University of Michigan Health System

Program and Operations Analysis

Analysis of Patient Registration Information Quality

Final Report

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EXECUTIVE SUMMARY

Background

Registration Department Managers were concerned that incomplete and incorrect patient information is being entered into the Patient Management (PM) system at the University of Michigan Health System (UMHS) and is not being tracked overtime. Incomplete and/or incorrect patient data can cause problems with patient care and billing. For example, entering incorrect personal information can create duplicate patient files and incomplete insurance information can lead to insurance company rejections. Currently, there are 18 different reports generated daily that check for registration information correctness. Also, the WCPI audit completed three times a week for each employee checks for information completeness. Currently, no method exists to track all these errors over time to give an accurate portrayal of registration information collection quality.

Therefore, the purpose of this project was to create a system to track the completeness and correctness of registration data through time. The system was called QualityNet.

Methodology

Multiple steps were taken to complete QualityNet. We considered creating a computer program that would present an easy way to store and query error report data in an Access database. To make the program user friendly we decided that building a graphic user interface (GUI) with Visual Basic.NET (VB) would be beneficial because it would allow for the easy summation and use of data within the database.

In order to fully understand the error-reporting process, flowcharts for error reports by system generated, crystal, and WCPI were drafted (see Appendix D, E, F, and G). These flowcharts began when the error occurred and ended when the error report reached its final destination where the error was fixed in the PM system. The flowchart data corresponds to what the technical specialist within quality assurance reported.

After flowcharting, our team collected data to be entered into QualityNet. The registration department staff provided us with:

- The WCPI audits for the month of March 2005
- Error report tracking data for January through March 2005
- Duplicate CPI data for January through March 2005

While data was being collected, we created the program QualityNet and Access database. QualityNet tracks the completeness and correctness of patient record information. Tracking registration completeness and correctness is accomplished by compiling data from the WCPI and error report forms, then storing them in the database for easy reference. QualityNet will allow patient registration employees and management to view data-entry performance.

Findings

Based on our analysis of entered data, we were able to report on three topics: duplicate CPIs, all error reports, and WCPI audits.

Duplicate CPI numbers for one patient were created most often in areas outside of the registration department. Only 38 out of a total of 467 duplicate CPIs created from January to March 2005 were created in the registration department.

From analyzing the remaining error reports, the three most prevalent errors were Wrong Third Party Code, MAP, and MC7/MCO Bad ID Number. The majority of these errors came from the Call Center, and the fewest from Verification. However, after considering the volume of registrations completed by employees at all departments, the offsite locations had an overall error rate of 0.21%, which was the lowest error rate.

From February 28, 2005 through March 30, 2005 there were four fields on the WCPI audit that were commonly omitted. These fields are Mailing Name Collected, Insurance Unattached and Contains End Dates, PCP in "Contact" Field and "PCP ID" Field, and Account Appropriately Noted at Visit Level. The majority of these omissions came from the Taubman Center and the North Campus Administrative Complex (NCAC) call center, but again, this is most likely due to the high volume of registrations that occur in these areas.

Recommendations

Based on initial findings from the QualityNet program, changes can be made to benefit the quality of registration information collection.

We suggest that during the training process, more emphasis be put on the Duplicate CPI, Wrong Third Party Code, MAP, and MC7/MCO Bad ID Number types of errors to improve registration quality. Also, limiting departments other than Registration access to the PM system will help reduce errors.

Reducing errors in four fields, Mailing Name Collected, Insurance Unattached and Contains End Dates, PCP in "Contact" Field and "PCP ID" Field, and Account Appropriately Noted at Visit Level, in the WCPI audits would have a significant effect on reducing errors. For example, by improving just these fields by 50%, the overall WCPI registration quality will improve by approximately 24%.

Because potential benefits can already be seen after analyzing only a short period of data, the benefit of the QualityNet system itself has the potential to be immense. For the short term, data should continue to be manually entered into QualityNet and error rates and counts should continue to be generated. This information is vital to the reduction of registration errors.

