



Information and Communications Technology Basics

Foundational Curriculum:

Cluster 3: ICT Process

**Module 4: Information and Communications Technology (ICT)
and Information Systems Overview**

Unit 1: Information and Communications Technology Basics

FC-C3M4U1

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12/60



Unit Objectives



- Describe ICT and relate its importance
- Identify approved uses of the internet, desktop settings, and web-based tools as per your organization's policies and procedures
- Explain the appropriate use of social media
- Identify the policies and procedures regarding electronic document copying, printing, recording and storage
- State basic email functions, and comply with organizational email policies and procedures
- Differentiate different word processing programs to create, edit, store, and retrieve document files
- Identify when to use basic reference materials, manuals and tools (e.g., spell check) for instructional assistance, when uncertain about the correct style and format, and to improve accuracy



What is ICT?



- **Information and communications technology (ICT)** is a term that is synonymous with **information technology (IT)**, which pertains to the integration, use and application of data or electronic information, communications and technology
- ICT involves transmission, storage, or manipulation of the information via programmed and designed software, systems and processes through networks, interfaces and other means on and to devices such as telecommunications (smart phones), computers, tablets and other technologies
- Someone who has demonstrable training and competence in the use of ICT tools and processes is said to be **digitally skilled**
- ICT is always evolving and changing in terms of structure, organization and components, so it is important to keep up to date on the latest information, systems and technology related to ICT



Why is ICT Important?



- Many careers and roles in today's world utilize ICT to help staff perform their duties
- A great deal of the healthcare process involves accessing, processing and acting upon information and data
- ICT helps healthcare workers perform their duties more efficiently and effectively by helping them access, communicate, and store patient and health information
- Also, ICT helps bridge the information gap between health professionals and the communities they serve, such as providing technologies like telehealth, health diagnostic and maintenance applications, and remote access devices
- ICT also has the capacity to improve health system efficiencies, enhance quality of care, and reduce or prevent medical errors



Compliance with Approved Uses of the Internet, Desktop Settings and Web-Based Tools

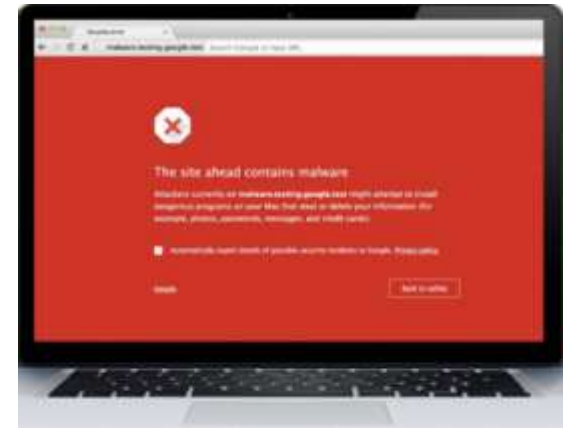


- A key component of ICT, the **internet** is a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols
- First and foremost, always consult your organization's policies and procedures for approved usage of the internet, desktop settings and web-based tools
 - You should become familiar with these policies and procedures and comply with them during your employment term
- As many organizations utilize the internet for internal and external communication, as well as web-based EMRs and clinical information systems, using the internet at work may be appropriate for reasons such as:
 - Entering health data
 - Searching for medical information
 - Consulting a health database
 - Interacting with a patient



Compliance with Approved Uses of the Internet, Desktop Settings and Web-Based Tools (cont'd)

- Personal use of the internet during work hours, such as social media, shopping, email, or personal web searches, are never appropriate during work time or using work equipment
 - Never use workplace devices to visit questionable, suspicious or malicious sites
 - Consult your local workplace policies for specific instructions; policies and requirements might vary according to your job role





