



Southern New Hampshire University

HIM 350 Final Project Guidelines and Rubric

Overview

Electronic health information exchange (HIE) is a budding, dynamic landscape that is emerging to improve data sharing between providers and to empower patients with full access to their health records. HIE enhances the coordination of care by enabling healthcare providers and patients to appropriately access and securely share complete patient health information. Data and information exchange are key factors in delivering quality care and ensuring organizations are effective. The proper, timely sharing of vital patient information can inform better clinical decision making by reducing errors, preventing duplication of tests and decreasing readmissions. There are various models that can be implemented to do this based on cost, interoperability, efficiency, security, and improvements in care delivery. Yet, because of the sensitivity of patient health information, there are several regulations and standards that also need to be considered prior to implementing HIEs. Consequently, health information managers are evaluating the available models for their benefits and impact to all affected stakeholders. In developing your HIE implementation plan, you will consider the different types of HIE models as well as how these models solve the challenges experienced by the case study organization, Memorial Hospital. You will select the technologies, tools, standards, and regulations that you will apply and state the rationale for your choices. You will also determine the means by which you will promote adoption and achieve buy-in for your plan from all relevant stakeholders.

In this assignment, you will demonstrate your mastery of the following course outcomes:

- Develop an effective information governance plan for facilitating the adoption of health information systems and technologies
- Recommend strategies for implementing an appropriate health information exchange model that promotes accurate data capture and exchange
- Develop data management strategies for ensuring secure and compliant collection and use of patient data across an organization
- Determine the impact of health information exchange on data quality and coordination of patient care for informing improvements to the continuum of care

Prompt

Memorial Hospital is the largest trauma hospital in Manchester County. It consists of a main hospital with 1,100 beds and six surrounding outpatient and specialty clinics. Memorial has been having a difficult time sharing information and coordinating the care of its patients throughout the care cycle. Currently, when a patient is discharged from the hospital, there is no way to track the patient's outcomes unless he or she revisits or is readmitted to the hospital. Additionally, when a patient comes into Memorial as a new trauma patient or is transferred from a different hospital, it takes a great deal of time to retrieve the patient's medical information (past medical history, comorbidities, tests received, current medications, etc.). These challenges have led to further issues such as duplicate tests, delays in diagnoses, increased medication errors, more hospital readmissions, and decreased patient satisfaction.

In an attempt to combat these issues, Memorial Hospital recently joined a topic that is leading an initiative to create a new community-wide health information exchange (HIE) network. Greater Manchester County is planning to build the Manchester Health Access Network (MHAN). The MHAN is a nonprofit HIE system

that would be governed by this local community public health topic. The primary objective for establishing the MHAN is to link all healthcare providers in the region and improve care coordination via a secure network of electronic medical record systems. The MHAN would cover ten boroughs with roughly 2.6 million people and would involve 1,950 providers in 12 member hospitals.

The community topic received state funds to complete the project, but it is on a tight budget. The good news is that all the providers in the network already store patient information electronically via electronic medical records (EMRs) that consist of useful portals and interfaces that can quickly and securely transmit information. However, while Memorial Hospital has a functional clinical data warehouse (CDW) and an accompanying data dictionary that describes the collected data types, formats, structures, and usage components, not all of the hospitals in the network do as yet. The existence of the CDW and data dictionary will help facilitate interoperability, which is a key component of the project.

The topic will need to consider additional building blocks for interoperability as well. The standards that MHAN would like to employ to achieve successful interoperability include those set forth by the Nationwide Health Information Network (NHIN). The NHIN was established by the Office of the National Coordinator for Health Information Technology (ONC) to provide recommendations for a common, web-based platform for health information exchange. These recommendations involve securing HIE transmission via services, protocols, standards, specifications and legal agreements such as the following: standardized healthcare classifications and vocabularies like ICD-10-CM and SNOMED CT for homogenizing meanings; HL7 for normalizing structures; laws, policies, and formal procedures for regulating the transport of information; National Institute of Standards and Technology (NIST) standards for controlling security; and application programming interfaces (APIs) for standardizing services. Moreover, MHAN would like to use a master patient index (MPI) to ensure patient information is stored in one record and is not duplicated. This MPI database makes certain that every patient is listed just once within all hospital data systems.

