periods or spaces
      iii. Chronological uses numeric dates, year/month/date
      iv. Terminal-digit, the last digit is the primary unit
   c. Alphanumeric – uses a combination of names and numbers
      i. Once alphabetic divisions are made, number categories are assigned
      ii. Any number of combinations can be applied

B. The use of technology – examples would include, but are not limited to the following:
   a. Computers
   b. Fax machines
   c. Automated routing unit (ARU)
   d. Paging systems
   e. Special consideration must be addressed to maintain confidentiality

C. Schedule appointments
   a. Remember, the offer is when the patient goes to a new physician and asks to be a patient
   b. The acceptance is when the appointment is made
   c. The consideration is the services that are provided followed by the expectation of payment to be made
   d. The would be done through the receptionist
   e. Special consideration must be paid to the convenience of the patient and the times available for an appointment

D. Maintain account records
a. **Asset records** – a record of all valuable property or monies owned by the facility
b. **Depreciation records** – a record of when all assets were purchased because as they age, they depreciate in value
c. **Inventory records** – in addition to fixed assets, such as equipment and furniture, there must also be a record of expendables; those assets that will be used and must be replaced once used
d. **Records of accounts** – This would include both incoming and outgoing monies; patients owing and the facilities debts as well.
e. **Cash records** – include any monies received that was cash
f. **Payroll records** – all monies going out to the employee
g. **Tax records** – deducted for the employees, as well as those taxes on the facility itself

E. **Manage health information systems**
   a. **Combine the information systems** used within a healthcare agency
   b. **It allows for the timely and accurate flow of information** between all the systems
   c. **It requires organization of the information** within certain guidelines
   d. **It requires that all the stakeholders participate in the design of the operational systems**; managers, engineers, maintenance, any department who will be sharing the use of the systems
   e. It also requires that these stakeholders **evaluate** the operational systems as well

F. **Employment opportunities in Health Informatics**
   a. **Clinics** – A place or hospital department where outpatients are given medical treatment or advice.
   b. **Home Health facilities** – A company that provides short-term skilled nursing or rehabilitative services to homebound persons following a decline in function or an acute illness.
   c. **Hospitals** – Is a health care institution providing patient treatment by specialized staff and equipment.
   d. **Insurance companies** – A company that supplies insurance to an individual or group of individuals through specific employee benefits
   e. **Laboratories** – A place equipped for the performance of tests, experiments, and investigative procedures and for the preparation of reagents, therapeutic chemical materials, and so on.
   f. **Legal offices** – A facility that provides the individual with advice or services regarding the law or legal guidelines
   g. **Physician offices** – is a facility/rooms that provide services or treatments to individuals with illness or injury
   h. **Transcription services** - is an allied health profession, which deals in the process of transcription, or converting voice-recorded reports as dictated by physicians or other healthcare professionals, into text format. [http://en.wikipedia.org/wiki/Medical_transcription](http://en.wikipedia.org/wiki/Medical_transcription)