

Case Study, Stage 1: Process Analysis

Before you begin this assignment, be sure you have read the "UMUC Family Clinic Case Study" and your Week 1 and Week 2 readings, which discuss Electronic Health Record (EHR) functionality and Process Workflow Analysis and Mapping.

Purpose of this Assignment

This assignment gives you the opportunity to apply your analysis skills to model a health care business process in an ambulatory setting. Modeling the process as it exists (and as it will exist) will aid in the analysis, selection and implementation of the EHR system for the medical practice. In this assignment, you will develop 2 process maps (AS-IS and TO-BE) for the patient visit clinical process workflow. This assignment addresses the following course outcome to enable you to:

- Evaluate the organizational environment in the health care industry to recognize how technology solutions enable strategic outcomes.
- Analyze the flow of data and information among disparate health information systems to support internal and external business processes.

Family Clinic Medical Practice

In order to apply technology to a process, the process must be thoroughly understood and models are used for this purpose. The model also supports business process analysis and redesign when the process is deemed to be inefficient or ineffective. In addition, models are used to design the "TO-BE" process that describes the desired end state after the technology solution is developed.

In analyzing and improving clinical processes, one should consider the following questions:

- Are administrative processes organized, efficient, and well documented?
- Are clinical workflows efficient, clearly mapped out, and understood by all staff?
- Are data collection and reporting processes well established and documented?

For your Stage 1 Project for the Case Study, you will develop model of the patient visit process used at the UMUC Family Clinic. You will create a model of that process which defines in detail the steps in the process as they are done today. Then, you will create a model of the proposed new process, as it will be performed after an EHR system (IT solution) is implemented.

Assignment

For this assignment you will:

1. List at least three objectives or goals that Dr. Martin has, and briefly explain how an EHR system can help him with each objective. Note that a minimum of 4 objectives or goals are needed to earn the full points.
2. Next you will model the patient visit process as it is currently performed at the UMUC Family Clinic; this is the AS-IS Process. Draw a process model to show the major steps in the patient's visit to the UMUC Family Clinic from the time they arrive until they leave. This patient is a returning patient, will receive a prescription based on earlier blood test results sent from the laboratory, and his insurance company will be billed for the visit. You must refer to the AS-IS process as described in the case, cover all the current steps and be careful not to oversimplify. The objective here is to correctly map the current state of the process, so the improvements offered by the TO-BE process (Item 3 below) are clear. "Patient enters --> gets

prescription --> leaves office (insurance company is billed)" is not a reflection of the current state.

3. Then you will model the way that you expect the new patient visit process to function after a technology solution (EHR System) is implemented and the process is improved; this is the TO-BE Process. **NOTE: We are NOT specifying the specific technology in the TO-BE Process. Identifying the specific technology will be part of a later stage assignment.**

As you develop your models, review the Week 2 readings on processes, process analysis and process modeling. You will use flowchart symbols to indicate process steps, decision points, etc. The flowchart symbols to be used and examples of how to use them to illustrate the work flow can be found in the "Flowchart" lecture. You may use Microsoft Word, Excel or Power Point to develop your process models. If you use another product, it is your responsibility to ensure it can be read using the Microsoft Office products.

Tools for Creating the Models

The following are two URL's that have a more detailed description of Flow Charting and its uses:
<http://www.hci.com.au/hcsite2/toolkit/flowchar.htm>

<http://asq.org/learn-about-quality/process-analysis-tools/overview/flowchart.html>

To create a flow chart in Word 2007 and 2010: <http://www.youtube.com/watch?v=RkN0dekcsmw>

To create a flow chart or process map in Excel: http://www.youtube.com/watch?v=9_R73RVfHl0

To create a flow chart in PowerPoint: <http://www.youtube.com/watch?v=s8erOL-3Bho>

Submit your Stage 1 paper via your Assignment Folder Stage 1 as an attached document (or documents) with **your last name included in the filename(s)** (LASTNAME_Stage1).

Note: Your models will be evaluated on whether they are applicable to the patient visit process, all major steps in the AS-IS and TO-BE processes are included and correctly modeled, and they are appropriate to the UMUC Family Clinic. Your overall paper will be evaluated on whether or not you correctly incorporated the course concepts from the readings and addressed all parts of the assignment. If you use external resources, be sure to cite and reference them correctly in APA format. Use the Rubric below to be sure you have covered all aspects.