The topic must decide which model is the best to achieve interoperability and stay within budget all while improving the efficiency, coordination, and quality of care. It must also determine what type of data extraction techniques to use. The topic can choose between centralized, federated/decentralized, or hybrid models.

The centralized model will come with a single clinical data warehouse (CDW) that will be maintained by the topic but will also include a health information manager (HIM) from each member organization. With this model, the patient information from each member hospital will be securely stored in and transmitted from the CDW. Additionally, the information will be continually updated through interfaces that connect each member hospital's electronic health record (EHR) to the CDW using unique patient identifiers. This model enables a high level of interoperability. However, it is very expensive to develop and difficult to maintain.

The alternative is a decentralized or federated model. Rather than a single CDW, the federated HIE model is composed of multiple CDWs belonging to each member hospital. Each member hospital provides the central HIE-governing body with patient identifiers unique to the particular hospital, which are then stored in an overall HIE registry. This registry will be filled with various unique types of identifiers based on those given by each hospital. In order to obtain patient data in this type of HIE, the member hospital must send a query to the overall HIE registry. The HIE registry has a record locator that is searchable by patient identifiers, and the central governing body supplies the physical location of the record to the requesting organization. The requesting organization must then request the patient information from the facility that houses the information. The facility will then send the information via some kind of secure service (e.g.,

VPN, email, portal). Although it is quicker to develop, less costly, and easier to maintain, this decentralized model involves several steps to acquire data, is more time-consuming, and is less interoperable than the centralized HIE model. Furthermore, it generates such challenges as increasing the risk of duplicate health records due to CDWs existing at multiple locations and hindering the consolidation of a patient's complete, updated health record.

The hybrid model would be a combination of the two, likely including a centralized CDW interfacing with data from each local remote CDW. The remote CDWs would transmit information to the centralized CDW, all systems would use the same unique identifier, and the patient information would be directly accessible to the representatives of each member hospital. The healthcare leaders on the MHAN central governing topic need to determine the best HIE architecture model to implement. Regardless of which model is chosen, it appears that adopting the MHAN infrastructure is just what Memorial Hospital needs to resolve its current challenges.

Specifically, the following **critical elements** must be addressed:

I. **Introduction**

- A. Based on the details provided in the scenario, **summarize** the issues the hospital is experiencing.
- B. Determine what information and data should be **exchanged** between organizations. Justify your reasoning.
- C. Determine what information and data should **not** be **exchanged** between organizations. Justify your reasoning.
- D. Describe the health information exchange (HIE) **model** you would implement. Justify why you selected this model.
- E. Based on the HIE model you would implement, describe how you will **extract data** you are seeking from the health information system.
- F. Explain how will you analyze and use the data in the **HIE network** to improve patient outcomes.

II. **Interoperability**

- A. Determine the classification **standards and terminologies** necessary for successful interoperability and security.
- B. Describe the **technologies** needed for successful interoperability and security.
- C. Determine the **legal and ethical standards** and regulations that impact a health information exchange.
- D. From a **compliance** standpoint, describe the measures that should be put into place to protect patient information.

III. **Data Dictionary**

- A. Describe the content you included in your **data dictionary**. Support your description with specific examples.
- B. Explain how you would **manage and maintain** the elements in your data dictionary.
- C. Explain the importance of adopting and using **vocabulary standards**.
- D. Explain how the application of the data dictionary to the organization's information system infrastructure can support **data standardization** and exchange.

IV. **Communication**

- A. Describe the stakeholders that will be **affected** by the change.
- B. Based on who will be affected by the change, describe how you will **communicate the impact** of this change to those individuals.
- C. Describe how you will ensure buy-in and **participation** from stakeholders.

