Notes to Instructors

This Instructor Manual is a resource for instructors using this component. Each component is broken down into units, which include the following elements:

- Learning objectives
- Suggested student readings, texts, reference links to supplement the narrated PowerPoint slides
- Lectures (voiceover PowerPoint in Flash format); PowerPoint slides (Microsoft PowerPoint format), lecture transcripts (Microsoft Word format); and audio files (MP3 format) for each lecture
- Self-assessment questions reflecting Unit Objectives with answer keys and/or expected outcomes
- Application Activities (e.g., discussion questions, assignments, projects) with instructor guidelines, answer keys and/or expected outcomes
Component Overview
For students without an IT background, this Component provides a basic overview of computer architecture; data organization, representation and structure; structure of programming languages; networking and data communication. It also includes basic terminology of computing.

Component Objectives
At the completion of this component, the student will be able to:
1. Learn correct terminology for computing and technology including for hardware, software, networks, Internet and databases
2. Identify commonly used hardware components.
3. Identify commonly used software applications and operating systems.
4. Explain the function and use of programming languages and identify commonly used languages.
5. Define what a database is, explain what querying languages are and identify commonly used database systems.
6. Describe network computing, its benefits and risks, and identify commonly used communications hardware and software components.
7. Identify security risks for computing systems and discuss potential solutions.
8. Explain the design and development process of a software information system such as an EHR.
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Likewise, the above also applies to the Curriculum Development Centers (including Columbia University, Duke University, Johns Hopkins University, Oregon Health & Science University, University of Alabama at Birmingham, and their affiliated entities).
Component 4/Unit 1

Unit Title
Basic Computing Concepts, Including History

Unit Description
This unit introduces basic computing concepts and terminology. It identifies common elements of computers, both in terms of hardware and software and provides information on selecting a computer by discussing the range of computer types, from desktops to laptops to servers. Finally, it provides a history of the development of computing and healthcare information systems over time.

Unit Objectives
By the end of this unit the student will be able to:

1. Define what a computer is. (Lecture a)
2. Describe different types of computers, including PCs, mobile devices and embedded computers. (Lecture a)
3. Define the common elements of computer systems. (Lecture a)
4. Describe the various hardware and software options for typical desktop, laptop and server systems for home and business use with a focus on healthcare systems. (Lecture b, c)
5. Explain the development of computers and the Internet, including healthcare systems, up until the present time. (Lecture d, e)

Unit Topics/Lectures
1. What is a computer
   a. Definition of a computer
   b. Types of computers
   c. Common Elements of computer systems
2. Selecting a computer
   a. Selecting a desktop
   b. Selecting a laptop
   c. Selecting a system for healthcare applications
3. History of Computing
   a. The beginnings of computers
   b. The first computers

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c. Early electronic medical records
d. Personal computers
e. The Internet
f. Current and future computers

Unit References

Lecture 1a

Lecture 1a Images

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Lecture 1b


Lecture 1b Images


Lecture 1c


Lecture 1c Images


Lecture 1d


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**Lecture 1d Images**


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from Wikimedia Commons website: http://commons.wikimedia.org. Public domain image.


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Slide 22: Gloria Ruth Gorden, left, and Ester Gerston wiring the right side of the ENIAC (Electronic Numerical Integrator And Computer), circa 1946. U.S. Army photo, from archives of the ARL Technical Library, courtesy of Mike Muuss. Public domain PD-US.

Lecture 1e

Lecture 1e Images


Slide 8: Visicalc Screenshot. (Gortu, 2005) [Link](http://en.wikipedia.org/wiki/File:Visicalc.png). Retrieved Nov. 2011 from the Wikimedia Commons website: [Link](http://commons.wikimedia.org). This work is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License.


**Student Application Activities**

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Component 4/Unit 2

Unit Title
Internet and the World Wide Web

Unit Description
This unit covers the implications, origins, and use of the Internet and the World Wide Web, including the advantages and disadvantages of this technology.