Efficient and Safe Use of Internet and Web-Based Tools



- Exercise efficient and safe use of internet and web-based tools
- The use of web-based tools are common in healthcare organizations via the internet. Web-based tools, programs and functionality can include:
 - Ordering supplies through an internet application
 - Sending help desk or maintenance requests for issues or problems, or repairs needed for medical devices
 - Medline searches
 - Initiating referral requests, electronic prescriptions, medication interaction checking, or other electronic workflows
- Training and instructions of web-based tools is often available, but basic computer skills provide more confidence in using the tools
 - Additional basic and advanced computer skills training, including certification in digital skills, can be found at the [International Computer Drivers License Foundation](https://icdl.org/)*





Desktop Settings

- If you have the authorization to alter desktop settings on your work device, enable the settings that will make working easy and efficient
 - Keep your work device desktop clean and free from personalized screen savers, photos and customizations
 - Only make shortcuts to programs that are used often or hard to find otherwise
 - Name files and folders appropriately
 - Keep your folders organized
- If you are using a shared computer, remember to log off from any programs/websites that require sign-in
- *Never* share user IDs or passwords with others
- Do not save passwords to the browser
- Delete browsing history, cookies and cache regularly





Social Media in the Workplace

- **Social media** are websites and applications that enable users to create and share content or to participate in social networking
- Social media can oftentimes be used appropriately in work, with proper permission and authorization for use
 - Know the written policies and procedures related to social media in your organization
- Be aware of employee behavior expectations in the workplace, and use social media appropriately within the work setting
- Understand the importance of protecting confidential information related to the organization, especially protected health information and data
- Personal time spent on social media during working hours and/or on work devices should be limited or eliminated
- Be aware that all communications sent or received via a workplace device may subject to inspection, review or audit





Social Media in the Workplace (Cont'd)

- Some organizations such as clinics or **vendors** (distributors or manufacturers) of EHRs or other eHealth technology have their own pages where they share events, information or even some daily content
 - This can positively increase the image of the organization, and make it more approachable to the customers
- If your organization approves your using social media in a work setting:
 - Remember to ask a permission to take photos and publish them
 - Post only positive and approved content





Social Media Tips

- Differentiate work accounts and private accounts, e.g., in Facebook you can be present as a private person or a member of an organization
 - Standardly, it is not required to use social media or connect your private accounts to the organization
- When posting something in social media, think before you write
 - It is very hard to delete something once it is posted
- Do not spread rumors, share secured information regarding your organization or provoke others intentionally using social media





Organizational Policies and Procedures Regarding Electronic Documentation

- Your organization will likely have policies and procedures for the following functions relating to documentation, including:
 - Copying
 - Printing
 - Recording
 - Storage
- Learn the policies and procedures, and adhere to them
- For example, do not print paper copies if your facility prohibits this practice; also, this is an ecologically unsound practice at best
- Never make copies of **PHI** (protected health information) or other confidential documents or records for your own later use on media, cloud storage or other drives without express prior written consent





Electronic Documents

- Electronic documents used in the healthcare setting include EMRs, results, patient instructions, referral documents, Medline searches, and prescriptions
- In some instances, such as transfer of a patient to a facility that does not have online records, printing of paper records may be necessary
- Ensure you are familiar with your organization's policies and procedures for printing, scanning and faxing documents, and make sure you comply with all regulations





Electronic Documents (cont'd)

- When using work related websites, keep in mind that just as books are secured with copyrights, electronic material is also protected
- Material that is referenced in presentations, publications or reports, including graphics, should be cited
 - Consult the **Chicago Manual of Style** or other reliable attribution source material for reference methods
 - Credit the original writer and do not claim to have created the material or discovered the topic; this is called **plagiarism**
- Usually material can be saved for your own use, but it cannot be distributed further (exceptions exist for limited educational distribution, but see each site for limitations)
- Organizations might also have read-only access to certain texts, where you can read the text via website, but cannot download or print it
- For casual internet documents, consider whether printing is necessary
 - You may be able to create a PDF file instead
 - If you only need to quickly look at a text, it likely does not require printing
 - There are also good notebook software, and you can make notes and highlights to pdf files too
 - You can still see information, like when you accessed the page (and you can use this when doing citations)