In the future, we recommend the creation or purchase of software that allows error information to be linked with the registration employee that entered it. This way, error-report data could be entered directly into QualityDb, bypassing the QualityNet user

interface and ultimately eliminating the opportunity for documentation errors. Also, in the future, when information that is known to be incorrect is entered into the PM system, it should be immediately tracked, so that ambiguous terms such as “Jane Doe” and a “U” gender code will be fixed more quickly.

INTRODUCTION

The current patient registration process at the University of Michigan Health System (UMHS) is allowing incomplete and incorrect patient information to be entered into the Patient Management (PM) system. Our client requested we create a system to track errors for completeness and correctness. We created the system, QualityNet, to track the requested errors. We provided findings from Error Reports starting on January 1, 2005 and ending on March 30, 2005 and from WCPI audits, February 28, 2005 through March 30, 2005. The purpose of this report is to describe the methods used to create QualityNet and the recommendation based on our results.

Background

The background section is broken up into three sections: information collection, quality assurance, and problems.

Information Collection. The Registration and Insurance Verification department manages patient information collection. As of April 2005 the department includes 86 registration employees:

- 32 employees from Verification
- 21 employees from the North Campus Administrative Complex (NCAC)
- 20 employees from Taubman
- 13 employees from offsite clinics such as the Kellogg Eye Center

Patient information is collected either through patient phone contact, direct face-to-face contact, or through patient verification forms (PVFs) that indicate any changes to a visiting patient's existing information. Patients in the waiting rooms of the hospital's clinics, fill out the PVF forms when visits are made. Also, patient insurance information is collected through online services provided by insurance companies such as Blue Cross Blue Shield and MCare. All patient registration information is entered into the electronic Patient Management (PM) system, which holds each patient's general information (Corporate Person Index [CPI] number, name, birth date, etc.) as well as a backlog of information on past and presently scheduled visits to UMHS caregivers. The records in the PM system can create reports of different field entries.

Quality Assurance. Each time a new registration entry is entered into the system or an old registration record is updated or reviewed, the registration representative entering the data notes that changes have been made to a patient's information in the PM system by using the system's WCPI function. The WCPI function sets a warning on a patient record indicating that the record has been changed. A printout is made of all of the records that have been reviewed within a day. A quality assurance employee randomly selects three changed patient records per each registration representative and fills out a WCPI form. A WCPI audit form is a worksheet in Excel that lists all possible registration fields: a matrix of boxes to check if information is present, not present, or not applicable; and a box for comments for each field. The Registration and Insurance Verification Department performs three to five employee WCPI audits daily, meaning that they notify the registration representative and his or her supervisor about the data

entered and the changes made to the patient's information. The current aim is to audit each employee at least once a week. Also, quality assurance representatives within the Registration and Insurance Verification department receive 18 daily error reports generated from the PM system that indicate potential problems with patient information that was recently created or modified. The error reports contain lists of patient records and fields within the records that are not consistent or contain faulty information.

Problems. Incomplete patient data can cause problems with patient care and billing. For example, incomplete insurance information can lead to insurance company rejections and entering incorrect personal information can create duplicate patient files. Currently, no metric exists to measure the quality of the information entry process. Also, no system is in place to track employee performance.

Scope

The following was the scope of the project.

Included. This project focused on:

- The outpatient registration process at UMHS
- WCPI data for outpatient registration at the Taubman Center, the NCAC call center, Verification and offsite clinics
- 12 of the 18 error reports, (see Appendix A for a complete description), for all of UMHS.

Excluded. This project excludes the following:

- Tasks other than registration information collection
- The inpatient registration process
- The remaining 6 error reports.

The six excluded error reports were not analyzed in the project because either the errors could not be directly linked to a registration employee or they contained lists of potential errors, which could have produced inaccurate error counts. The team hopes that any findings from outpatient registration can be implemented in the registration process of all other departments.

Issues

The following key issues are associated with quality problems within the registration process:

- No current system exists to track employee the completeness and correctness of registrations over time.

