PowerPoint® to accompany

Medical Assisting

Chapter 6

Second Edition

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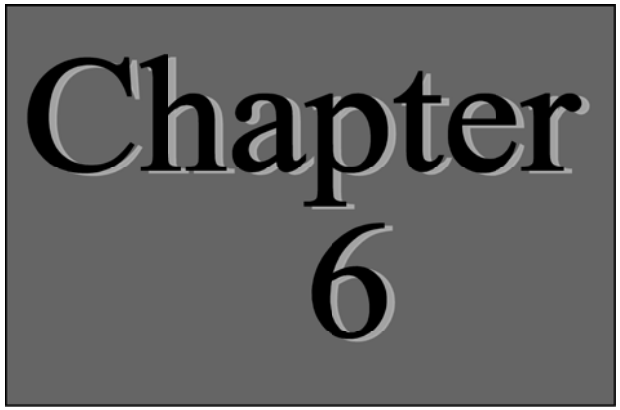

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Using Computers in the Office

Objectives

6-1 List and describe common types of computers.
6-2 Identify computer hardware and software components and explain functions of each.
6-3 Describe the types of computer software commonly used in the medical office.
6-4 Discuss how to select computer equipment for the medical office.

Using Computers in the Office (cont.)

Objectives

6-5 Explain the importance of security measures for computerized medical records.

6-6 Describe the basic care and maintenance of computer equipment.

6-7 Identify new advances in computer technology and explain their importance to the medical office.

The Computer Revolution

- Computers have changed the way we live and work by making many tasks easier to complete.

Three Benefits Computers Offer:

Processing Speed

Information Storage

Accuracy

Types of Computers

Mainframe Computers

- Most expensive
- Largest
- Processes & stores large quantities of information
- Used by government facilities

Minicomputers

- Medium sized
- Commonly used in network settings
- Typically functions as server which allows several users to share access

Personal Computers

- Smallest in size
- Self-contained units
- Found in homes, schools and offices
- Three types:
    - **Desktop**
    - **Notebook**
    - **Palmtop**

Components of the Computer

- ***Hardware*** which serves four main functions:
  - Inputting data
  - Processing data
  - Storing data
  - Outputting data
- ***Software*** that consists of two categories:
  - Operating system (controls computer operations)
  - Application Software (allows specific tasks to be performed)

Hardware

Input Devices

Keyboards

- Most common input device
- Main part resembles a typewriter

Modems

- Used to transfer information from one computer to another
- Functions as input & output devices

Scanners

- Inputs printed matter
- Converts data into format computer can read

Pointing Devices

- Used to enter information

<u>Three types</u>:

1) mouse **2)** trackball

3) touch pad

Hardware (cont.)

Processing Devices

Motherboard

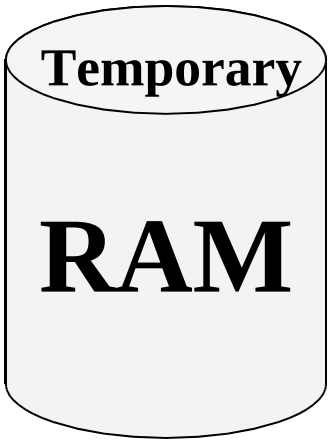
- Main circuit board.
- Controls the other components in the computer.

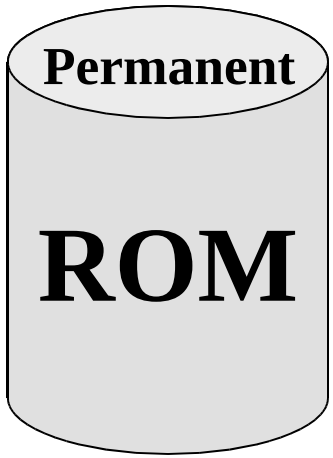
Central Processing Unit

- Also called a ***microprocessor.***
- Primary computer chip.
- Interprets and executes programs.
- Processing abilities depends on type and speed.

Microprocessor speed is measured in ***megahertz*** (MHz).

Hardware (cont.)





- Random-access memory
- Temporary memory
- The greater the ***RAM,*** the faster the computer performance

- Read-only memory
- Permanent memory
- You can see information, but no changes can be made to it

Hardware (cont.)

Read-only Memory (ROM) provides the basic operating instructions the computer needs to function.

Hard Disk Drive

- Information is stored permanently for later retrieval
- Larger hard disk space allows greater storage of programs

Diskette Drive

- Standard diskettes and ***3 ½ inch*** (rigid) and zip diskettes.