Unit Objectives
By the end of this unit the student will be able to:
1. Define the Internet and how to connect to it. (Lecture a, b)
2. Define the World Wide Web and how to access it. (Lecture a, b)
3. Write effective search queries for Internet search engines, filter the results and evaluate credibility of information. (Lecture b)
4. Discuss security and privacy concerns on the Internet. (Lecture c)
5. Describe ethical issues for the Internet. (Lecture c, d)
6. Explore online healthcare applications and associated security and privacy issues including HIPAA. (Lecture d)

Unit Topics/Lectures
1. The Internet, its origins, and evolution
   a. The origins of the Internet
   b. The evolution of the Internet
2. The Internet and the World Wide Web (WWW)
   a. The origins of the WWW
   b. HTML, Web pages, and Web servers
   c. Ownership of the WWW
3. Standardized communications
   a. Internet protocols and their purpose
   b. Internet addressing
4. The Domain Naming System (DNS)
   a. DNS and Internet Protocol (IP)
5. Connecting to the Internet
   a. Internet hardware
6. Internet Service Providers (ISPs)
a. ISP roles and fees
b. ISP equipment
c. ISPs and IP address management
d. ISPs and DNS

7. Internet search engines
   a. Search engine providers
   b. Search engine functionality
   c. Search engine search terms and use

8. Internet security and privacy concerns

9. Internet devices and methods of attack

10. Operating system and device security
    a. File security
    b. Internet security

11. Password security
    a. User accounts
    b. Miscellaneous security considerations

12. Trojans, viruses, worms, phishing, and hoaxes

13. Ethical considerations of the Internet
    a. Sharing Internet connectivity with others
    b. Copyright infringement
    c. Internet-based databases
    d. False information on the Internet

14. Online information sharing
    a. Online privacy
    b. Online confidentiality

15. Federal rule emergence
    a. Health Insurance Portability and Accountability Act (HIPAA)

16. Electronic Health Record (EHR) systems
    a. Online HER systems
    b. Health care provider EHR systems
    c. EHR security

Unit References

Lecture 2a


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Lecture 2a Charts, Tables, Figures


Lecture 2a Images


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Lecture 2b

Lecture 2c

Lecture 2c Images

Lecture 2d

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Component 4/Unit 3

Unit Title
Computer Hardware

Unit Description
This unit provides a foundation on how a computer functions and how data is represented in memory, input and output devices, and the CPU, including its role in system functionality.

Unit Objectives
By the end of this unit the student will be able to:
1. List the major elements of a computer (Lecture a)
2. Describe how data is stored in memory and in secondary storage (Lecture b)
3. Describe how data is represented in binary notation (Lecture b)
4. Describe the function of the central processing unit (CPU) of the computer (Lecture c)
5. Describe how data is input/output from a computer (Lecture c)
6. Describe how the elements of a computer system work together (Lecture c)
7. Explain how specialized architectures and embedded systems are used in healthcare settings (Lecture c)

Unit Topics/Lectures
1. What is a computer
   a. Computer hardware components
   b. System components
   c. Motherboard ports
   d. Motherboard buses
2. Computer input and output devices
   a. Input devices
   b. Output devices
3. Input/Output ports
4. Memory storage devices
   a. Primary storage
   b. Secondary storage
5. Data storage.

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6. The Central Processing Unit (CPU)
   a. CPU components
   b. CPU execution
   c. CPU performance
   d. Evolution of the CPU

7. Data vs. information

8. Specialized health care CPUs

Unit References

Lecture 3a

Lecture 3a Images

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Lecture 3b Images

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Lecture 3c


Lecture 3c Charts, Tables, Figures

4.1 Figure: Example of data-addressing. J. Blackwood, (2011) (CC BY-NC-SA 3.0).


4.3 Figure: CPU with access to the motherboard’s data and address bus; Connections to External Devices (monitor, keyboard, Mouse, etc.). Blackwood, J (2010) (CC BY-NC-SA 3.0).

Student Application Activities

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Component 4/Unit 4

Unit Title
Computer Software

Unit Description
This unit covers application and system software, with a focus on healthcare systems. It also describes the functions of operating systems, presents different operating systems, and defines the purpose and usage of file systems.