- Currently, omissions and errors in patient information collection are occurring and going unnoticed until they are detected by query software that checks for potential errors.

- Incomplete and incorrect registration information can potentially lead to patient care problems and rejections from insurance companies.

APPROACH AND METHODOLOGY

The data-tracking program took multiple steps to complete. The finished system will allow the registration and insurance verification department to track errors over time.

Previous Situation. There is currently no system that checks and queries error reports over time. Presently, error reports come in electronic files such as crystal reports (see Appendix A), and are inputted into specific error report worksheets within an Excel workbook by the Quality Analysis Staff within the Registration and Verification Department.

Charted Process. To better understand the error tracking process, our team created flowcharts. The flowcharts in Appendix D, E, F and G helped in understanding the creation and use of error reports. The error reports documented in the flow charts are described in more detail in Appendix A.

Considered Alternatives. To address the problems and concerns of the current situation, we considered creating a computer program that would present an easy way to store and query error report data in an Access database. To make the program user friendly we decided that building a GUI (graphic user interface) with visual basic would be beneficial because it would allow for a summary of data in a neat table, along with a query function that would for example, report the quantity of errors by departments within the Registration department. The summary data can be transferred from QualityNet into excel so that it can be analyzed to report trends over time. Tracking the trends over time will allow for Registration managers and/or personnel to address major areas of improvement.

Developed System. After flowcharting the error-reporting process, our team researched and reviewed literature pertaining to VB programming and database accessing. Initially, we defined a database structure called QualityDb that would hold all of the error data for easy accessing. This database was created with Microsoft Access 2000. We created three tables: one for employee data, one for error report data, and one for WCPI data. The employee table holds employee names and IDs. The error report table holds counts of different types of errors categorized by date, employee name, registration department area, and clinical area. The WCPI table holds counts of the volume of CPIs audited as well as counts of 'No' answers to the questions in the WCPI audits categorized by date, employee name, and registration area.

Created System. We began QualityNet by designing the GUIs and reviewing them with the client. Once the GUIs were approved, we began programming the computer code in VB. QualityNet has many different functions needed to easily and efficiently manage data. It has functions to add and delete employees and to add, delete, and summarize the

QualityDb data. QualityNet was designed with many embedded input error checking mechanisms to ensure that the data in the database is correctly formatted and logical. Also, the program minimizes the amount of typing needed to enter data. This cuts down on typographical data errors.

Most importantly, QualityNet has the ability to summarize the database data by month. Data can be accessed in different ways to classify the summed data by employee, registration area, clinical area, or overall. This data is then easily copied and pasted into Excel for the creation of graphs and tables.

To facilitate the registration staff with summarizing the data given by QualityNet, our team has assembled templates in Excel that will automatically update graphs and tables when the user pastes data into the program. The graphs can then be used to analyze how registration errors change over time

The system, QualityNet, tracks the requested errors by registration employee, work area, and overall.

Created User's Manual. After the completion of QualityNet, our team wrote a user's manual for the program. The manual consists of screenshots of each form in the system with notes detailing each function of QualityNet. Our hope is that this user's manual will be used to accustom future registration employees to QualityNet, while allowing them to maximize its functionality.

Analyzed Current Information Completion. The Registration and Insurance Verification managers ranked the importance of the each field in the WCPI audit form. Using these rankings, we found completion percentages for the data which will be used to determine the past performance of the registration representatives. The new data collected for a small part of February and throughout the month of March 2005, was entered into QualityNet and used to determine the current state of the process.

Analyzed Current Information Correctness. All of the daily reports listed in Appendix A were summarized and entered into QualityNet. The information in these reports has been collected for the months of January through March, 2005. For the Duplicate CPI report, we were asked by management to categorize by area. Some of the areas included in the Duplicate CPI report were outside of our scope; however, registration and verification management asked us to categorize the data into the following areas:

- ACS Staff
- Admissions
- Billing
- ESA
- M-Line
- M-Labs
- Patient Representatives at Health Center
- Patient Accounts
- Other
- Untrackable

The "Other" category includes all areas outside of registration not included in the list above. The "Untrackable" category was entered when an error was reported but no information regarding the name or area from which the error occurred was tracked. This information helps to further analyze the current registration information quality.