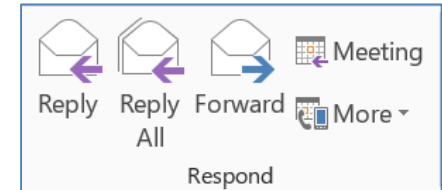




Basic Functions of E-mail

- Examples of email programs:

- Microsoft® Outlook
- Google Gmail
- AOL
- Microsoft® Hotmail



- Although all e-mail services have their own design and details, all e-mail systems have some basic features
- Use email effectively: reply to email by using the reply feature, do not create a new email. It is easier to track the conversation in both ways
 - Use "Reply All" appropriately; do not reply to everyone in a conversation if it would more effectively only be sent to one or more recipients on the email string
- If you start a new topic, create a new email
 - Do not use the old messages for new topic, it might be confusing
- Remember to use appropriate language and consider the receiver: is it your boss, colleague, someone out of the organization? Have you met the recipient, does he/she know you?



Basic Functions of E-mail: Attachments



- Attachments
 - Never attach patient files or records, or protected health information, without sending through organization-approved secure mechanisms
 - Attach small files to the email: pictures, compressed folders, documents
- Be careful when sending/receiving attachments
 - Do not open any suspicious attachments
 - Do not send any suspicious attachments or forward any circular letters





Organizational Email Policies and Procedures



- Each organization has unique policies and procedures regarding sending and receiving emails. It is important to ensure compliance with your organizational policies. Some examples of common policies are:
 - Only use appropriate work email accounts when responding to work-related emails
 - Acknowledging you have received the email and you will be responding in more detail later when you have more time is better than not responding at all
 - Use approved signatures and sign-offs for emails, usually with the organization you represent and contact information clearly identified
 - Ensure there is information about what to do if the message was received in error*
 - Use a short and appropriate SUBJECT that is easily understood by the reader
 - Be sure to change the subject line to keep it up to date or if it is no longer appropriate, for example, after various replies and subject changes
 - Use the highest level of formality that is appropriate for work-related emails
 - Do not use slang words, or inflammatory or inappropriate language
 - If you are unsure about what your email may convey to the reader, save it in a draft folder, wait at least 10 minutes and then review and send if still appropriate
 - Response time frame usually of *24 hours or less*

* **Sample sign-off text:** *The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of this information by persons or entities other than the intended recipient is prohibited. If you are not the intended recipient of this message, or his/her designee, please notify sender and delete this material from your computer.*



Word Processing Programs



- In addition to organizational EHRs and EMRs, many hospital and clinical facilities use **word processing software programs** such as Microsoft Word® or Google Docs. The purpose of these programs is to create, edit, modify and store documents, reports and other correspondence outside of the electronic record.
- Non-EHR/EMR document types may include:
 - Work authorizations
 - Correspondence to individuals
 - Legal documents and responses
 - Responses to requests
 - Claims documentations for insurance purposes
 - Clinical trials documentation
 - Research documents, including charts and graphs
 - Publications
- You should be familiar with the policies and procedures for logging on and off, accessing, using, storing and printing word processing programs, documents and other files



Word Processing Programs (cont'd)

- Documents are produced by using word processing software
- Documents can be produced by using powerful features such as:
 - Auto-correct and spell/grammar-check
 - Multiple languages with translations
 - Tracking changes, allowing multiple users to review and edit a document
 - Ready-made templates and creation of individualized templates for specific structures
 - Macros to automate repeated processes or steps
 - Tables, graphs and spreadsheets for large amounts of data
 - Databases
- Software examples include: Microsoft® Word, OpenOffice™ Writer, Google Docs



Basic Software for Editing Documents

- Product families have software for several tasks, for example Microsoft® Office or Office 365, including:
 - Word for writing/word processing
 - Excel for calculations, graphs and tables
 - PowerPoint for slide shows and multimedia presentations
 - Publisher for publications such as newsletters, brochures and graphical/textual posters
 - Access for database functionality
 - Outlook for email functionality
- Features can be interchanged between programs; for example, you can import a table or a graph from Excel to Word





