Process Analysis Results and Recommendations

3 – 5 Days Pre-arrival Work List
Ambulatory Care Department

By:
Anwar Effendi
Yu-Li Huang
Yien T. Lung
Hwee Woon Tay

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# Table of Contents

**EXECUTIVE SUMMARY** ........................................................................................................... 2

**INTRODUCTION AND METHODOLOGY** .................................................................................. 3
  - ROLES/NAMES OF PROGRAMS AND OPERATIONS ANALYSIS .................................................. 3
  - BACKGROUND AND ENVIRONMENT AFFECTING THE PROJECT ............................................... 3
  - PURPOSE OF PROJECT ............................................................................................................... 3
  - GOALS AND OBJECTIVES ....................................................................................................... 3
  - SCOPE OF PROJECT ................................................................................................................. 4
  - METHODOLOGY ..................................................................................................................... 5
  - TOOLS FOR ANALYSIS ........................................................................................................... 6

**CURRENT SITUATION OVERVIEW** ......................................................................................... 7
  - DEPARTMENT DESCRIPTION .................................................................................................... 7
  - MAJOR WORKLOAD TYPES ..................................................................................................... 7
  - STAFFING SUMMARY ............................................................................................................. 7

**ANALYSIS AND RECOMMENDATIONS** .................................................................................... 8
  - CURRENT STATE DOCUMENTATION ..................................................................................... 8
  - PROBLEM STATEMENT AND ROOT CAUSE ANALYSIS .......................................................... 12
  - RECOMMENDATIONS ............................................................................................................ 12

**PROPOSED ENVIRONMENT OVERVIEW** ............................................................................... 23
  - RECOMMENDATION SUMMARY ............................................................................................ 23

**ACTION PLAN** ......................................................................................................................... 24

**APPENDIX A** .......................................................................................................................... A1
  - SURVEY SAMPLE .................................................................................................................. A1
  - SURVEYS FOR THE CLINICS ................................................................................................. A2

**APPENDIX B** .......................................................................................................................... A5
  - CLINICS VISIT SUMMARY ..................................................................................................... A5
EXECUTIVE SUMMARY

Ambulatory Care currently has approximately 200 clinics both onsite and offsite. 3-5 day Pre-Arrival Preparation for the patients is a system that was devised to save the department on write-offs that amounted to as much as $4 million per annum. These costs arise due to inconsistent policies and procedures, no common resources or job aides, paper intensive, lack of automation, and no tracking mechanism. Currently, Ambulatory Care is still in the transition stage of revising the new Enterprise Wide Scheduling (EWS) system across all 200 clinics, and at the same time, implementing the 3-5 day preparation into EWS.

The scope of this project undertaken by Team 2 involves analyzing the usage of the 3-5 day preparation undertaken by clinic clerks. Team 2 is also responsible for documenting a sample percentage of the number of clinics that do not use the 3-5 day preparation due to the fact that they might still be using CLS system.

Collection of data for our analysis took 4-5 weeks, through various processes such as interviewing the clinic clerks, observing their usage of the 3-5 day registers, and the use of surveys. There were 10 visits to different clinics, out of which 6 clinic uses the 3-5 day registers; out of all the clinics under Ambulatory Care, we received a total of 18 returned surveys. The sample size is small due to time constraint, but we completed our analysis, and drew up a recommendation as detailed in the report.

In conclusion, we recommend a change in the current paper-based register system, to meet the objective of saving costs (of paper and delivery), and to standardize the 3-5 day preparation for all current and future users. An online work list should be used for all 3-5 day preparation. The work list is an integration of all databases used in the 3-5 day preparation.

Features in the work list include:
- Functions in the work list interface will be customized for each clinic.
- Automated database generated list of patients that requires both verifications and reminder calls.
- Automated referral/authorization verification with the integration of PM, EWS, Imaging, and MCA.
- Automated patient outstanding balance checking from IDX system.
- Standardized comments for reminder calls and referral/authorization calls.

The proposed interface only communicates the idea of proposed solution. MCIT would need to further improvise the interface for actual application in Ambulatory Care Clinics.
INTRODUCTION AND METHODOLOGY

Roles / Names of Program and Operations Analysis Staff

Client Manager - Matt Plachta, Director of Infrastructure Support and Systems, Ambulatory Care
Project Director – Richard J. Coffey, Director of Program and Operations Analysis
Project Coordinator – Sandra E. Commager, Senior Management Engineer.
Project Staff – Anwar Effendi, Yu-Li Huang, Yien T. Lung, Hwee Woon Tay.

Background and Environment Affecting the Project

Cashiers, receptionists and physicians are responsible for inputting or altering existing data in the registers that are currently stored in three different database computer systems. These data are used for reminding patients about appointments and overdue balances. In addition, they are used for gathering insurance information and referral forms.

One unsatisfactory issue that would arise when clinic clerks are about their work is that certain related data can only be accessed from specific systems' workstations, but not all at the same time. One other obvious problem of the system is that extra labor needs to be used in order to combine the information from the three different database systems. A third problem is that last minute changes are frequently not reflected on the printed register in real-time, or if they are, multiple copies must be re-printed and distributed. There is also a high probability of human error in manual inspection of the clinic register. One most important problem is that there is negative feedback about patients' service, specifically with regards to the issue of receiving multiple phone calls from the clinics for various reasons.

Purpose of Project

The Purpose of the Project is to:

1. Document all data categories in the clinic register for 3-5 day patient pre-arrival activities
2. Document all current uses of the clinic register
3. Determine a basic and general workflow of data in clinic register
4. Develop recommendations of how to improve the current state in order to minimize non-value added tasks

Goals and Objectives

The objectives of the project are to standardize the work processes of the current register system and evaluate the current uses of the printed clinic registers. A major part of the project was to document the
current work practices of the clinics under Ambulatory Care. Team 2 would also provide detailed information on our recommendation that automates work lists and arrival screens to achieve the objective of standardizing the processes for use throughout all clinics.

To determine best practices and systems flexibility, Team 2’s strategy involved interviewing the clerks that use the register through the surveys or questionnaires. By observing how the clerks use the registers, we analyzed the current situation, and recommend possible interface to standardize the pre-arrival preparation.

These objectives of standardizing the pre-arrival activities can be achieved by the following ways:

1. Preserving continuous information flow to keep the users of registers updated on real-time changes that occur constantly.

