

Professional Health Communication and Documentation of Care

Informatics and Communication

Introduction to Informatics and Communications

Informatics and communications work together to ensure access to important information whenever and wherever the client requires it. For this communication to be successful, computers, networks, and people need to be able to interact with a goal of interoperability. We also want to ensure high-quality information is exchanged between and amongst systems, providers, and clients.

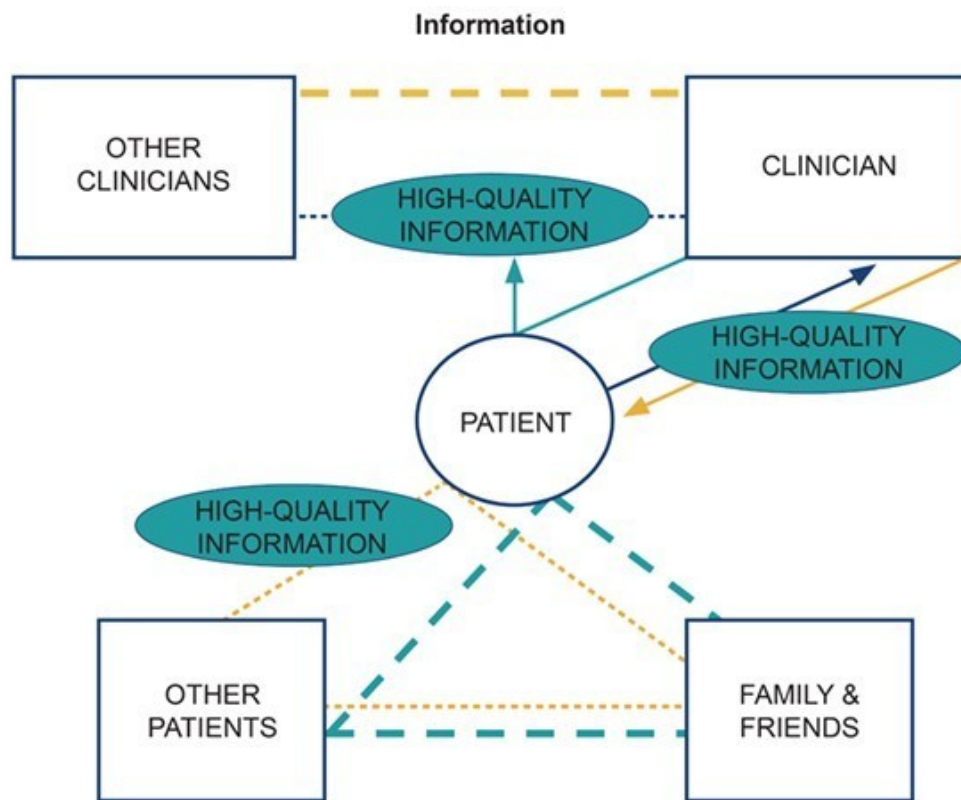
Because there are so many types of computer and communication systems, and because some of these systems have a global reach, consistency in standardized terminology and information exchange is essential.

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- The HITECH Act was developed to promote and expand the use of health information technology, specifically, the use of electronic health records (EHRs) by healthcare providers. The act encouraged hospitals and other healthcare providers to make the change from paper records to EHRs to improve efficiency and care coordination. The other options do not specifically address EHRs.
 - Effective communication in a high-tech environment promotes client-centered, quality care, client safety, prevention of adverse events and to improve health outcomes. It does not promote medical errors but aims to prevent them through clear communication efforts.
 - Meaningful use (not minimal use) of health information, use of electronic health records, use of information exchange systems, and interoperability are ways to improve communication in a high-tech environment. Limits to information sharing can decrease our communication efforts aimed to promote communication and healthy outcomes.

Informatics and Communication

Communication between systems, providers, and clients is essential in health care organizations to support and improve health outcomes. The quality of systems and information exchanged is only as good as its interoperability and the quality of information it contains. The ability to find accurate information within the electronic health record (EHR) for both patient and provider can be hindered by lack of accurate information.

“Perhaps the greatest challenge for both patients and providers is identifying information that is high-quality and which enhances (and does not impede) their interactions.” (Snyder, et al., 2011, p.211).



Snyder, C. F., Wu, A. W., Miller, R. S., Jensen, R. E., Bantug, E. T., & Wolff, A. C. (2011). The role of informatics in promoting patient-centered care. *Cancer Journal*, 17(4), 211–218. <https://doi.org/10.1097/PPO.0b013e318225ff89>

Data Integrity

One challenge of the increased use and availability of electronic health systems is the amount of data that flows through the system. Additional concerns include how that data is collected, vetted, and stored.

Case Study:

Wilma, a medical assistant, is gathering information from Sam, a client of Dr. Goya who is here for a blood pressure check-up. Sam’s medication list includes atenolol, metoprolol, propranolol, and furosemide. When Wilma asks Sam if he still takes these medications, he replies, “I take whatever Dr. Goya prescribes for me.” Wilma smiles and documents “no medication changes” in Sam’s electronic health record (EHR).

When Dr. Goya reviews Sam’s current medications, he is concerned that Sam is taking three similar drugs for hypertension and asks Sam about it. It turns out that after Dr. Goya prescribed

metoprolol, which his insurance does not cover, so alternatively, atenolol was prescribed. The pharmacist called the office to request propranolol since atenolol was recalled by the manufacturer. Luckily, Sam's partner brought his current medications to the appointment, and he was only taking one blood pressure medication, propranolol. Dr. Goya was able to correct the medication list.