Spreadsheets & Computing

- **Spreadsheets** are used to organize data into rows and columns
- Converts data to usable tables, graphs and charts
- Can use formulas and functions to perform complex calculations, basic and advanced mathematical functions, and high-level computing such as **pivot tables**
 - A pivot table allows you to extract the significance from a large, detailed data set of rows and columns
- Software examples include:
 - Microsoft® Excel
 - OpenOffice™ Calc
 - Google Docs





Presentations

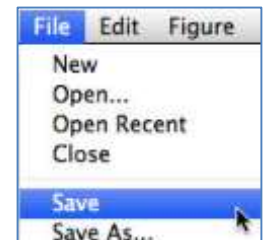
- **Presentation software** helps you create multimedia presentations including visual, auditory and motion effects
 - Can be used for patient or staff education and learning modules, departmental or organizational presentations, informational presentations, business or academic presentations, and more
- The presentation is a series of slides presented manually or automatically timed
 - Animations and transitions, visual effects, sounds and complex graphics can be used
 - Additionally, web clips, video demonstrations, and interactive and educational components can be used
- Examples: Microsoft® PowerPoint, OpenOffice™ Impress, Apple Keynote





Creating, Editing and Storing Documents

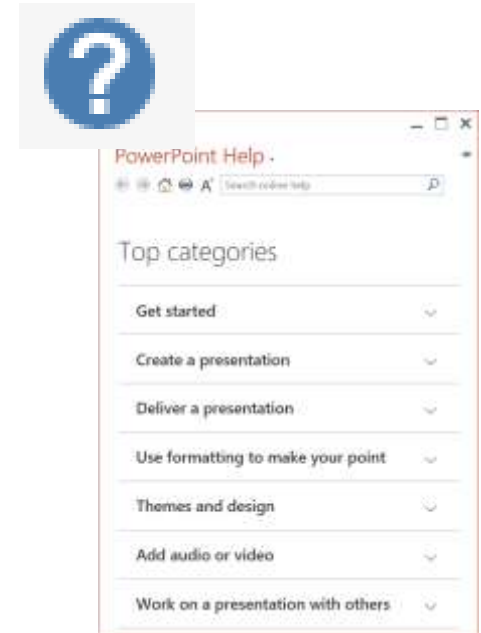
- Always use your organization's official naming convention when creating, saving and renaming files
- If there is no naming convention, use the following as an easy naming shortcut:
 - Short document subject, author's initials and date, e.g., LBSMITH_SOAP_JP_040518.doc
 - Remember that many programs, such as Office, Excel and others, add a dot and an **extension** such as .docx, .xlsx, .pptx, etc. at the end of the document by **default** (automatic setting)
- Remember to make backups of your files on appropriate media if allowed by your organization
- Save a file as soon as it is created, so that it can be easily accessed
 - Remember to save files frequently!
 - Saving or setting up Autosave every five minutes is a good rule of thumb
 - Use version numbering or dates within the naming convention, if it is within your organization's policy
- Things to avoid when naming electronic files
 - Spaces between words; use an **underscore** (_) symbol instead
 - Special characters, like "ä, ö, å" in the nordic languages
 - The following special symbols and signs: ! # % & () / \
 - Dot is reserved for the file type (for example .doc) so avoid any additional dots in your file name
- Keep the files in appropriate folders and name the folders accordingly
 - Structure should be easy to follow





Basic Reference Materials

- Use basic reference materials, manuals and tools for instructional assistance, when uncertain about the correct style and format, and to improve accuracy
- Always use basic reference materials when using any software programs
 - This includes dictionaries, thesauruses, calculators, grammar texts and style guides
 - You should also use training materials or help guides for the programs themselves, if needed
- Most software programs (including all Microsoft® programs) also include an in-program assistance or help function, which includes an area or search bar in which you can look for help on various topics