2. Maintaining consistency of data presented in the register as to the data in the main database.

3. Developing a user-friendly register that enables users of registers to draw information from different computer systems at the same time.

4. Determining efficiency in work processes to relieve workloads of existing register users to maximize utilization of clerical workforce

5. Improving the quality of customer service by reducing the number of calls, and focusing on providing well-communicated information to the patients.

**Scope of Project**

I. Project Scope

Ambulatory Care has more than 200 clinics both onsite and offsite. Team 2 will be responsible for collecting as many data as possible about the current state of the 3 and 5 day clinic register system of as many clinics permissible.

Some clinics perform certain functions that other clinics may not. Some of the functions involve mailing appointment reminders to patients 2 weeks in advance, calling the patients from the billing offices, registration offices as well as checkout counter of each clinic for various different reasons. However, the scope of the project is only focused on 3 and 5 day preparation specifically with the use of registers that are used to prepare the patients for their clinic visits.

Below are listed the proposed methodology of gathered information:

(I) Interviewing for process flow

- Understanding the procedures taken by clerks to check for data in the system.
- Observing the process and frequency of clerks manually calling patients.
- Understanding the volume of preparation clerks have to process on a daily basis
- Collecting individual process flow from each clinic in order to assess the extent of standardization necessary.
(II) Observing data flow
- Checking into Med-Web for referral status.
- Checking the Imaging system for insurance details.
- Checking into the IDX system for patient’s account balances.
- Checking various comments made by clerks or physicians.

The information from this report is to be used by any future technical staff for enhancing any application that Ambulatory Care is currently using. The envisioned application is to lessen the clinic receptionists’ workload. Team 2 will develop a 3-5 day Pre-Arrival Work prototype interface. The objective of this interface is to source for important and relevant patient information to serve the following functions:

1) Remind the patient of an appointment
2) Remind the patient to bring the referral and insurance
3) Remind the patient about possible overdue payments in their account
4) Understanding how clerks handle other pieces of relevant and non-relevant information.
5) Perform unique clinic tasks

All this information is obtained from three major computer systems: Enterprise Wide Scheduling system (EWS), Patient Management (PM), and the Managed Care Applications (MCA) system. The EWS computer system is used to schedule appointments for patients. PM, a subset of HealthQuest, is used to register new patients to the system and it is also the archives of all the patient’s history. MCA, a subset of IDX, is used to view referral information. IDX is used for professional billing and physician billing in the 3-5 day preparation.

II. Project Boundaries

Team 2 will be responsible for collecting and documenting as many data as possible about the current state of the 3 and 5 day clinic register system. The same day patient registration in the clinics is another scope that is currently dealt by one other team. The individual and unique functions performed by each clinic are also outside the scope of Team 2’s project.

Methodology

I. Observations

There are three major observations that were conducted:

1. Observe clerks combining information from three different databases system until the clinic register was placed in the appropriate place for the users.

2. Observe register users to complete the task such as calling patients for outstanding balances, appointments, etc until all the tasks are finished.

3. Observe and develop the task process flowchart of 3-5 day register for every clinic that Team 2 visits.

From the visits to the 10 clinics scheduled, we derived a unique workflow for each clinic. The clinic clerks vary in the methods of checking the pre-arrival registers, and all of them who are using EWS obtained similar results. From our observation, we derived a general workflow of how clinic clerks are
currently using the EWS as presented in the appendix. Together with a training manual for clinic clerks that was provided by our coordinator, we arrived at a basic interface application that we felt would be useful to clinic clerks at the same time standardizing the registers.

II. Personnel Interviews

The team interviewed various personnel whose responsibility is directly related to the database system in the project scope. The team considers the most important source of information to be that from people who have been using the system in their daily duties. Since the clerks have the most exposure to the system, they would have more insights into the advantages and disadvantages of the current system. Out of the 10 clinics visited, 6 were using EWS system and the other 4, CLS system. Because of the difference database system, standardization was an issue that would be resolved when all the clinics were to cross the transition phase and eventually use EWS for their appointment scheduling system. We also met with a representative from the Information Technology Department of the University of Michigan's Health system, to gain a deeper understanding of the workings of EWS at the management level.

III. Surveys

The team explored the option of a survey to reach out to the other clinics that were not available for clinic visits. Together with Team 1, we compiled a survey and finalized details with our Coordinator and Client. The survey was sent out to all 200 clinics under the Ambulatory Care, however only 16 clinics responded. Hence Team 2 was not able to collect a better sample average that would significantly reflect the current state of the 3-5 day pre-arrival scheduling system. The individual response from each of the 16 clinics is detailed in the appendix.

Tools for Analysis

I. Microsoft Visual Basic

The team developed a prototype of Microsoft Visual Basic application that would enable the application users to combine information from what is currently obtainable out of three different database systems. One of the proposed features of the application includes specific task windows for specific users that will list all the information needed for users to do the tasks. Details of the recommended interface are found in the Recommendation section.

II. Microsoft Access Database

The team developed a small database system in Microsoft Access that is directly connected to Visual Basic application. The purpose is to demonstrate a conceptualization of the proposed system by consolidating data from current database systems. This data consolidation will facilitate the standardization of the pre-arrival procedures for system enhancement.

III. Microsoft Excel Spreadsheet

The team documented a unique flowchart for each clinic visited that uses EWS, and 3-5 day pre-arrival preparation. Using the flowcharts from 6 different clinics out 11 clinics visited, we developed a general workflow that we believe clinics generally use.
CURRENT SITUATION OVERVIEW

Department Description

Ambulatory Care has more than 200 clinics both onsite and offsite. Most of the onsite clinics are special treatment clinics while most of the offsite clinics are Primary Care Physicians (PCP). Each clinic operates independently from the other clinics. Specific tasks and treatments for patients vary by clinic.

Major Workload Types

Ambulatory Care clinics handle 1.2 million patients every year. Different clinics have different numbers of patients depending on the service and treatments provided. There are several processes performed in the clinics, one of them is 3-5 days pre-arrival preparation using printed clinic register by clerical staff.

3-5 day pre-arrival preparation includes a Referral/Authorization Management Flow, which involve a Verification Unit that enters referral/authorization in the IDX system (an integrated billing system used by Professional Fee Billing). This task is done 3-5 days prior to the patient appointment dates.