CD-ROM Drive

- Compact disc-read-only memory
- Stores huge amounts of data
- Houses larger programs containing ***Multimedia***

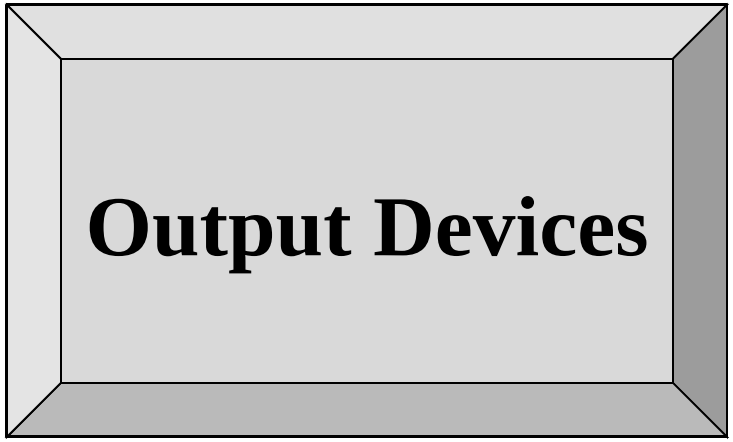
Tape Drive

- Used to back up hard disk files
- Look similar to audiotapes

Hardware (cont.)

Monitor

- Resembles a television screen
- Displays active information



Printer

- Produces a ***hard copy*** (readable paper copy) of the information
- Types include:
  - **Dot matrix**
  - **Ink-jet**
  - **Laser**

Resolution is measured in dot pitch and refers to the crispness of images.

Printer Resolution is noted in terms of dots per inch (**dpi**).

Software

Two Categories (operating system & application software)

- **Operating System** controls computer operations
  - **DOS** (disk operating system) uses a command line interface so a typed command must be entered to do a function.
    - Does not allow more than one operation (software program) to be running at the same time.
  - **Windows** uses a graphical user interface (**GUI**) where menu choices are identified by graphical ***icons.***
    - Allows ***multitasking*** meaning users can run two or more software programs at the same time.

Software (cont.)

- **Applications** account for the majority of software sold in stores.
  - Used for specific purposes and applications
  - One example is a ***database*** which is a collection of records created and stored on the computer
  - Other examples of applications include:
    - **Word Processing Software**
    - **Accounting Software**

Apply Your Knowledge

The office manager has requested that you create a **marketing brochure** that will have a variety of text and graphics to advertise the medical office. Which of the following storage devices will you use in addition to the hard drive and why? Provide support for your choice.

- 3 ½ -inch diskette
- Tape Drive
- CD-ROM

Apply Your Knowledge -Answer

The office manager has requested that you create a **marketing brochure** that will have a variety of text and graphics to advertise the medical office. Which of the following storage devices will you use in addition to the hard drive and? Provide support for your choice.

- 3 ½ -inch diskette
- Tape Drive
- ☆ CD-ROM

CD-ROM's are ideal for graphics and would be the best choice.

Using Computer Software

Word Processing

- Common in medical offices
- Used instead of typewriters to:
  - **create reports**
  - **create correspondences**
  - **transcribe physicians' notes**
- Allows information to be saved, merged and corrected with ease

Using Computer Software (cont.)

Database Management

Databases are used in the medical office to store patient records such as:

- **Billing information**
- **Medical chart data**
- **Insurance information**

Using Computer Software (cont.)

- **Accounting & Billing**
  - Very useful software in medical offices
  - Assists with:
    - Maintaining patient accounts
    - Creating billing statements
    - Preparing financial reports
    - Maintaining tax records
- **Appointment Scheduling**
  - This software eliminates the need for written appointment book entries
  - Certain software lists available appointment dates & times
  - Using a network allows more users to access the schedule at a time

Using Computer Software (cont.)

- **Electronic Transactions**
  - Allows users to send and receive information instantly without waiting for regular mail
  - Common electronic transactions:
    - Sending insurance claims
      - **Claims are processed faster**
    - Communicating with other computer users
      - ***Electronic mail*** (E-mail)
      - **On-Line services such as the *internet***

Research capabilities have been enhanced with the advent of the CD-ROM.

Using Computer Software (cont.)
Software Training

Classes

- Both beginner & advanced level classes are often offered

Tutorials

- Usually provides a step-by-step overview of the software with practice exercises

Documentation

- Manuals may include indexes and troubleshooting tips
- On-Line help often has a "Contents" section that is helpful

Technical Support

- Available using the toll-free number listed on package
- Have registration number handy
- Be at the computer

Apply Your Knowledge

The medical assistant has been trying to use the newly installed software without any success. She has requested assistance from co-workers and reviewed the manual, yet it is operating improperly. Prior to calling the technical support number listed on the software package, what should she do?