FINDINGS AND CONCLUSIONS

We inputted and analyzed the provided data using QualityNet. We broke up the findings into three major categories: Error Reports, Duplicate CPI, and WCPI.

Error Reports

From the analysis of the other error reports, we found that the Duplicate CPI, MC7/MCO Bad ID Number, and Wrong Third Party Code cause the most problems. The data was analyzed using an error rate that was calculated by dividing the number of a certain error type by the summation of all errors.

Duplicate CPI, Wrong Third Party Code, and MC7/MCO Bad ID Number Cause the Most Problems

From the analyzed data, the top three errors that occurred in the three-month sample we took were: Duplicate CPI, Wrong Third Party Code, and MC7/MCO Bad ID Number. See Figure 1 below for a breakdown of overall error frequency.

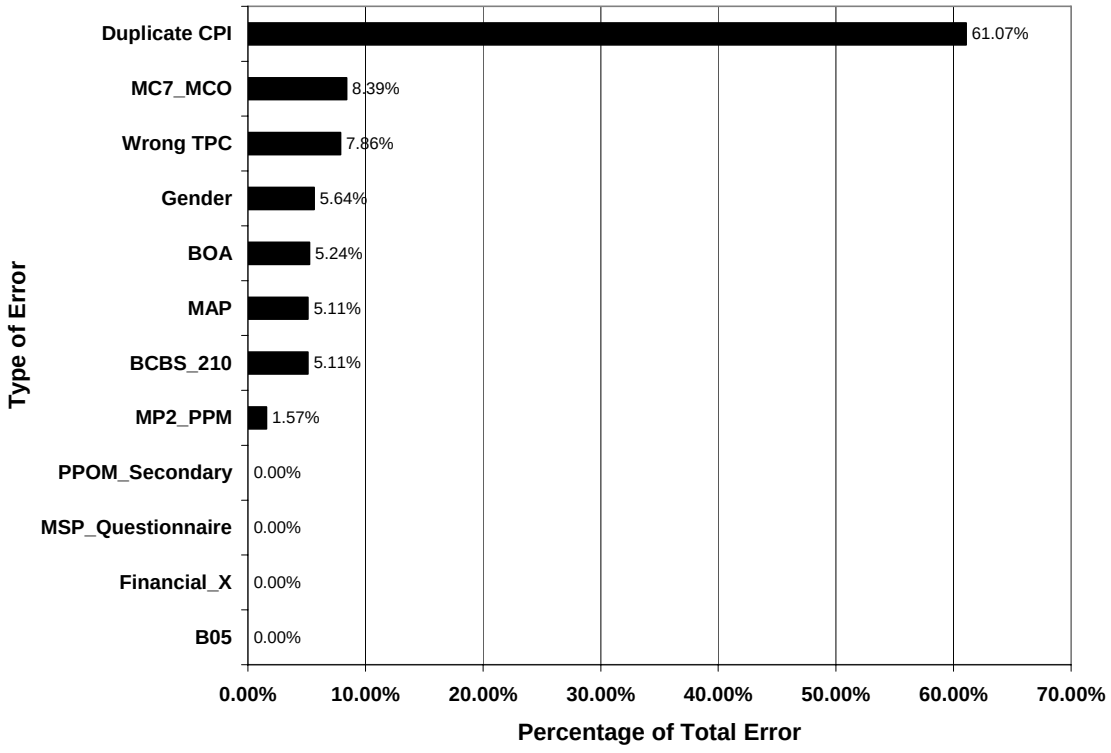


Figure 1. Frequency of Error Types (January-March, 2005)

Frequency of Errors by Area
After analyzing the data, error rates were found for each area of the Registration and Insurance Verification department. Unlike the error rate calculated above, errors were divided by the volume of each department as opposed to the summation of errors.