In most of the clinics, a clerk generates and checks the clinic register 3-5 days and 1 day prior to the patient’s visit. This project focuses exclusively on the 3-5 days pre-arrival preparations. For this specific task, the clerical staff identifies patient referral/authorization requirements. If a required referral is not present or valid, the clerical staff calls the patient to confirm a referral request from the patient's Primary Care Physician or for an authorization from the patient’s insurance company. Patients have the option to bring it on the day of visit, fax or have the patient’s PCP to fax a referral to Document Control Center (DCC). There is also a waiver option if the patient is unable to secure a referral by the time of the visit.

After discussing the requirements with the patient, the clinic staff is required to document the conversation/instructions as comments in the CLS or EWS scheduling system.

Staffing Summary

Currently, Ambulatory Care department employs more than 450 clerical staff. Major tasks are variety of appointment scheduling, pre-arrival preparations, checkout functions, among many other daily routines. Approximately 50% of the total clerical staff is involved in the pre-arrival preparations.
ANALYSIS AND RECOMMENDATIONS

Current State Documentation

I. Current State from Surveys

The survey result is shown in Appendix A.

![Chart 1: Percentage of Clinic Register Type](image)

<table>
<thead>
<tr>
<th>Clinic Register Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 days</td>
<td>12%</td>
</tr>
<tr>
<td>5 days</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>50%</td>
</tr>
</tbody>
</table>

Only 41% of the total clinics replied in the survey use 3-5 days pre-arrival preparations. This means that most clinics don't use a 3-5 days pre-arrival preparations. Our vision is to have all the clinics to use 3-5 days pre-arrival preparations.

![Chart 2: Way to Obtain Register](image)

Ways to Obtain Register

42% of the 3-5 day registers are delivered from places away from the clinics. 29% of the 3-5 day registers are picked up from a mailbox and only 25% of the clinics print the registers by themselves.

![Chart 3: Percentage of Information Needed](image)

Information Needed in the Register

100% of the clinics look for insurance information in the register. 86% of the clinics look for referral and authorization information. 71% of the clinics looks for patient outstanding balance. Only 57% of the clinics look for copay, reminder calls and comments.
Referral Status Checking

100% of the clinics check for existence of referral and expiration date. Only 83% of the clinics checks whether the number of visits exceeds allowance in the referral.

Usage of Comments

56% of the clinics uses informal sentences in the comments section while only 44% uses standardized code.

Additional Systems Needed

71% of the clinics uses CareWeb and PM in addition to the registers. 57% of the clinics checks IDX system and 43% of the clinics checks EWS, CLS, Imaging and Outreach system. Only 14% of the clinics checks STAR and none of them checks C-Cubed system.
Number of Registers Distributed

86% of the clinics only uses less than 2 registers while only 14% of the clinics uses more than 2 registers.

Register Users

62% of the registers are used by clinic clerks, 13% are used by Medical Records Personnel and the rest of them, 25%, are used by patient account representatives.

Number of Registers Used

- Clinic Clerks: 62%
- Medical Records Personnel: 13%
- Patient Account Representatives: 25%

Frequency of Reused Register

- Never: 49% of the clinics had never reused the registers.
- 1 to 5: 17% of the clinics reused the registers for less than 5 times.
- 5 to 10: 17% of the clinics reused the registers between 5 and 10 times.
- More: 17% of the clinics reused the register for more than 10 times.
II. Current State from Personnel Interview and Observation

Team 2 completed the visits of 9 clinics under Ambulatory Care alone with Medical Records department and Information Technology Division (MCIT). The following tables show that the finding from the 9 clinics visited.

<table>
<thead>
<tr>
<th>Clinics</th>
<th>Otolaryngology Clinic</th>
<th>Med Sport Clinic</th>
<th>Pediatric Cardiology Clinic</th>
<th>Dermatology Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person</td>
<td>Malissa Eversole</td>
<td>Julie Agbabian</td>
<td>Vicki Christian</td>
<td>Carol Scheel</td>
</tr>
<tr>
<td>Initial Visit</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Summary of Visit</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3 day Pre-arrival</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>5 day Pre-arrival</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Process Flowchart</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Current Register System</td>
<td>EWS</td>
<td>EWS</td>
<td>CLS</td>
<td>EWS</td>
</tr>
<tr>
<td>PCP</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinics</th>
<th>Medical Procedure Unit</th>
<th>Vascular Surgery</th>
<th>Middlebelt Pediatric</th>
<th>Internal Medicine Specialist, Chelsea</th>
<th>Pediatric Specialty Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person</td>
<td>Malia Knoland</td>
<td>Julie Glenn</td>
<td>Janet Wrosch</td>
<td>Mary Hubbard</td>
<td>Kathryn Turnbull</td>
</tr>
<tr>
<td>Initial Visit</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Summary of Visit</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3 day Pre-arrival</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5 day Pre-arrival</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Process Flowchart</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Current Register System</td>
<td>EWS</td>
<td>EWS</td>
<td>EWS</td>
<td>EWS</td>
<td>CLS</td>
</tr>
<tr>
<td>PCP</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: Medical Records and MCIT are not directly related to 3-5 day pre-arrival preparations. Refer to Appendix B for more detailed information about the clinics.
Out of the 9 clinics visited, 7 were using EWS system and the other 2, CLS system. 2 were using 3 day pre-arrival, 4 were using 5 day pre-arrival and the rest of 3 were using one-day register. Because of the different database system, standardization was an issue that would be resolved when all the clinics were to cross the transition phase and eventually use EWS for their appointment scheduling system.

The team interviewed various personnel whose responsibility is directly related to the database system in the project scope. The interviews were conducted to understand the procedures taken by clerks to check for data in the system, to observe the process and frequency of clerks manually calling patients, and understand the volume of preparation clerks have to process on a daily basis. The following diagram shows the general flowchart of 5-day clinic register.

Diagram 1: Standardized 5-Day Clinic Register Flowchart

Each clinic varies in the way they go about the 3-5 day preparation. In the diagram 1 above, the highlighted areas are steps or procedures that currently vary from clinics to clinics.
Problem Statement and Root Cause Analysis

The current 3-5 days pre-arrival preparation processes have the following problems:

1. Extra labor and time needed to manually integrate the databases onto the register
2. Clinic registers may be obsolete if not updated constantly
3. Non-standardized use of registers by different clinics
4. Risk of human errors due to manual inspection of registers
5. Multiple telephone calls to remind patient of scheduled appointment, Referral/Authorization information, and outstanding balances.