Apply Your Knowledge -Answer

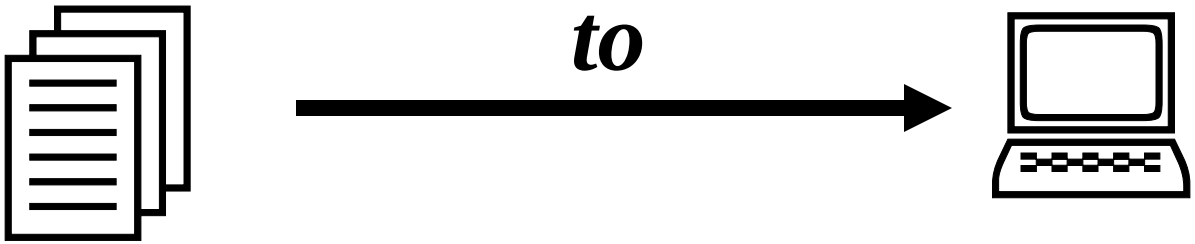
The medical assistant has been trying to use the newly installed software without any success. She has requested assistance from co-workers and reviewed the manual, yet it is operating improperly. Prior to calling the technical support number listed on the software package, what should she do?

- Be positioned in front of the computer with the software up
- Have the registration number available

Selecting Computer Equipment

- Learn about hardware and software options
  - **Take classes**
  - **Read computer magazines and books**
  - **Ask friends and coworkers who use computers**
- The medical assistant may be called upon to give input with:
  - **Selecting software**
  - **Adding a network**
  - **Choosing a vendor**

Converting to a Computerized Office



Manual **Computerized**

- ✓ Determine how the new system will be used.
- ✓ Seek a system that can be upgraded and expanded.
- ✓ Purchase the most advanced system possible for the amount of money that is available.

Upgrading the Office System

- Both hardware and software for computers are improved at a rapid pace requiring upgrades.
- Decisions to upgrade are determined by need and cost.

