

## **Executive summaries:**

1) More now than ever, with an increasing dependence on health information technology, healthcare organizations need the ability to exchange patient information on a regular basis. There are many departmental systems within a healthcare facility that need the ability to communicate with each other in order to provide patients with the right care. In an environment where time is critical there needs to be ease of exchange of information that can save a patient. This exchange of information amongst systems is called interoperability.

With interoperability, efficient access can be accomplished when utilizing healthcare data that is being provided across multiple platforms. Interoperability is about complex computerized frameworks talking and communicating with each other to provide information from within organizations and across systems. The exchange of data between multiple entities provides users with the necessary information that is needed. During the time of exchange there is simultaneous work within the system that occurs in order to provide the information that is being searched.

Today in current state, interoperability is vital to the survival of any organization and soon maybe the make it or break for technology developers. Government entities like the ONC, CMS, and the VA have noticed the value interoperability brings by fostering a more efficient and effective organization to better provide care to the people it cares for.

2) As the United States health care environment continues to make strides towards value-based care, health care providers have increasingly adopted digital electronic health records (EHR) and electronic medical records (EMR). This proliferation of health information technology (health IT) is more aligned with modern health care goals of quality, patient safety, and integration of care. With that in mind, health IT interoperability poses a substantial obstacle towards achieving a health care ecosystem built on quality.

The current health care environment has seen improvements in health information exchange, but is still far from achieving true interoperability. Financial and technical barriers associated with upfront costs and a lack of standards, respectively, have hindered initiatives to share health data. Fortunately, the Office of the National Coordinator for Health Information Technology (ONC) and the Department of Health and Human Services (HHS) have outlined a number of recommendations and goals to support interoperability efforts, such as upgrading technical capabilities, increasing data sharing transparency, and reducing documentation burden (United States Department of Health & Human Services [HHS], 2018).

3) Interoperability can help advance the efficiency and effectiveness of healthcare with the seamless exchange of information across technology systems. Why is it important that healthcare professionals be able to exchange information? Well, many patients do not see just one doctor for all their needs, they often see two or more depending on what they are going in for. Even if the patient is going to different healthcare professionals for different things, it is imperative that the healthcare provider know the patient's full medical history. Therefore, having paper medical records located at one facility is not ideal for sharing information across a wide spectrum.

Having a way for providers to access a patient's medical history in an online database is ideal. However, it is easier said than done. Though the American Recovery and Reinvestment Act requires that providers use electronic records, it did not require that providers use just one system. Now we find ourselves in a situation where the electronic records are online but in different programs. Interoperability is the ability to exchange data across various software seamlessly. It is also deeper than just the communication of technology systems with one another. There are different characteristics of interoperability that contribute to what makes it so essential. In addition, there are also different levels of interoperability which serve as a measure to how robust the level of success is. Some facilities only find high levels of interoperability to be acceptable. This is a very difficult task, with many different barriers that prevent it from happening. However, if we are able to figure out how to make this work, we will be able to improve the delivery of healthcare.

4) Interoperability in healthcare is an important focus for improving patient safety and quality of care. Interoperability allows health information systems to communicate data with each other and ultimately provide meaningful information to users. Sharing this information has many benefits, but there are costs associated with it. These costs have led to many barriers in full implementation of interoperability. Some of these include issues with financial incentives, trust, and lack of cohesive standards. Despite this, several advancements have been made including fully interoperable systems in large regions throughout the world, but there is still much to do. Currently, many IT developers and healthcare systems are developing tools that promote interoperability among electronic medical systems in the US. One day, healthcare systems will likely overcome the barriers to interoperability, and hopefully, that day will be soon. Until then, work towards full interoperability in healthcare will continue.

5) Interoperability is the promise of a change in healthcare. Once healthcare data specialist figures out how to fully connect a magnitude of information and data systems, the exchange of information throughout the network can change the way healthcare functions today. Interoperability works by syncing the wide variety of health data across different systems, so it is easily obtainable and readable by anyone provider trying to access the information. Interoperability has many benefits such as decreasing health

care errors, costs and potentially reducing the impact of chronic diseases. Interoperability also has several barriers such as the lack of wanting to exchange information and how with the broad types of information on how this data can be interpreted. In this paper, we break down what interoperability is, how it works and the promises and challenges it faces in the future.

6) Interoperability is a fast, efficient process of sharing data between healthcare providers and other healthcare professionals about patients. There are many levels of interoperability, but the highest level will do this securely and allow for multiple systems to communicate with each other. This will reduce cost and mistakes thus improving patient care. Interoperability is still being improved upon, and barriers do exist. As legislators, providers, and other professionals align themselves with the mission of making interoperability a standard, the transferring of healthcare information will take leaps and bounds. Interoperability is about being, and the benefits outweigh the drawbacks.

7) For the previous few years, the Federal IT Task Force has been committed to improving interoperability in the healthcare industry. The way the current healthcare IT landscape is set up, it can be difficult for a clinical provider to get the entire picture of a patient's needs or previous ailments, without going through the lengthy process of finding their previous provider and requesting their documents from that facility. Electronic Health Records (EHRs) in their current state, do not connect well enough with each other for this to happen. Imagine a patient gets transported into the emergency room from an ambulance, patient is unconscious and is not responsive to questions from providers. If the ER doctor could find the patient's name from their driver's license, and look that patient up in a comprehensive EHR to find out if they are allergic to the specific drug he was about to administer, that could save the patient's life. This is the goal and should be the gold standard for the healthcare industry. Some of the new ideas and metrics that are being used are changing the way we administer care, such as Application Programming Interfaces (APIs) and Blockchain technology.