The root causes behind this are:

- Clinic registers have incomplete information about patient insurance information, referral/authorization requirements, outstanding balance, and appointment schedule. Clerks have to obtain the necessary information from different systems such as MCA, IDX, EWS/CLS, Imaging System and Care Web. This makes running any system slower than is necessary.

- Information highlighted or changed in the printed clinic register may not be updated accordingly

- Not all the clinic clerks follow standardized work practices. Based on our survey, 10 out of 17 clinics don’t use 3-5 day pre-arrival register

- The clinic register displays all the patient appointments for a particular date. Some clerks have to flip through a list of more than 200 patients in order to find an average of 10-15 patients that needs document verification.

- Several different individual clerks perform current tasks of reminding patient appointment, referral/authorization, insurance, and outstanding balance. This explains why multiple phone calls would be placed. Thus obtaining unpopular customer feedback.

Recommendations

Team 2 has designed an application that plans to meet the objective of standardizing the workflow for the 3-5 day preparation across all clinics under the Ambulatory Care department. The application is designed on a Visual Basic programming platform, and it is meant to be a simple guide for future references by MCIT department.

I. Proposed Standardized Workflow Pre-arrival Preparation

The steps and procedures that clinic clerks would use for this application is shown in diagram 2 as shown on the next page. The steps that specifically achieve efficiency in customer service and the database system, as well as standardization of the workflow are highlighted to emphasize the importance of efficiency.
The visual basic application would have several interfaces for the clinic clerks to use, but not too many, so that they can focus ‘customer service’ and not distract their attention by having too many systems running at the same time. The forms are as follows:

**Assumptions:**

At this level of analysis, the application is navigated based on simple functions for demonstration purposes. Most of the specific programming would need to be implemented by the IT department. The database networks would also need further analysis by the IT department on top of that presented by Team 1. From the analysis of the various clinics, a hypothetical entity-relationship diagram that Team 1 arrived at can be found in the appendix.

**II. Visual Basic Software Application**

To cater to the different needs of various clinics, the IT department would need to determine a database interface that can display certain information for the various clinics that do not require certain functions. For example, the function of calling patients for reminding them of their appointments would only be displayed for those clinics that call patients.
A. Login Form

In the login form, clerks must enter the clinic code and a pre-defined password. In order to customize some of the functions in the program, each clinic code entered will draw only the information pertaining to the clinic from the databases. This should encourage clinics to use the standardized ‘online register’ that would not be too varied from their current working environment.

![Login Form](image)

B. Work list

The work list screen shows a summary of all the patients arriving 3-5 days from now that requires document verification. Currently, clerks will check a patient’s referral information, authorization, Insurance policy, outstanding balance, and appointment reminder calls from a printed register.

In order for the proposed application to perform in a manner similar to the current system, we have decided to adapt almost all of the existing functions in various different systems and combining them into one application. This screen will be in the form of a checklist listing all the patients due to arrive in 3-5 days time. Of all the patients listed, only those patients that need further verification would be highlighted. The records that are highlighted would be those that might be missing a check in the 4 checkboxes that we have designed. The diagram of the interface is as follows:
If a checkbox is checked, this means that information does not require additional verification. However, if the checkbox is unchecked, this means that the clerk must confirm the underlying problem and call the patients. In order to get the patient information, he must click on patient’s name.

C. Patient Information

In this screen, an array of information is presented. The top part shows patient name, address, telephone number and all the tasks that must be verified – this is performed by clicking on them.

When one clicks on the Patient’s name, the program will draw the information from the PM database, and show a summary of the patient information. From here, the clerk is allowed to change any of the pre-defined information, which will be instantly updated in the database.
When one clicks on “Referral”, the referral information will be drawn from the MCA database to be shown here. In here, the clerk will be able to pinpoint the problem. A referral is not valid if (1) it is missing, (2) it is outdated or (3) number of visits exceeds allowance. If true, a check will show next to the problem. A clerk must then call the patient to remind him of the referral, and check one of the comments below.
If the clerk clicks on “Authorization/Insurance Policy”, the application will draw out information from the IDX system. The screen will show the name of the PCP, insurance name, and type of special treatment that the patient is seeking for. Depending to the type of treatment, the insurance may or may not pay for the expenses. A clerk must call the insurance company and ask for the authorization. The options are shown below.
Similarly for when one clicks on "Outstanding Balance", the data will be drawn from the IDX system, and display a summary of all the services and payments served to the patient in the clinic will be shown. A detailed picture can be shown below.
Finally, “Appointment Reminder” will just remind the clerk to notify the patient of the day and time of the appointment.

The picture below shows how the work list will look like after all the job is done. Again, notice how every box in the first name has been checked. This tells the clerk that he can now go for the next patient in line.
The above listed some of the information needed in the 3-5 day pre-arrival preparations. All the information is gathered from different databases. Patient Register Data, Family Physicians, Patient Personal Data, Referring Physicians come from PM and EWS. Patient Outstanding Balance comes from IDX system and Referrals Requirement and Insurance Information comes from MCA and Imaging System. A new table should be created for Clinics information for login purpose.
Recommendation Summary

In conclusion, we recommend a change in the current paper-based register system, to meet the objective of saving costs (of paper and delivery), and to standardize the 3-5 day preparation for all current and future users. An online work list should be used for all 3-5 day preparation. The work list is an integration of all databases used in the 3-5 day preparation.

Features in the work list include:

- Functions in the work list interface will be customized for each clinic.
- Automated database generated list of patients that requires both verifications and reminder calls.
- Automated referral/authorization verification with the integration of PM, EWS, Imaging, and MCA.
- Automated patient outstanding balance checking from IDX system.
- Standardized comments for reminder calls and referral/authorization calls.

The proposed interface only communicates the idea of proposed solution. MCIT would need to further improvise the interface for actual application in Ambulatory Care Clinics.
**ACTION PLAN**

**Interface Development**

The VB application developed in this report is just for demonstration purposes. The application does not have any features mentioned in the recommendations. Actual interface needs to be developed by Information Technology department. The interface should have a login form, work list and patient information form that includes referral form, authorization/insurance form, outstanding balance form and patient appointment schedule form.

One of the features in the application is the automated referral and authorization checking. This should be done using information gathered from current databases. Therefore the application should be connected directly to the databases.

The 3-5 day pre-arrival preparation interface should be in the EWS system along with current features. Before implementing the 3-5 day pre-arrival interface, all clinics that currently still using CLS system should have completed its transition to EWS system.