Unit Objectives
By the end of this unit the student will be able to:

1. Define application vs. system software. (Lecture a)
2. Give examples of application software focusing on healthcare systems. (Lecture a)
3. Describe the functions of system software. (Lecture b)
4. List different types of operating systems. (Lecture b)
5. Explain the purpose and usage of file systems. (Lecture c)

Unit Topics/Lectures
1. Application Software
   a. Forms of Application Software
   b. Types of Application Software
   c. Examples of Application Software
   d. Components of Software
   e. Installing and Uninstalling Software
   f. Ethical Considerations of Software
2. System Software
   a. Operating Systems
   b. Utility Programs
   c. Types and Examples of OS
3. File Systems
   a. Computer Files
   b. File “Containers”
   c. File Management Utilities
   d. File System Implementation

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Unit References

Lecture 4a


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Lecture 4a Images


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Lecture 4b


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Lecture 4c


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Lecture 4c Images

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Component 4/Unit 5

Unit 5
Computer Programming

Unit Description
This unit discusses the purpose and types of programming languages from simple machine code to high level programming languages, including the process of compiling and interpreting. Students will use variables, loops and conditional statements to build a simple program. Finally, this unit presents some advanced programming concepts such as Object Oriented Programming.

Unit Objectives
By the end of this unit the student will be able to:
1. Define the purpose of programming languages. (Lecture a)
2. Differentiate between the different types of programming languages and list commonly used ones. (Lecture a)
3. Explain the compiling and interpreting process for computer programs. (Lecture b)
4. Learn basic programming concepts including variable declarations, assignment statements, expressions, conditional statements and loops. (Lecture c, d)
5. Describe advanced programming concepts including objects and modularity. (Lecture 3)

Unit Topics/Lectures
1. Overview of programming languages
   a. Software development and programming
   b. Algorithms
2. Different types of programming languages
   a. Programming paradigms
   b. Scripting languages
   c. Programming languages developed for healthcare
3. Generating an executable program
   a. Compiling
   b. Interpreting
   c. Java’s hybrid approach
4. Programming language constructs with Java examples
   a. Variables and datatypes
   b. Assignment statements and expressions
   c. Input and Output

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d. Control Structures
   i. Conditional Expressions
   ii. If Statements
   iii. Loops

5. Object Oriented Programming (OOP)
   a. Objects and classes
   b. OOP Designs
   c. Inheritance
   d. Modularity
   e. Encapsulation

Unit References

Lecture 5a


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**Lecture 5a Images**

**Lecture 5b**

**Lecture 5b Images**

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Lecture 5c


Lecture 5c Images


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Lecture 5d


Lecture 5d Charts, Tables, Figures

5.1 Table: Example of more complex conditional expressions.

Lecture 5e


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Lecture 5e Charts, Tables, Figures
5.2 Table: BMI Calculator (Hribar, 2011)
5.3 Figure: Child classes inherit all methods and instance variables from parent class (Hribar, 2011).

Student Application Activities
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Component 4/Unit 6

Unit Title
Databases and SQL

Unit Description
This unit discusses the purposes of databases, a relational database, and the querying language SQL. Students will design a simple database using data modeling and normalization. This unit will define basic data operations, provide instruction on how to create common query statements, and discuss SQL implementation.

Unit Objectives
By the end of this unit the student will be able to:
1. Define and describe the purpose of databases (Lecture a)
2. Define a relational database (Lecture a)
3. Describe data modeling and normalization (Lecture b)
4. Describe the structured query language (SQL) (Lecture c)
5. Define the basic data operations for relational databases and how to implement them in SQL (Lecture c)
6. Design a simple relational database and create corresponding SQL commands (Lecture c)
7. Examine the structure of a healthcare database component (Lecture d)

Unit Topics/Lectures
1. The definition and purpose of databases
2. Relational databases
3. The SQL querying language
4. Data operations for databases
5. Designing a database
6. Examples of querying statements for databases
7. Examples of database tables used in a healthcare application

Unit References
Lecture 6a

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**Lecture 6a Images**

**Lecture 6b**

**Lecture 6b Charts, Tables, Figures**
6.8 Figure: Entity-Relationship Diagram (ER diagram) (PD-US, 2012)
6.9 Figure: One-to-many relationship (PD-US, 2012)
6.10 Table: Contact attributes (PD-US, 2012)
6.11 Table: Contact table (PD-US, 2012)
6.12 Figure: Normalized database structure (PD-US, 2012)
6.13 Tables: New tables using same data from Table 6.5 (PD-US, 2012)

**Lecture 6c**

**Lecture 6c Charts, Tables, Figures:**
6.14 Figure: View tables (PD-US, 2011).
6.15 Figure: View table columns (PD-US, 2011).
6.16 Figure: Retrieve an entry (PD-US, 2011).
6.17 Figure: Add sorting (PD-US, 2011).
6.18 Figure: Add selectivity (PD-US, 2011).
6.19 Figure: Retrieve from multiple tables (PD-US, 2011).