Milestones

Milestone One: Draft of Introduction

In **Module Three**, you will create a draft of your introduction for your health information exchange plan. Your introduction will summarize the scenario in the case study, describe the appropriate HIE model for the organization in the case study, and determine what information should be exchanged between organizations. Lastly, you will consider how you will extract data from the HIE and how you will use the data to improve patient outcomes. **This milestone will be graded with the Milestone One Rubric.**

Milestone Two: Draft of Interoperability and Data Dictionary

In **Module Five**, you will create a draft of the interoperability and data dictionary sections of your final project. The interoperability section will cover standards and terminology, a review of the technology, legal and ethical considerations, and issues in compliance. The data dictionary section will cover the development and maintenance of the data dictionary, and you will explain the importance of data and vocabulary standardization. **This milestone will be graded with the Milestone Two Rubric**

Final Submission: Health Information Exchange Plan

In **Module Seven**, you will submit your final project. It should be a complete, polished artifact containing all of the critical elements of the final product. It should reflect the incorporation of feedback gained throughout the course. **This submission will be graded with the Final Project Rubric.**

Final Project Rubric

Guidelines for Submission: Your health information exchange plan should be 6 to 8 pages in length with 12-point Times New Roman font and double-spacing. Any citations should be in APA format.

HIM 350 Case Study

Critical Elements	Exemplary (100%)	Proficient (85%)	Needs Improvement (55%)	Not Evident (0%)	Value
Introduction: Summarize	Meets “Proficient” criteria and summary demonstrates an advanced ability to extract a thorough and accurate description from a scenario	Summarizes the issues the hospital is experiencing based on details provided in the scenario	Summarizes the issues the hospital is experiencing based on details provided in the scenario, but response is cursory or contains inaccuracies	Does not summarize the issues the hospital is experiencing	5
Introduction: Exchanged	Meets “Proficient” criteria and justification demonstrates an insightful awareness of the information and data that should be shared between organizations	Determines what information and data should be exchanged between organizations, providing justification	Determines what information and data should be exchanged between organizations, but response is cursory or illogical or lacks justification	Does not determine what information and data should be exchanged between organizations	4.5
Introduction: Not Exchanged	Meets “Proficient” criteria and justification demonstrates an insightful awareness of the information and data that should not be shared between organizations	Determines what information and data should not be exchanged between organizations, providing justification	Determines what information and data should not be exchanged between organizations, but response is cursory or illogical or lacks justification	Does not determine what information and data should not be exchanged between organizations	4.5
Introduction: Model	Meets “Proficient” criteria and justification provides keen insight into why the selected health information exchange model is the best fit for the organization	Describes a health information exchange model to implement, justifying why this model was selected	Describes a health information exchange model to implement, but description is cursory, contains inaccuracies, or lacks justification	Does not describe a health information exchange model to implement	7.5
Introduction: Extract Data	Meets “Proficient” criteria and description illustrates a sophisticated explanation of data extraction in relation to specific health information exchange models	Describes how sought-after data would be extracted based on the selected health information exchange model	Describes how sought-after data would be extracted based on the selected health information exchange model, but description is cursory, contains inaccuracies, or lacks connections to selected HIE model	Does not describe how sought-after data would be extracted	7.5
Introduction: HIE Network	Meets “Proficient” criteria and makes cogent connections between the benefits of health information exchange networks and improved patient outcomes	Explains how data will be analyzed and used in the HIE network to improve patient outcomes	Explains how data will be analyzed and used in the HIE network to improve patient outcomes, but explanation is cursory or missing elements	Does not explain how data will be analyzed and used in the HIE network to improve patient outcomes	4.5