**Database Integration**

The interface developed should gather clinic and patient information from different databases. The application should integrate all information from EWS, IDX, MCA, Imaging, Outreach, and all databases that have information regarding to 3-5 days preparations.

**Personnel Training**

It is very crucial that all personnel and staff that will use the application to receive proper training for using the new 3-5 days pre-arrival preparations. Periodical training should be done similar to current training practices.

**IT Support**

Because the application will be new for the users, questions are very likely to occur. Support from IT department or an online help if possible should be available. This will hinder all possible confusion on the new 3-5 day pre-arrival process.

**Continuous Improvement**

The improvement should not stop after the application been successfully implemented. Management should continuously observe current state in order to find other improvement opportunities.
Surveys for the Clinic

I) Survey Questions (Survey is combined with Team 1)

II) Survey Summary
### Summary of Survey I

<table>
<thead>
<tr>
<th>Department Name</th>
<th>Clinic Register Type</th>
<th>Obtaining Register by</th>
<th>Information needed for 3-5 day clinic register</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>1. Medical Procedure Unit</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>2. Obstetric</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>3. Orthopaedic</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>4. Pediatric Cardiology</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>5. Chelsea Family Practice</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>6. Neurology</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>7. Preventive Cardiology</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>8. General Surgery</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>9. Pediatric Multispecialty</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>10. Pediatric - Pediatrics</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
<tr>
<td>11. Ophthalmology</td>
<td>3 days</td>
<td>Other</td>
<td>Self-print, Pick-up, Delivery</td>
</tr>
</tbody>
</table>

**Number of Clinics**: 2 5 10 2 2 3

### Summary of Survey II

<table>
<thead>
<tr>
<th>Department Name</th>
<th>Copies of register distributed to</th>
<th>Frequency of registers reused by times</th>
<th>Number of patients Appointments Per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>Medical Records Personnel</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>1. Medical Procedure Unit</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>2. Obstetric</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>3. Orthopaedic</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>4. Pediatric Cardiology</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>5. Chelsea Family Practice</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>6. Neurology</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>7. Preventive Cardiology</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>8. General Surgery</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>9. Pediatric Multispecialty</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>10. Pediatric - Pediatrics</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
</tr>
<tr>
<td>11. Ophthalmology</td>
<td>3 days</td>
<td>Never, 1 to 5, 5 to 10, More</td>
<td>0.5, 0.17, 0.07, 0.17</td>
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</table>

**Number of Clinics**: 2 5 10 2 2 3
### Summary of Survey III

<table>
<thead>
<tr>
<th>Department</th>
<th>System needed to be on Screen</th>
<th>Number of copies of register</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>EWS</td>
<td>CLS</td>
</tr>
<tr>
<td>1</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
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<td>4</td>
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### Summary of Survey IV

<table>
<thead>
<tr>
<th>Department</th>
<th>Referral/Authorization Status</th>
<th>Comments Uses</th>
<th>Time of keeping 3-5 day clinic registers</th>
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<tbody>
<tr>
<td></td>
<td>No Referral</td>
<td>On File</td>
<td>Expires</td>
</tr>
<tr>
<td>1</td>
<td>Medical Procedure Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>New Health Center</td>
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<td></td>
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<tr>
<td>3</td>
<td>Orthopedic</td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>Pediatric Cardiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Chelsea Family Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Preventive Cardiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>General Surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Pediatric MultiSpecialty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Micros Occupational Health</td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>Urology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Cardiac Surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>General Thoracic Surgery</td>
<td></td>
<td></td>
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</table>

Number of Clinics: 3 3 0 0 3 3 0 3 0 1 0 1 0 0 0 1 2
Visits to the Clinics

Clinic visits:

Summary of Each Clinic Visit

Flow Charts of Each Clinic

Clinics include:

In the following order:

i) Otolaryngology (Taubman Center, 1st Floor)

ii) Med-Sport (Dominos Farm)

iii) Medical Procedure Unit (Main Hospital – 2B355 UH)

iv) Dermatology (Taubman Center, 1st Floor)

v) Vascular Cardiology (Taubman Center, 2nd Floor)

vi) Middlebelt Pediatrics (Middlebelt)

vii) Pediatrics Cardiology (Mott’s Women and Children Hospital)

viii) Chelsea Internal Medicine Specialists (Chelsea)

ix) Pediatrics Specialty Care (Taubman Center, 1st Floor)
Clinic: Otolaryngology
Name of Employees: Malissa Eversole and Angela
Location: Taubman Center, Floor 1, Wing A
Time/Date of Visit:

Description of Current State Operation:
- Everyday, Melissa receives from an EWS representative, who in turn receives from the Ambulatory Care, a printed list of all patients that have scheduled appointments, 5 working days from now.
- Angela must follow 3 steps before she can determine if the patient has all the paper work up-to-date.
  - First, if the list shows that the patient needs a referral (or authorization), Angela will highlight his register.
  - Second, if the list shows that the patient has all the paperwork up to date, she will type his/her CPI number in the Imaging System. The Imaging System will tell her if the referral has expired or not.
  - Third, she will go to Care-Web and check if the referral has been max-ed out.
- If all 3 steps are correct, she doesn’t need to do anything else. If the referrals are ‘good’, Angela will proceed to the appointment grid and file it for check-in.
- If the patient is has problems in the 3 information above (missing referral, expired referral, maxed-out referral), Angela will give a call to the patient, and remind him/her to bring the referral. Angela will attempt calling the person several times until she can leave a message. Due to the large population of incoming patients, these calls will only be made for the patient that comes up on the register for that day for Angela.
- After the call, Angela will make short comments about the patient. This data will be reflected in the ‘regular registers’ (registers that are generated for patients coming in on that day). That way it is easier for the receptionist to serve the patient when he/she arrives for the appointment.