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6.20 Figure: Create a Complex SQL Statement (PD-US, 2011).
6.21 Figure: Modify company name (PD-US, 2011).
6.22 Figure: New company name (PD-US, 2011).
6.23 Figure: Verify again (PD-US, 2011).

Lecture 6d

Lecture 6d Charts, Tables, Figures
6.24 Table: Patient table (Select elements) (PD-US).
6.25 Table: Site table (Select elements) (PD-US).
6.27 Table: Patient review table (Select elements) (PD-US, 2011).

Lecture 6d Images
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Student Application Activities
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Component 4/Unit 7

Unit Title
Networks

Unit Description
This unit covers the history and evolution of computer networks, including the various types of network communications. Various forms of networking addressing are also covered, including network topologies, standards and protocols, logical model concepts, network hardware, and wireless communication.

Unit Objectives
By the end of this unit the student will be able to:
1. List and describe the various types of network communications and network addressing (Lecture a, b)
2. List and define the different types of networks (Lecture c)
3. Describe different network topologies (Lecture c)
4. List and describe different network standards and protocols (Lecture c, e)
5. Describe wireless communication (Lecture d)
6. List and describe network hardware (Lecture d)

Unit Topics/Lectures
1. What is a network?
   a. A modern network example
   b. Why networks exist and their use
   c. Networks decrease cost
   d. Networks serve customers
   e. Devices connect to a network
2. Wired vs. wireless networks
   a. Bandwidth vs. throughput
   b. Internet Service Providers (ISPs)
3. Connecting to the Internet
   a. Leasing an Internet Protocol (IP) address
   b. Leasing a dynamic IP Address
   c. Leasing a static IP address
4. IP addressing
   a. IP address versions (IPv4 and IPv6)
5. Local Area Network (LAN) addressing
   a. Media Access Control (MAC) addressing
   b. Obtaining an IP address

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6. The Internet and the Domain Naming System (DNS)
   a. What is a domain name?
   b. ISPs and DNS
   c. DNS and IP integration

7. Network types
   a. Local Area Networks (LANs)
   b. Wide Area Networks (WANs)
   c. Metropolitan Area Networks (MANs)

8. Network topologies
   a. Physical topologies
   b. Logical topologies

9. Network standards and protocols
   a. The Institute of Electrical and Electronics Engineers (IEEE)
   b. Internet protocols
   c. Wired and wireless networking standards

10. Wireless communications
    a. IEEE 802.11 specifications
    b. Wireless communication advantages and disadvantages
    c. Wireless communication functionality and setup

11. Network hardware
    a. Network Interface Cards (NICs)
    b. Switch and router devices
    c. Server devices and operating systems (OS)
    d. Surge protectors and uninterruptible power supplies (UPS)

12. Networking logical models
    a. The Open Systems Interconnection (OSI) model
    b. Layers of the OSI model
    c. Devices and the OSI model
    d. The OSI model and health care hardware and software

Unit References

Lecture 7a

Lecture 7a Images

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Lecture 7b

Lecture 7b Images
Slide 8: Results from opening command prompt and running ‘ipconfig/all’ command. (2011, PD-US)

Lecture 7c

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Lecture 7c Images

Lecture 7d

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Lecture 7d Images

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Lecture 7e

Student Application Activities
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Component 4/Unit 8

Unit Title
Security

Unit Description
This unit covers common security concerns and safeguards, including firewalls, encryption, virus protection software and patterns, and programming for security. Additional topics include security of wireless networks, and concerns, mitigations, and regulations related to healthcare applications.