To Upgrade... Or Not To Upgrade

☺

- To replace or add simple components like printers

☹

- When the upgrade is not $ cost effective

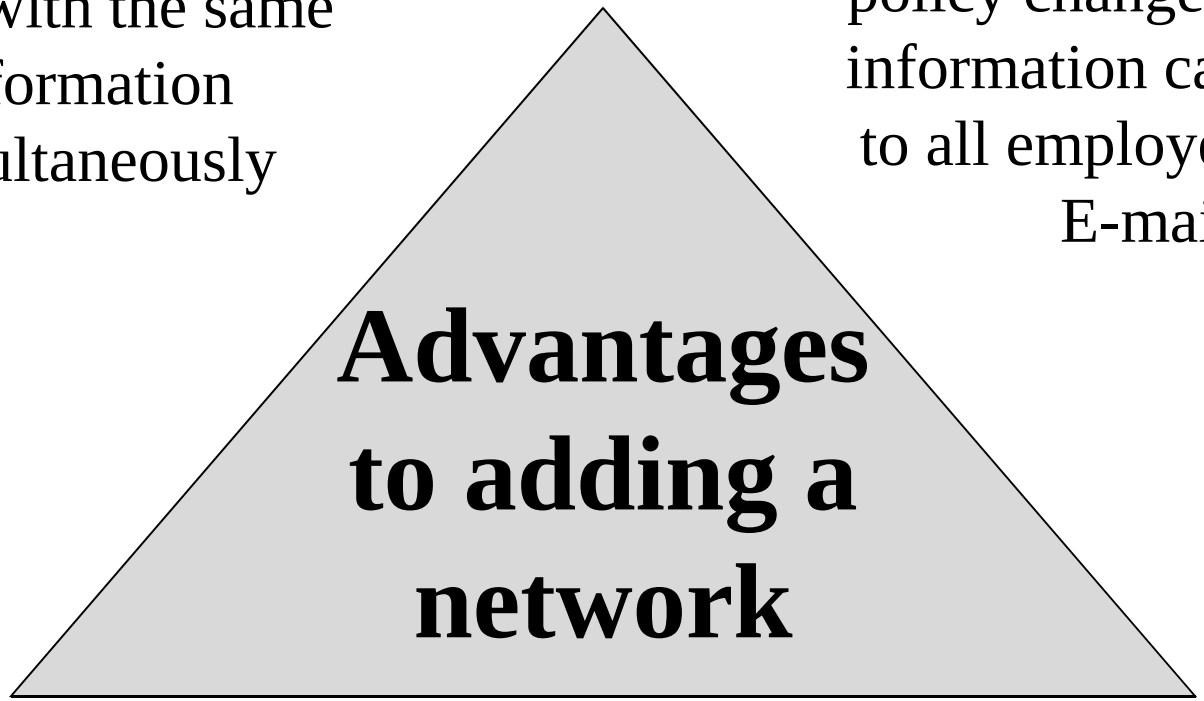
Selecting Software

- Make an informed decision by:
  - **Reading software reviews in magazines**
  - **Asking opinions of other offices that use similar software**
- Be sure your office computer meets the software minimum requirements for operation by checking:
  - **Processor speed & Operating system**
  - **Memory requirements (RAM & hard disk space)**
  - **Disk drive requirements (i.e. CD-ROM)**

Adding a Network

More than one person can work with the same information simultaneously

Internal communications about policy changes or other information can be sent to all employees using E-mail



Choosing a Vendor

What to Look for in a Vendor

- ☆ **Reputation**
- ☆ **Good Price**
- ☆ **Training Offers**
- ☆ **Service & Technical Support Availability**

It is a good practice to get cost estimates from at least three vendors and to purchase all hardware components from the same vendor.

Apply Your Knowledge

Imagine that you are one of six medical assistants in a busy medical practice that has state of the art technology. If you need to communicate a message regarding a change in co-payment fees for a particular insurance carrier, how would you do this?

Apply Your Knowledge -Answer

Imagine that you are one of six medical assistants in a busy medical practice that has state of the art technology. If you need to communicate a message regarding a change in co-payment fees for a particular insurance carrier, how would you do this?

Since the office has the latest technology a network is likely present, and **electronic mail** would be an efficient and rapid communication medium in this instance.

Security in the Computerized Office

Safeguarding Confidential Files

Two methods to safeguard confidential information includes:

❍ Pass Words

- **Employees are given a special password or user code that allows them to access information.**

❍ Activity Monitoring Systems

- **A computer system that monitors user activity.**
- **Problems or security breaches can be traced back to a specific employee code/password.**

Security in the Computerized Office (cont.)

Making & Storing Backup Files

It is important to routinely make diskette or tape backup files to secure computer files. **Also:**

- Store backup files in a different location for protection against:
  - **Fire**
  - **Burglary**
  - **Other Office Catastrophes**

Security in the Computerized Office (cont.)

Preventing System Contamination

Computer viruses are programs written to contaminate the hard disk that results in damage or destruction of computer files.

How are viruses transmitted?

- Infected diskettes
- Infected on-line files
- Internet Sites
- Electronic Bulletin Boards

What is the Cure?

☺Software programs can be purchased that detect & correct computer viruses.

Computer System Care and Maintenance

Remember not to eat or drink near the computer.

System Unit

- Use power strip with a surge protector.
- Place unit in a well-ventilated location.

Monitor

- Use a ***screen saver*** to protect against screen burn out.
- Newer monitors have a "power down" feature.

Printer

- Replace ribbon, cartridge or toner as needed.

Computer System Care and Maintenance (cont.)

Information Storage Devices

Diskettes

- Protect from:
  Magnetic fields
  Direct sunlight
  Extreme temperatures

CD-ROMs

- Touch only edges and hole in the center
- Store in a jewel case
- Never rub in circular motion

Magnetic Tapes

- Store in a cool, dry place away from magnetic fields.

Apply Your Knowledge

The medical office computer has had several recent viruses that have interrupted the efficiency of office transactions for the past two-weeks. Which of the following may be the most likely source of office system contaminations?

A. New software installed in the last two-weeks
B. Employees using the same 3 ½ -inch diskettes both in home and work computers.
C. The office that just moved next door to this medical practice, housed in the same building, installed a network two-weeks ago.

Apply Your Knowledge -Answer

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Computers of the Future

- **Telemedicine**
  - **Use of telecommunication to transmit video images of patient information**

- **CD-R Technology** (compact disc-recordable)
  - **Store more than standard CD's and can be read and written to**
- **Speech Recognition Technology**
  - **Allows computer to comprehend and interpret spoken words**

Apply Your Knowledge

A local cardiology practice is seeking a way to monitor the heart rhythm of patients while they are at home. Which of the technologies of the near future would afford them to do this?

Apply Your Knowledge -Answer

A local cardiology practice is seeking a way to monitor the heart rhythm of patients while they are at home. Which of the technologies of the near future would afford them to do this?

Telemedicine

End of Chapter