Interesting Facts about the system:
- Just started on EWS since December 1999. (very new)
- If on the day of appointment, a patient still forgets to bring a referral, he has 3 options. 1) call the insurance company to fax the referral, 2) sign a waiver or 3) re-schedule the appointment
- The patient’s most preferred option is to sign the waiver.
- Two lists are printed out everyday:
  (1) today’s list (regular register) and (2) 5 day’s list (5-day register).
- The Ambulatory Care department performs appointment reminders by mailing out reminders. Reminders are usually sent 2-weeks in advance.
- They plan to count the number of referrals under CARE-WEB by the IDX system. (This system has a record of the visit history). Post-op are free!!!
- Used informal comments in EWS system.
Clinic: Med-Sport
Name of Employee: Ruth Mills
Location: Dominos Farm
Time/Date of Visit: 1.30pm-2.30pm, March 2nd, 2000

Description of Current State Operation:

- 3 different clinics:
  1. Orthopedic Surgeon
  2. Internal Medicine
  3. Physical Therapy
- 1 day pre-arrival preparation, do not use 3 or 5 days register
- 3-5 days pre-arrival preparations are assumed to be done by verification unit
- Med-sport is a PCP, only physical therapy patients needs referrals
- Volume:
  1. Monday, Wednesday, Friday averaged 110-120 patients → 3-4 doctors/day
  2. Tuesday, Thursday averaged 30 patients → 1-2 doctors/day
- Automatic billing system starting 03/06/00.
- When patients don’t have referral, they are asked to sign a waiver.

Comments on EWS:

- Have been using EWS since July 1999
- Problem: Sometimes in scheduling system the appointment data didn’t show the right appointments. Clerks have to close the window, change the date and reopen the appointment window until the right appointment data is displayed. Med-Sport is the only clinic with the problem.
- If mainframe is down, the information typed in the computer is not saved (lost) after clerks quit applications. Mainframe goes down once a month.
Clinic: Medical Procedure Unit
Name of Employees: Marla Knoland, Elaine Pasky
Location: Main Hospital – 2B355 UH
Time/Date of Visit: 12pm – 1pm, February 1st, 2000

Description of Current State Operation:
- Marla receives a printout with all the information of patients that will be coming 5 days from today.
- Marla checks if the patient has a referral or authorization. (from referral and imaging DCC, Care Web, and IDX Referral Database)
  - If yes: nothing is done
  - If no:
    1) She notifies the patient 5 days prior to the appointment date.
    2) If the patient cannot provide either documents, Marla must call the PCP.
    3) If nothing works, she will ask the patient to sign a waiver or pay the full amount on the spot.

Interesting Facts about the system:
- Marla will call several times until she can get a hold of the patient.
- Marla is responsible to import all the numbers of the billing information. But she does not do the billing itself.
- Reminders of appointments are sent by mail 2 weeks in advance.
- If a patient has an authorization from the Medical Procedure doctor, he/she doesn’t need a referral.
- The main purpose of this procedure is to tax less the sick patients when they come to see the doctor.
- The main complaint is that Clinics are supposed to have all these information done before the patient visits the Medical Procedure rooms. In other words, the same work is being done twice.
- Marla must check the patient’s referral and authorization every time the patient visits the medical procedure. Therefore, there is no designated number of visit allowance as long as the paper work is in order.
START

Receive 5-days prearrival from MCIT

Requires Referral?

No

Log into CareWeb to Check Number of Times Patients Have Come

Yes

Number of Visits Exceeds Allowance?

No

Add Comment in EWS Database
"Referral on File"

Yes

Call Patients to Remind them Bring Referral and Appointment

Successful Calls?

No

Add Comment in EWS Database
"Couldn't get through"

Yes

Add Comment in EWS Database
"Patient will hand carry referral"

Yes

Add Comment in EWS Database
"Fax on MM/DD/YYYY"

END
Clinic: Dermatology
Name of Employee: Carol Scheel
Location: Taubman Center, 1st Floor
Time/Date of Visit: 11:10am to 12:00pm, February 11th, 2000

Description of Current State Operation:
1. Every day, Dermatology prints out a list of all the patients that will be coming 5-days from now.
2. They highlight FC (financial class). FC states what type of insurance the patient has.
3. If the registers show that the patient has a referral, the worker must then go to the Imaging system, and print out the referral. She then places this printout in a box dated 5 days from today.
4. Things that are checked in the referral: Date, how long it is good for, and number of visits.
5. If the patient doesn't have a referral, the worker will then call the patient and leave message. Sometimes, the worker can call the PCP to fax the referral. If none of the above are possible, the patient must sign a waiver.
6. Care Web is then used in order to check the medical history of the patient.
7. After everything is done, she schedules the appointment in the EWS system.
8. IDX does not work yet.

Interesting Facts about the system:
They throw away the paperwork on the next day of scheduled appointment.
The clerks at the check-in and check-out counters are rotated periodically.
DERMATOLOGY 5 DAY CLINIC REGISTER FLOWCHART

START

Receives from MCIT 5 days Clinic Register

Dermatology Dept. Check In-Out Counter

Requires Referral ?

Yes

No

Prints out Referral from Imaging System

Did the Referral Expire?

Yes

No

Number of Visits Exceeds Allowance?

Yes

No

Assembles Referral and Medical Info to Patient Visit

Login into CareWeb Prints out Medical History

Updates EWS System

End

Call Patients or PCP to Remind Them to Bring or Fax Referral

Successful Calls ?

No

Yes

Add Comment in EWS Database
* Couldn't get through *

Add Comment in EWS Database
* Patient will hand carry referral

Add Comment in EWS Database
* Fax on MM/DD/YYYY *
Clinic: Vascular Cardiology
Name of Employee: Julie Glenn
Location: Taubman Center, 2nd Floor
Time/Date of Visit: 11:10am -12:00pm, February 11th, 2000

Description of Current State Operation:

The procedures taken when scheduling appointment includes
- Check for referral by asking the patients
- Referrals are sent by two paths:
  1. PCP sends referrals to Imaging system. This clinic then receives information about the referral from Imaging system.
  2. PCP sends referrals to this clinic, and is handled by Julie as well, who then comments into the EWS system.