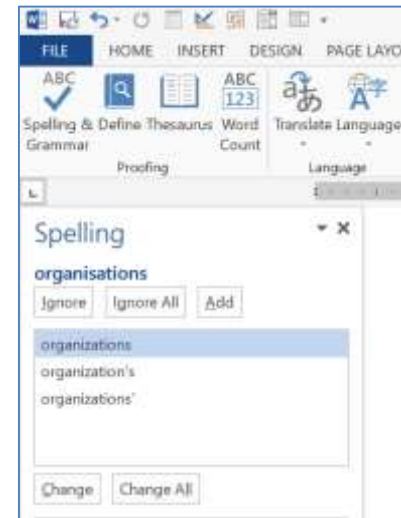




Spell-Check and Reference Materials



- It is efficient to always use spell-checking programs with word processing, spreadsheet and email programs
- In addition, you should also manually read through and recheck your texts before finalizing, publishing or sending them
 - In a formal setting, such as the workplace, careful attention should be paid to grammar, spelling and correct word usage
 - Try to refrain from using informal words, slang or coined words
 - Official text, especially to a superior or to people in other organizations, should be as flawless as possible; this gives a more professional view of the writer
 - Unofficial texts such as short emails or notes to colleagues might be a bit more casual, but make sure the message is still clear and understandable
 - Use professional translations for foreign languages if required for business or protected health information purposes
- Always use an online or handheld dictionary, thesaurus or style guide if you have a question as to spelling, grammar or usage





Unit Review Checklist

- Described ICT and related its importance
- Identified approved uses of the internet, desktop settings, and web-based tools as per your organization's policies and procedures (PL02)
- Explained the appropriate use of social media (PL04)
- Identified the policies and procedures regarding electronic document copying, printing, recording and storage (PL01)
- Stated basic email functions, and comply with organizational email policies and procedures (IL01)
- Differentiated different word processing programs to create, edit, store, and retrieve document files (HL05)
- Identified when to use basic reference materials, manuals and tools (e.g., spell check) for instructional assistance, when uncertain about the correct style and format, and to improve accuracy (HL04)



Unit Review Exercise/Activity

- Regard the following sample email. Jo Blanc would like to communicate with his boss. Please rewrite his email, including subject, etc.

Date: Monday, Jan 29, 2018

From: jo@foundcurrhealth.com

To: maria.h@foundcurrhealth.com

SUBJECT: RE: Question you asked

Patient Jane Doe's weight is still an issue. I can't enter it into the EHR. But I can't talk about that right now. I don't know when the documentation is going live for FC Health Industries. I am too busy to reply right now. Srry! Maybe I'll get back to you Friday.

Best regards,

Jo Blanc, FC Health Industries



Unit Exam



1. Which of the following is not an approved use of the internet at work?
 - a. Social media posts on behalf of your organization
 - b. Searching for medical information
 - c. Communication with a patient
 - d. Research of medical procedures on questionable sites

2. Which of these policies come first and foremost?
 - a. Use advice from friends and colleagues exclusively for correct usage of the internet, desktop settings and web-based tools
 - b. Use your best judgement, regardless of directions from colleagues or your organization for correct usage of the internet, desktop settings and web-based tools
 - c. Always consult your organization's policies and procedures for approved usage of the internet, desktop settings and web-based tools
 - d. Use advise from the internet itself regarding correct usage of the internet, desktop settings and web-based tools



Unit Exam (cont'd)



3. **Fill in the blank.** Material that is referenced in presentations, publications or reports, including graphics, should be _____.
4. True or False. Is it imperative to ensure others know your password on a shared work computer?
 - a. True
 - b. False



Unit Exam (Cont'd)



5. Which of the following is an approved use of printing electronic documentation from your organization?
 - a. Private copies to backup Protected Health Information at home
 - b. Printing multiple copies to ensure redundancies are made
 - c. Printing Electronic Health records regarding the transfer of a patient to a facility that does not have online records
 - d. None of the above

6. Which of the following programs does not aid in the process of spreadsheet development?
 - a. Microsoft® Excel
 - b. OpenOffice™ Calc
 - c. Google Docs
 - d. Microsoft® PowerPoint