Unit Objectives
By the end of this unit the student will be able to:
1. List and describe common security concerns (Lecture a)
2. Describe safeguards against common security concerns (Lecture b)
3. Describe security concerns for wireless networks and how to address them (Lecture b and c)
4. List security concerns/regulations for health care applications (Lecture c)
5. Describe security safeguards used for health care applications (Lecture c)

Unit Topics/Lectures
1. Data and hardware security concerns
   a. Common threats to security
   b. Trojan horse
   c. Viruses
   d. Macro viruses
   e. Personal information attacks
   f. Worms
   g. False information
2. How do hackers operate
3. Network security
   a. What is network security
   b. Authentication
   c. Authorization
   d. Object permissions
   e. Mitigating security issues

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f. Security policy
g. Authentication factors
h. Factor authentication
i. Hardware and software firewalls
j. Windows Firewall
k. Anti-virus (AV) software
l. Intrusion Protection Systems (IPS)
m. Data encryption
n. Audit of security policy practices
4. Additional security precautions
   a. Password policies
   b. Physical security of assets
5. Wireless networking security
   a. Wireless device security
6. Health care applications and security
7. Security of health care data
   a. Electronic Health Record (EHR) systems
   b. EHRs used by health care providers
   c. EHR security Q & A.
   d. Federal regulations
8. Federal regulations
   a. Health Insurance Portability and Accountability Act (HIPAA)
   b. What is privacy
   c. What is confidentiality
9. Security of EHR record data

Unit References

Lecture 8a

Lecture 8a Images
Slide 20: Screen shot of the folder named Picture properties dialog box. Image source: the creator of this presentation. (2011, PD-US)
Lecture 8b

Lecture 8b Images

Lecture 8c

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**Lecture 8c Images**
Slide 5: Screenshot of a partial browser address bar with a valid bank certificate. (PD-US, 2006)

**Student Application Activities**
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Component 4/Unit 9

Unit Title
Information Systems

Unit Description
This unit defines information systems and describes how they are used. It discusses how an information system is designed, developed, tested, supported and maintained. Finally, it explains how information systems are used in healthcare settings, including the role of specialized information systems.

Unit Objectives
By the end of this unit the student will be able to:
1. Define an information system, how one is used and list examples. (Lecture a)
2. Describe the components of an information system. (Lecture a)
3. Describe the process developing an information system. (Lecture b)
4. Describe the different types of testing and when testing should occur. (Lecture c)
5. Describe how information systems are supported and maintained over time. (Lecture c)
6. Describe specialized information systems. (Lecture d)
7. Explain how information systems are used in healthcare. (Lecture d)

Unit Topics/Lectures
1. Information Systems Introduction
   a. Definition
   b. Use
   c. Data, Information and Knowledge
   d. Examples
2. Components of Information Systems
   a. Processes
   b. Stakeholders
3. Systems Development
   a. Planning
   b. Analysis

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c. Design
d. Implementation
e. Support/Security

4. Testing information systems
   a. Test plan
   b. Test Cases
   c. Test Sequence
d. Types of testing

5. Support and maintenance of information systems
   a. User support
   b. Maintenance
c. Security

6. Specialized information systems
7. Information systems in healthcare

Unit References

Lecture 9a
Lecture 9a Images


Lecture 9b


*Indicates this link is no longer functional.


Lecture 9b Images


*Indicates this link is no longer functional.
Lecture 9c


Lecture 9d

*Indicates this link is no longer functional.

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Lecture 9d Images

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*Indicates this link is no longer functional.

**Student Application Activities**
- comp4_unit9_activities.doc
- comp4_unit9_activities_key.doc
- comp4_unit9_discuss.doc
- comp4_unit9_discuss_key.doc
- comp4_unit9_self_assess.doc
- comp4_unit9_self_assess_key.doc
Component 4/Unit 10

Unit Title
Future of Computing

Unit Description
This unit covers five topics concerning the future of computing: trends in computing, interfaces used to communicate with computer systems, cloud computing, the changing social implications of the use of computer systems, and the ubiquity of computers in our daily lives.

Unit Objectives
By the end of this unit the student will be able to:
1. Describe the latest advances in technology.
2. Discuss the implications of advances in technology for healthcare systems, including potential risks.

Unit Topics/Lectures
1. Trends in Computing
2. User Interfaces
3. Cloud Computing
4. Social Implications
5. Ubiquitous Computing

Unit References

Lecture 10a
3. Qualcomm Tricorder X PRIZE: http://www.qualcommtricorderxprize.org/

*Indicates this link is no longer functional.