Interoperability: Standards and Terminologies	Meets “Proficient” criteria and determination clearly articulates the standards and terminologies necessary for successful interoperability and security	Determines the classification standards and terminologies necessary for successful interoperability and security	Determines the standards and terminologies necessary for successful interoperability and security, but response is cursory, contains inaccuracies, or is missing components	Does not determine the standards and terminologies necessary for successful interoperability and security	4.5
Interoperability: Technologies	Meets “Proficient” criteria and provides keen insight into technology and its role in supporting successful interoperability and security	Describes technologies needed for successful interoperability and security	Describes technologies needed for successful interoperability and security, but description is cursory or lacks connections between technology and interoperability and security	Does not describe technologies needed for successful interoperability and security	4.5
Interoperability: Legal and Ethical Standards	Meets “Proficient” criteria and response provides keen insight into the complexities of standards and regulations that impact a health information exchange	Determines the legal and ethical standards and regulations that impact a health information exchange	Determines the legal and ethical standards and regulations that impact a health information exchange, but response contains inaccuracies or is missing components	Does not determine the legal and ethical standards and regulations that impact a health information exchange	4.5
Interoperability: Compliance	Meets “Proficient” criteria and demonstrates a sophisticated awareness of the measures necessary for protecting patient information	Describes from a compliance standpoint the measures that should be put into place to protect patient information	Describes from a compliance standpoint the measures that should be put into place to protect patient information, but description is cursory or contains inaccuracies	Does not describe the measures that should be put into place to protect patient information	4.5
Data Dictionary: Data Dictionary	Meets “Proficient” criteria and examples provide keen insight into why specific content was included in the data dictionary	Describes the content that is included in the data dictionary, supporting description with specific examples	Describes the content that is included in the data dictionary, but description is cursory or examples are not appropriate or are nonexistent	Does not describe the content that is included in the data dictionary	4.5
Data Dictionary: Manage and Maintain	Meets “Proficient” criteria and response demonstrates an insightful awareness of what is required for management and maintenance of data dictionary content	Explains how elements within the data dictionary would be managed and maintained	Explains how elements within the data dictionary would be managed and maintained, but response is cursory or contains inaccuracies	Does not explain how elements within the data dictionary would be managed and maintained	4.5

Data Dictionary: Vocabulary Standards	Meets “Proficient” criteria and provides keen insight into the importance of vocabulary standards adoption and use	Explains the importance of adopting and using vocabulary standards	Explains the importance of adopting and using vocabulary standards, but explanation is cursory or contains inaccuracies	Does not explain the importance of adopting and using vocabulary standards	7.5
Data Dictionary: Data Standardization	Meets “Proficient” criteria and demonstrates a complex grasp of the supportive role that data standardization plays within an organization’s information system infrastructure	Explains how the application of the data dictionary to the organization’s information system infrastructure can support data standardization and exchange	Explains how the application of the data dictionary to the organization’s information system infrastructure can support data standardization and exchange, but explanation is cursory or contains inaccuracies	Does not explain how the application of the data dictionary to the organization’s information system infrastructure can support data standardization and exchange	4.5
Communication: Affected	Meets “Proficient” criteria and all stakeholders affected are comprehensively portrayed	Describes the stakeholders that will be affected by the change	Describes the stakeholders that will be affected by the change, but description is cursory or lacks clarity	Does not describe the stakeholders that will be affected by the change	7.5
Communication: Communicate the Impact	Meets “Proficient” criteria and response demonstrates considerable thought and contemplation regarding how the impact of the change will be communicated to all stakeholders	Describes how the impact of the change will be communicated to stakeholders	Describes how the impact of the change will be communicated to stakeholders, but description is cursory or lacks clarity	Does not describe how the impact of the change will be communicated to stakeholders	7.5
Communication: Participation	Meets “Proficient” criteria and details communicate a unique perspective on how to ensure buy-in and participation from stakeholders	Describes how to ensure buy-in and participation from stakeholders	Describes how to ensure buy-in and participation from stakeholders, but description is cursory or lacks clarity	Does not describe how to ensure buy-in and participation from stakeholders	7.5
Articulation of Response	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy-to-read format	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	5
Total					100%