GRADING RUBRIC:

Criteria	90-100% Far Above Standards 9-10 Points	80-89% Above Standards 8 Points	70-79% Meets Standards 7 Points	60-69% Below Standards 6 Points	< 60% Well Below Standards 0-5 Points	Possible Points
Identification and Explanation of Objectives	At least <u>four</u> appropriate objectives or goals are identified, and how an EHR system would help each is fully explained; explanations demonstrate understanding of course concepts, sophisticated analysis and critical thinking.	Three or more objectives or goals are identified and clear explanations are given as to how each will be improved with an EHR system; explanations demonstrate understanding of course concepts, analysis and critical thinking.	Three or more objectives or goals are identified and adequately explained as to how an EHR system will help with each; demonstrates some understanding of course concepts, analysis, and/or critical thinking.	Fewer than three objectives may be presented; and/or they may not apply to the case study; and/or explanations may be lacking in demonstration of understanding of course concepts, analysis, and/or critical thinking.	Too few or no objectives are identified and/or explanations are not provided.	10
Model Complete- ness	27-30 Points Both the as-is and to-be models present all of the steps in the process in detail.	24-26 Points The as-is and to-be models present most of the steps in the process and provide some detail.	21-23 Points The as-is and to-be models present the major steps.	18-20 Points The as-is and to-be models are incomplete or inadequate to demonstrate a complete process.	0-17 Points Only one model presented or very few process steps are included.	30
Organization of Steps	27-30 Points Steps in the process are organized in a logical flow with the steps clearly labeled and demonstrate analysis and critical thinking.	24-26 Points Steps in the process are organized in a logical and well organized flow with the steps labeled.	21-23 Points Steps in the process are organized in a logical flow with steps labeled.	18-20 Points Steps may not be organized in a logical flow or may be lacking in demonstration of analysis, and/or critical thinking.	0-17 Points Process steps are not organized at all, or only one model is presented.	30

Model Presentation	18-20 Points Models are very professionally presented; use a logical and easily understandable structure, and spelling is correct.	16-17 Points Models are professionally presented; use a logical structure, and spelling is correct.	14-15 Points Models are presented well; use a logical structure, and spelling is correct.	12-13 Points Models are not professionally presented, and/or contain several spelling errors.	0-11 Points Models are extremely poorly presented and do not convey the information or only one model is presented.	20
Report Format	9-10 Points Report is very well organized and is easy to read. Very few or no errors demonstrate correct sentence structure, grammar, and spelling; written in third person and presented in a professional format; any references used are properly cited and listed in APA style.	8 Points Report reflects effective organization; may have a few errors in sentence structure, grammar, and spelling; written in third person and presented in a professional format; any references used are properly cited and listed in APA style.	7 Points Report is organized and may have some errors in sentence structure, grammar and spelling. Report is written in third person; any references used are properly cited and listed in APA style.	6 Points Report is not well organized, and/or contains several grammar and/or spelling errors; and/or report is not written in third person; and/or any references used are not properly cited and listed in APA style.	0-5 Points Report is extremely poorly written; and/or contains many grammar and/or spelling errors; and/or does not convey the information	10
					TOTAL Points	100

UMUC Family Clinic Case Study

In 1980, the UMUC Family Clinic was opened in a growing family area near UMUC, Maryland, by Dr. Tom Martin, a University of Maryland graduate after he retired from the US Navy. It is a small internal medicine medical practice. Dr. Martin has been the owner and manager of the medical practice. He has two nurses, Vivian and Manuella, to help him. Usually, one nurse takes care of the front desk while the other nurse assists the doctor during the patient visits. They rotate duties each day. Front desk duties include all administrative work from answering the phone, scheduling appointments, taking prescription refill requests, billing, faxing, etc. So if on Monday Vivian is helping the doctor, then it is Manuella who takes care of the front desk and all office work. The two nurses are constantly busy and running around and patients are now accustomed to a minimum 1-2 hour wait before being seen. And, if one nurse is absent, the situation is even worse in the clinic. The clinic has three examination rooms so the owner is now looking into bringing a new physician or nurse practitioner on board. This would help him grow his practice, provide better service to his patients, and maybe reduce the patients' waiting time. Dr. Martin knows that this will increase the administrative overhead and the two nurses will not be able to manage any additional administrative work. He faces several challenges and cannot afford to hire any additional staff, so Dr. Martin has to optimize his administrative and clinical operations. The practice is barely covering the expenses and salaries at the moment.

Dr. Martin's practice operation is all paper-based with paper medical records filling his front office shelves. The only software the doctor has on his front office computer is a stand-alone appointment scheduling system. Even billing insurance companies is done in a quasi-manual way. For billing insurance, the front office nurse has to fax all the needed documentation to a third party medical billing company at the end of the day. The medical billing company then submits the claim to the insurance company and bills the patient. The clinic checks the status of the claims by logging into the medical billing system, through a login that the medical billing company has provided the clinic to access its account. There is no billing software installed at the practice, but the nurses open Internet Explorer to the URL of the medical billing company and then use the login provided by the third party medical billing company. Of course, the medical billing company takes a percentage of the amount that the clinic is reimbursed by the insurance. Although the medical practice has the one PC with the scheduling software and an internet connection, it does not have a Web site or any other technology, and essentially still operates the same as it did in 1980.