5-day preparation (EWS)
- Check for referral from Imaging System
  1. Check insurance type - Managed Care / others
  2. Problem: Cannot look at the details of referral (Assume: can only check if the referral is received)
- Check DCC
- Suggestions:
  1. To have access to referral to look at it in detail. Problem: keep calling and reminding the patients to bring referral. Possibly due to server downtime or not enough memory in system.
- Sources for Preparation:
  1. EWS
  2. Pickup register from first floor of Taubman Center

Comments on EWS:
Have been using EWS for approximately 3 years
Clinic: Middlebelt Pediatrics

Name of Employee: Janet Wroch
Location: Middlebelt
Time/Date of Visit: 10am -11.20am, February 11th, 2000

Description of Current State Operation:
3 day clinic register procedure:

• Only has 3 day clinic register, received everyday from MCIT courier by mail
• Janet’s responsibility of clinic register:
  1. Highlights patients’ full registration status and name if the data is older than a year old.
  2. Send the highlighted register to medical records clerk who prints patient appointment information
     (date, time, physician name, service types, etc) and the clerk will attach a yellow patient information
     sheet in the patient folder. The folder is placed near the receptionist desk afterwards 3 working days
     after.
• Patients will fill in PIS on the day of the appointment and another receptionist update patient data in
   the database.
• If patient needs to come back → 3 days before the appointment, Janet receives 3 day register from
   MCIT to double check the patient information in the database before updating patient full registration
   status.
• If there are still missing information, Janet will call the patient to get the missing information the next
   three days before patient comes.
• Janet will give reminder calls to every patient that has scheduled appointment.
• No referrals needed because the clinic is a PCP (Primary Care Physicians). They are the ones that
   give out referrals for patients to seek further treatments.
• Majority of patients (typically 60 out of 80 patients/day) are same day call-ins. They call and come
   on the same day, therefore the 3 day printed register doesn’t represent the actual appointments on the
   respective day.
• They use EWS system to schedule appointment for patient revisit. The EWS system is connected to
   U of M EWS system. Before EWS, they use paper based appointment schedule(not CLS).
• FullReg: 01/01/1901 means that there have been changes in the patient’s insurance policy, therefore
   the patient information needs to be updated.
• If the call-ins patient doesn’t have insurance card or if they have no insurance, then they have to sign
   a waiver.
• Every patient appointment is printed out.

Comments on EWS:
• Response time is too slow, needs to be improved
• Too many pop-up windows.
• Place to put comments is inaccurate. Comment box should come after all patient information completed,
   including insurance status.
• The appointment system cannot cancel appointments in the middle of appointment process. The clerks have to
   complete the whole process before they can make any changes. (no back button)
Middlebelt Pediatrics Clinic
3 Day Clinic Register Flowchart

START

Receive 3 Day Clinic Register from MDT Counter by Mail

Check Full Registration Status

Expired Registration Status? (Information older than 1 year)
  Yes → Highlight Patient Name and Full Registration Date
  No

Revisiting Patient?
  Yes → Missing Information?
  No → Print Every Patient Appointment Information

Send Printed Appointment and Highlighted Information to Medical Records Clerk

Is Patient Name and Full Registration Highlighted?
  Yes → Attach Yellow Patient Information Sheet to the Patient Folder
  No → Put Printed Patient Appointment Information in Patient Folder

2 Working Days Later

Put Patient Folder Near the Receptionist Desk

Patient Comes
  Patient Fill PIS if necessary

Patient sees Physician

Receptionist Update Patients Information in the EWS Database

Patient Needs to Revise?
  Yes → Receptionist Schedule Patient Appointments in EWS Database
  No → Put Comments in EWS Database Indicating Return Visit

2 Working Days Later

Call Patients to Remind Them of Appointment for the Next Day.

END
Clinic: Pediatric Cardiology
Name of Employer: Vicki Christian
Location: Mott’s Women and Children Hospital
Time/Date of visit: 10.15am-11.30am, February 2nd, 2000

Description of Current State Operation:
3 days register
- Appointment confirmation
- Referral calls if the patients needs a referral
- From CLS, print registers on their own
- CLS is the current scheduling system
- Save comments on the database (CLS)

1 day register:
- Color coded for physicians in the resource column of the 1 day register
- Look at insurance type and enter the Caid Care Number
- If patients still don’t have insurance then they will call patients, leave a message and assume that they will deal with the referral when they are there.
- Received from MCIT (Medical Center Information Technology)
- Picked up from Taubman Center
- If for whatever reason that the patients doesn’t have the required referrals, then they have to sign a waiver.

Interesting Facts about the system:
- No billing for health service is done in the clinic. Everything that deals with the account balance is sent to the register (separate department)
- No EWS, expected on April/March 2000
- Registration and CLS information updates are reflected in the MCIT report (1 day)
- Difference on information provided on 1 and 3 days register:
  1 day has the updated comments from 3 days register
- In MCIT they look at the following fields:
  - Phone Number
  - Doctor’s Name (PCP → Primary Care Physicians)
  - O3 Comments
  - Referrals
- They use CLS, MCIT, Imaging and CareWeb but they do not use EWS and IDX
- The whole process takes 4-5 hours daily.
- No access to change insurance information in the clinic, but have access to change other patients personal data.
- Scope document consists of Referral, kinds of medical procedures that are allowed, # of allowable visits
- The clinic keeps all the records (more than 3 months) of 3 days register
- The clinic requires at least 5 copies of 1 and 3 days register
START

Receives 5 copies of printed registers (3 days, and 1 day) from 1st floor of Taubman Center.

3 day register used at the check-out counter

Yes

Check for missing information

Call patient and enter comments manually

No

Ends

Yes

Is referral on file?

Yes

Prints out referral from imaging system

No

Did the referral expire?

Yes

No

Number of Visits Exceeds Allowance?

Yes

No

Log into CareWeb
Prints out medical history

End

Successful Calls?

Yes

Add Comment in EWS Database
* Fax on MM/DD/YY *

Yes

Add Comment in EWS Database
* Patient will hand carry referral

No

Add Comment in EWS Database
* Couldn't get through *
Clinic: Chelsea Internal Medicine Specialists

Name of Employee: Mary Hubbard  
Location: Chelsea

Description of Current State Operation:
- This clinic is a Primary Care Physician, hence they do not need to check for referrals, and thus, do not have a 3-5 day pre-arrival preparation. They would generate referrals for their patients to see other specialists if required.

- Team 2 spoke to a Mary Hubbard at the Check out desk. They are using EWS for scheduling appointments.
  - The EWS application is not fully utilized. There are 2 screens that are not used for the scheduling system. They were not told what these 2 screens were for.
  - Every time they schedule an appointment, they would check if the patients had changed their insurance plan.
  - Some comments about EWS system:
    i) The application is too slow
    ii) Too many pop-up windows (some redundant screens)

- They would print out a list of appointments 2 days in advance to remind patients about their appointments. This list is obtained from Care-Web.
  - They would not request for referrals or authorization.
  - They would remind the patients to bring insurance card.