This case study reflects an inherent problem with electronic health systems. And that is that all the data is not always accurate and can often be repetitive or changed temporarily for some situations. In addition, sending a medication list, for example, to another provider, will show this client as being on three of the same medications when only one was intended.

It is important to understand these limitations and, whenever possible, ensure the health record is accurate and updated before signing the record.

Common Definitions

These terms represent baseline knowledge used in informatics and communications. You will refer to these terms frequently throughout the learning modules.

Connectivity – ability to use networks to link information and resources to meet user's needs.

Decision support systems – computer applications designed to facilitate decision-making processes, using a set of defined rules to provide those recommendations to users.

Electronic communication – any electronic exchange of information.

Interoperability - the ability of systems or organizations to exchange and make use of information.

Meaningful use – use of electronic health records (EHRs) in a meaningful manner, use of certified EHR technology to improve quality of care, and use of certified EHR technology to submit clinical quality and other measures.

Patient care support systems - components that make up each of the specialty disciplines and associated patient care information systems.

Population health management – term used by healthcare organizations to convey their goal of achieving optimal health outcomes at a reasonable cost.

Reporting – act of using documents in information systems to provide information to users.

Results management – evaluating process outcomes to determine if it's useful or valuable.

Health Information Exchange

The purpose of health information exchange is to improve the sharing of information between health care systems to:

- Avoid readmissions
- Reduce medication errors
- Decrease testing duplication or redundancy
- Improve the diagnostic process

The lack of information can be a major challenge for healthcare systems. Having the ability to request information that may be available in other systems can improve the speed of treatment delivery to clients while reducing potential client discomfort, health care costs, and medical errors.

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- The purpose of health information exchange is to improve the sharing of information between health care systems to avoid readmissions, reduce medication errors, decrease testing duplication or redundancy, and improve the diagnostic process.
 - The purpose of health information exchange does not include maintaining medication adherence.
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Types of Health Information Exchange

There are three types of health information exchange. Each of these types of exchanges has policy, privacy, and confidentiality issues to consider based on how the exchange is initiated and received.

- Direct Exchange
 - Direct exchange allows health care providers direct communication with other providers. This allows for the exchange of the most pertinent requested information quickly based on the needs of the provider. This information can be anything from a discharge summary to laboratory tests. This usually requires specialized software for both healthcare providers and a series of protections for privacy and confidentiality.
- Query-based Exchange
 - Query-based exchange allows a healthcare professional the ability to search accessible clinical sources for a client. With this exchange, it is important to sometimes know basic information like the date of service, facility location, or specific client information. This type of exchange usually occurs when unplanned care is needed.
- Consumer Mediated Exchange
 - Consumer mediated exchange is client-driven. This gives the client the ability to review, collect, and update their own healthcare records for the purpose of

identifying errors, adding missing health information, and providing this information to others as needed to ensure continuity of care.

- Query-based exchange is a type of exchange system that usually occurs when unplanned care is needed, allowing a healthcare professional the ability to search accessible clinical sources for a client.
 - Consumer mediated exchange is a type of client-driven exchange system to review, collect, and update their own healthcare records for the purpose of continuity of care.
 - Direct exchange is a type of exchange system can be anything from a discharge summary to laboratory tests. This usually requires specialized software for both healthcare providers, and a series of protections for privacy and confidentiality.
 - Indirect exchange system does not exist.
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Health Information Technology for Economic and Clinical Health Act

Before the passage of the American Recovery and Reinvestment Act in 2009, software vendors and healthcare organizations were using their own resources to implement and update technology and offer some type of electronic health record for clients. There was no national plan or standardization that vendors were focused on. So, while one electronic medical record may have tracked medications and allergies, another may have been used to store clinical summaries. It was recognized that there needed to be a strategy around implementation and use of technology in healthcare organizations. It was also noticed that using electronic health records could save money, help identify fraud, improve client care, and reduce medical errors.

The American Recovery and Reinvestment Act of 2009 included the **Health Information Technology for Economic and Clinical Health Act (HITECH)**. This offered healthcare organizations guidelines, definitions, and a process for earning additional money for using electronic health records in a meaningful way. For a healthcare organization to get additional funding they could use for purchasing and upgrading their equipment, they would need to meet their criteria for meaningful use. This created a network of vendors, state agencies, and organizations working together to help health care organizations install, configure, and use electronic health records for meaningful use.

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Components of an Electronic Health Record

Communication in healthcare is supported with the use of electronic health records (EHRs). It is now universally accepted that EHRs are comprised of eight components. These components need to be evaluated and certified before a vendor can work with a healthcare organization to implement the software.

The eight components are:

Components of an EHR

1. Health information and data is the client information that clinical decision-making is based on.
2. Results management is the ability to manage test and diagnostic results across the organization.
3. Order entry management allows for health care professionals to request items and services electronically.
4. Decision support is the use of computerized reminders and alerts to offer health screening, preventive health practices, identify drug selection, dosage, and potential adverse reactions.
5. Electronic communication and connectivity include email, web messaging, and an integrated health record within and across settings.
6. Patient support includes self-monitoring tools, telemonitoring, telehealth systems, and patient education.
7. Administrative processes include scheduling, billing, and claims management.
8. Reporting and population health management are the tools and information needed for data collection. This data should be represented in standardized terminology and machine-readable format.

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Accountable Care Organization

In 2015, after many organizations had completed the criteria for meaningful use, it became apparent that more needed to be done to improve interoperability. Remember, interoperability means the ability of computer systems or software to exchange and make use of information and improve client outcomes.