One problem that is immediately noticeable is that there is no quick way to check patients in, and if the nurse is on the phone while a patient tries to check in, then the patient has to wait until she has completed her call. The doctor could be also waiting for the patient to be checked in, wasting valuable doctor time. Also many patients experience long waits on the phone when they are trying to schedule an appointment, while the nurse is checking in patients or responding to another patient's request in the office. Every year, the clinic requires its patients to complete a form with their personal and insurance information, rather than have them just verify what is on file. This annoys some of the parents when they have to fill out all this paperwork and take care of their sick young child in the waiting room.

When a patient's laboratory test results are received in the office, the paper copy has to be filed in the patient's folder. Lost and misfiled reports are a big concern to Dr. Martin, as is his inability to quickly and easily share patient data when he makes a referral to a specialist. He feels he and his staff are spending too much time handling paper and not enough time improving patient care. All of the medical records, lab results, and financial and payroll accounts are kept on paper, so there is not a quick way to look up a patient's history or current prescriptions during office visits or when the doctor gets a call while he is away from the office. At the beginning of each day, the nurses pull the files for all patients who have appointments scheduled for that day. But the clinic also accepts walk-in patients.

At a recent medical conference Dr. Martin learned about how Electronic Health Records (EHR) can be shared among health care providers to improve patient outcomes. After attending several demonstrations by the different vendors, ClinicalWorks, AthenaHealth, etc., he realized how inefficiently

his practice is running and realized all the opportunities that EHR systems can bring. He recognizes all the benefits of moving to electronic medical records but feels very overwhelmed on how to start, or what to do. He is also concerned about disruption to his practice which may negatively affect his patients' care experience. Moreover, neither the doctor nor the nurses have any knowledge or experience when it comes to information technology. Upon the recommendation of a fellow doctor, Dr. Martin has decided to hire an independent EHR Consultant, to help him select the best EHR for his practice. His friend also advised him that he should not just buy any package from a vendor but have the EHR consultant analyze the workflow processes at the practice first, then optimize them, and then look at the EHR systems. The new EHR system needs to work with the optimized processes of his practice. Dr. Martin needs to get his staff's buy-in and involvement in the process from Day 1, if the EHR adoption process is to succeed. Dr. Martin realizes that EHR adoption may add significant costs to his practice, which he cannot afford. Therefore, he will go for the EHR adoption at this point only if he can find an affordable system.

Based on his fellow doctor's recommendation, Dr. Martin has contracted with an independent EHR consultant, who is not associated with any vendor, to advise him through this process. Throughout this course you will be the EHR consultant.

Dr. Martin has several strategic goals in mind that he shares with you during your first meeting with him as his consultant. For one, he would like to see his medical practice operate more efficiently and make some financial profit that he could reinvest into the clinic in order to upgrade and expand it. In a few years, he will need to invest some funds in a major renovation, primarily in the examination rooms and the waiting area. If he had extra money, he could also rent the apartment next to his clinic and open up the space to make a larger clinic. If he did that, he could also expand the clinic into a 3-physician group practice and maybe rent out some space to a physical therapy physician and generate some additional income. After much discussion with fellow MDs, he realizes that he can use technology to improve the quality of care, safety, and financial management decisions of his practice, while also meeting the legal and regulatory requirements for health care and health care systems. So, implementing an EHR system for these purposes has now become another strategic goal for the practice.

Your task is to help Dr. Martin understand the process that occurs during a patient visit to the practice, how that process should be improved to make it more efficient, and then recommend a certified EHR system for him to implement. You are not expected to solve all of the problems identified or address all improvements that could be made at the UMUC Family Clinic.

The following is an example of how a process is identified and optimized using a technology solution: Last year, the medical practice had no effective way to schedule appointments. The front desk nurse used a paper calendar to write in appointments. Obviously, as appointments were cancelled and re-scheduled, the paper calendar became almost unreadable. It was also taking a long time for the nurse to record the patient name, phone number and other critical information. That was when Dr. Martin and his nurses decided to implement the scheduling system on the PC. Now, the patients are all listed in the system, with the pertinent information, and the scheduler can quickly search for an open time and enter the patient's appointment on the schedule. This has significantly improved the scheduling process, but has nothing to help with all of the other activities involved with a patient visit to the Clinic.

~~**Note:** As you approach the case study assignments, you will find it helpful to think about your own experiences with a medical practice. Making a trip to a small medical practice may help you think about the processes, challenges, and opportunities.~~

STAGED ASSIGNMENTS

The case study and assignments address the Course Outcomes to enable you to:

- Evaluate the organizational environment in the health care industry to recognize how technology solutions enable strategic outcomes
- Analyze the flow of data and information among disparate health information systems to support internal and external business processes