Lecture 10a Images

*Indicates this link is no longer functional.

Lecture 10b


21. Oikarinen, J.; Reed, D. (1993 May) UNIX For Beginners, Bell Laboratories internal memorandum. Internet Relay Chat Protocol,


Student Application Activities
comp4_unit10_activities.doc
comp4_unit10_activities_key.doc
comp4_unit10_discuss.doc
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comp4_unit10_self_assess.doc
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# Component Acronym Glossary

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ACF</td>
<td>Administration for Children and Families</td>
</tr>
<tr>
<td>ADA</td>
<td>American Dental Association</td>
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<tr>
<td>ADL</td>
<td>activity of daily living</td>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired immune deficiency syndrome</td>
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<tr>
<td>AMA</td>
<td>The American Medical Association</td>
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<tr>
<td>AoA</td>
<td>Administration on Aging</td>
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<tr>
<td>ATSDR</td>
<td>Agency for Toxic Substances and Disease Registry</td>
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<tr>
<td>CCU</td>
<td>critical care unit</td>
</tr>
<tr>
<td>CD-10-PCS</td>
<td>The International Classification of Diseases, 10th Revision, Procedure Coding</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>CDHC</td>
<td>Consumer Driven Health Care Plans</td>
</tr>
<tr>
<td>CDS</td>
<td>Clinical Decision Support</td>
</tr>
<tr>
<td>CDT</td>
<td>Code on Dental Procedures and Nomenclature</td>
</tr>
<tr>
<td>CMS</td>
<td>Centers for Medicare and Medicaid Services</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
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<tr>
<td>CPT</td>
<td>Current Procedure Terminology</td>
</tr>
<tr>
<td>CT</td>
<td>Computerized Tomography</td>
</tr>
<tr>
<td>DNR</td>
<td>do-not-resuscitate order</td>
</tr>
<tr>
<td>DRG</td>
<td>Diagnosis Related Groups</td>
</tr>
<tr>
<td>EBM</td>
<td>Evidence Based Medicine</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic data interchange</td>
</tr>
<tr>
<td>EMT</td>
<td>emergency medical technician</td>
</tr>
<tr>
<td>EMTALA</td>
<td>Emergency Medical Treatment and Active Labor Act</td>
</tr>
<tr>
<td>EPO</td>
<td>Exclusive Provider Organization</td>
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<tr>
<td>ER</td>
<td>emergency room</td>
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<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
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<tr>
<td>FFS</td>
<td>Fee-for-service</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>HCO</td>
<td>Health Care Organization</td>
</tr>
<tr>
<td>HCPCS</td>
<td>Health Care Common Procedure Coding System</td>
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<tr>
<td>HHS</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act</td>
</tr>
<tr>
<td>HIT</td>
<td>Health Information Technology</td>
</tr>
<tr>
<td>HITECH</td>
<td>The Health Information Technology for Economic and Clinical Health Act</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
</tr>
</tbody>
</table>
HMO - Health Maintenance Organization
HRSA – Health Resources and Services Administration
ICD-10-CM - The International Classification of Diseases, 10th Revision, Clinical Modification,
ICD-9-CM - The International Classification of Diseases, Ninth Revision, Clinical Modification
ICU – intensive care unit
IHS – Indian Health Service
IPA – independent practice association
JC – Joint Commission
JTTS – Joint Theater Trauma System
LPN – licensed practical nurse
LRN - Lab Response Network
MCO - Managed care organization
MHS – Military Health System
MRI – Magnetic Resonance Imaging
MRSA - methicillin-resistant Staphylococcus aureus
National Drug Codes (NDC
NATO – North Atlantic Treaty Organization
NIH – National Institutes of Health
NOS – Not Otherwise Specified
OIG – Office of Inspector General
OR – operating room
PA – physician assistant
PMPM - per member per month
POS - Point of Service Plan
PPO - Preferred Provider Organization
PTSD – post-traumatic stress disorder
RBRVS - Resource Based Relative Value Scale
RN – registered nurse
SAMHSA – Substance Abuse and Mental Health Services Administration
TBI – traumatic brain injury
VA – Department of Veterans Affairs