- We also observed how they obtain information from new patients. A sample ‘New Patient Form’ was given to us.
  - They would check if the insurance company was affiliated to them, and if the company were not, they would inform the patients before attempting to schedule them.
  - This process also applies for ‘Transfer Patients’, who are looking to change their PCP.
Clinic: Pediatrics Specialty Care
Name of Employee: Kathleen Turnbull
Location: Taubman Center, 1st Floor, Wing D
Time/Date of visit: 9:15am-10:00am

Description of Current State Operation:
Preparation:
1. 1-day reminder calls only for new patients.
2. Printing registers (CLS):
   • Check for referrals
   • Highlight physicians of each specialty department
   • Check if new patient:
     - check in at registration
     - fill out a face sheet on day of appointment
     - fill out growth chart also (sorted by age)
   • No calling were made to existing patients:
     - Confidentiality issue
     - no staff available to make the call
   • No waiver options. Physicians seldom turn away patients. Write-offs are minimal, so Kathy said.
3. Internal comments made include:
   - if patient is new/existing
   - use of equipment is recorded in case of rescheduling the equipment.
4. NOTE: new patients means that the clinic cannot check for referrals in system. They would need to go to Registration.
Directions: -Please answer the questions that apply to your use of the clinic register by marking an "X" in the appropriate boxes.

SURVEY

Department Name: ____________________________
Location: ____________________________
Survey Date Completion: ____________________________

What type of clinic register do you use?

3 Days
5 Days
Other (Please Specify: ____________________________)

How do you obtain the 3-5 day clinic register?

Self Print
Pick-up
Delivery (From: ____________________________, By: ____________________________)

What kind of information do you look for in a 3-5 day clinic register? Check all that apply.

Insurance Information
Referrals or Authorization
Co-Pay
Billing
Call patient to remind appointment
Comments
Other (Please Specify: ____________________________)

How do you determine a bad Referral/Authorization?

No Referral on file
Expired Referrals
Number of Visits exceeds Allowance
Other (Please Specify: ____________________________)

What kind of comments are you using right now?

Standardized Coding/Abbreviations
Informal Sentences
Which systems are needed on screen while checking the registers?

- EWS
- CLS
- IDX
- Imaging System
- CareWeb
- OutReach
- Patient Management (PM)
- STAR
- C-Cubed
- Other

How many copies of the 3-5 days clinic register do you use?

- 1-2 copies
- 3-5 copies
- 6-10 copies
- More

Who do you distribute copies of the 3-5 day register to?

- Clinic Clerks
- Medical Records Personnel
- Patient Accounts Representative
- Medical Assistants
- Registered Nurses
- Physicians
- Other

How long do you keep the used 3-5 day clinic registers?

- 1 to 10 days
- 10 days to 1 month
- 1 month to 3 months
- 3 months to 6 months
- more than 6 months

How often are the 3-5 day registers used again afterwards?

- Never
- 1 to 5 Times
- 5 - 10 Times
- More than 10 Times

Thank you very much for your cooperation in completing this survey. Please save this excel spreadsheet, and return it via email attachment.
## Summary of Survey I

<table>
<thead>
<tr>
<th>Department Name</th>
<th>Clinic Register Type</th>
<th>Obtaining Register by</th>
<th>Information needed for 3-5 day clinic register</th>
</tr>
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<tbody>
<tr>
<td>Medical Procedure Unit</td>
<td>3 days</td>
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<td>Insurance Information</td>
</tr>
<tr>
<td>Novi Health Center</td>
<td>1 day</td>
<td>x</td>
<td>Referrals or Authorizations</td>
</tr>
<tr>
<td>Orthopedic</td>
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<td>x</td>
<td>Co-pay</td>
</tr>
<tr>
<td>Pediatric Cardiology</td>
<td>x</td>
<td>x</td>
<td>Billing</td>
</tr>
<tr>
<td>Chelsea Family Practice</td>
<td>1 day</td>
<td>x</td>
<td>Reminder</td>
</tr>
<tr>
<td>Neurology</td>
<td>x</td>
<td>x</td>
<td>Comments</td>
</tr>
<tr>
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<td>1 day</td>
<td>x</td>
<td>Other</td>
</tr>
<tr>
<td>General Surgery</td>
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</tr>
<tr>
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<td>1 day</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Mivorka Occupational Health</td>
<td>1 day</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Urology</td>
<td>1 day</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cardiac Surgery</td>
<td>1 day</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>General Thoracic Surgery</td>
<td>1 day</td>
<td>x</td>
<td></td>
</tr>
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<td>Brighton Health Center</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Pediatric Surgery</td>
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<td></td>
</tr>
<tr>
<td>Medskeet Pediatrics</td>
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Number of Clinics: 2 5 10 2 2 3 7 6 4 5 4 4

## Summary of Survey II

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<th>Department Name</th>
<th>Referral/Authorization Status</th>
<th>Comments Uses</th>
<th>Time of keeping 3-5 day clinic registers</th>
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<td>Proper testing not approved</td>
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</tr>
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<td>Detained on referral</td>
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<td>General Surgery</td>
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<td>Mivorka Occupational Health</td>
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<td>Cardiac Surgery</td>
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Number of Clinics: 6 6 5 4 5 5 1 2
### Summary of Survey III

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<th>Number of copies of register</th>
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### Summary of Survey IV

<table>
<thead>
<tr>
<th>Department Name</th>
<th>Copies of register distributed to</th>
<th>Frequency of registers reused by times</th>
<th>Number of patient Appointments Per day</th>
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<td>Clinic Records</td>
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<td>Patient Accounts Representative</td>
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<td>Novi Health Center</td>
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</tr>
<tr>
<td>Orthopaedic</td>
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<td>150</td>
</tr>
<tr>
<td>Pediatric Cardiology</td>
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<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Chelsea Family Practice</td>
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</tr>
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<td>Neurology</td>
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<td>General Surgery</td>
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<tr>
<td>Middlesbte Pediatrics</td>
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</tr>
<tr>
<td>Otolaryngology</td>
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<td>50</td>
<td>150</td>
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</tbody>
</table>

### Number of Clinics

| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 3  | 3  | 4  | 3  | 5  | 3  | 5  | 1  | 8  | 1  |    |    |    |    |    |    |    |    |    |

### Table Analysis

- The table shows the distribution of copies of a register and the frequency of its usage across various medical departments.
- Medical Procedure Unit, Novi Health Center, and Orthopaedic are among the departments with the highest number of copies distributed (60 copies).
- The frequency of register usage varies, with some departments using it never (marked as 'Never') and others using it frequently (marked as '1 to 5' or '5 to 10' or 'More').
- The number of patient appointments per day is also noted, with some departments handling a high volume (e.g., 150 to 250 appointments per day).