Overall
Figure 2 below, shows the breakdown of total errors by clinical area. The "other" had the highest amount of errors with 309. As mentioned earlier in the report, the "other" department includes all clinical areas outside of registration and not included in the areas specified below. However, when collecting error report data for January through March, errors that happened outside the department were not split into different clinical areas, aside from the Duplicate CPI data. Therefore, in Figure 2, the "other" category may contain errors from the clinical areas also included in the graph.

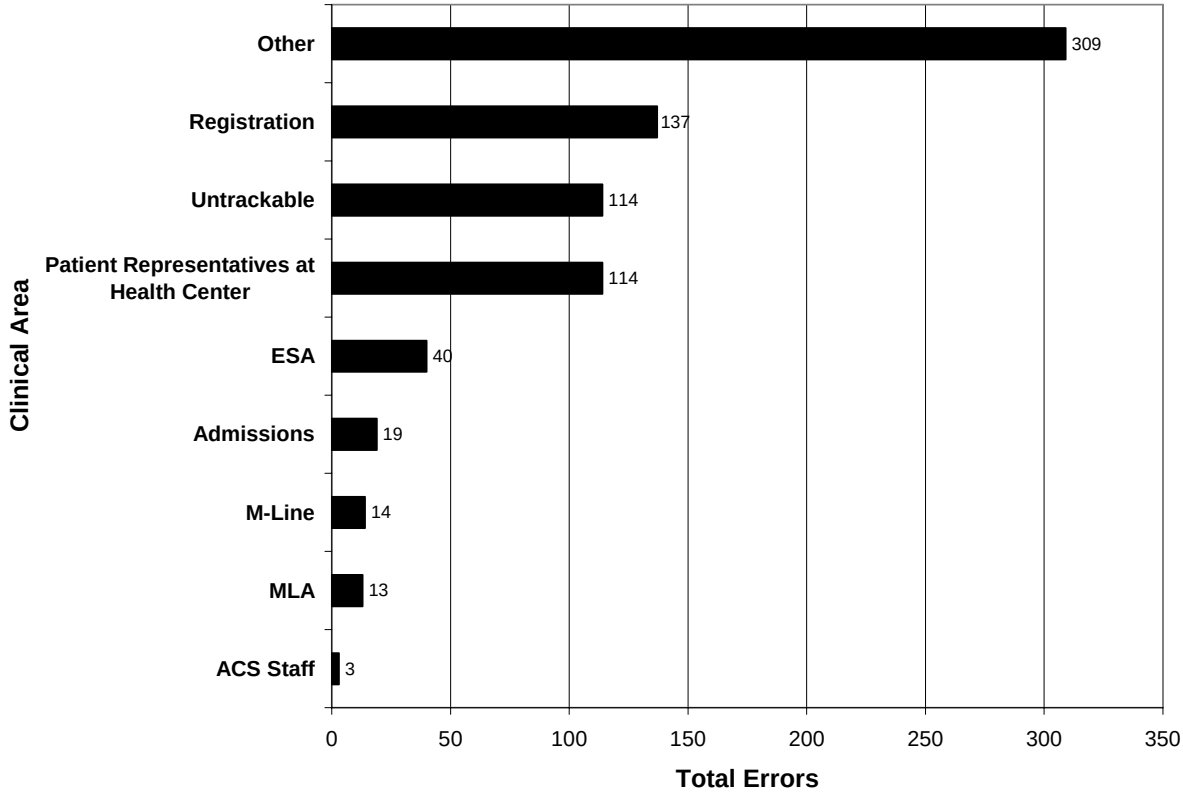


Figure 2. Frequency of Error Types by Clinical Area (January-March, 2005)

NCAC Call Center
Figure 3 below, shows the breakdown of error rates for each report at the NCAC call center. Although all of the errors in the figure below seem rather small, the error that occurred most frequently, Duplicate CPI, occurs every 0.08% of the time. For instance, 8 out of every 10,000 registrations would report in a Duplicate CPI error at the NCAC Call Center.

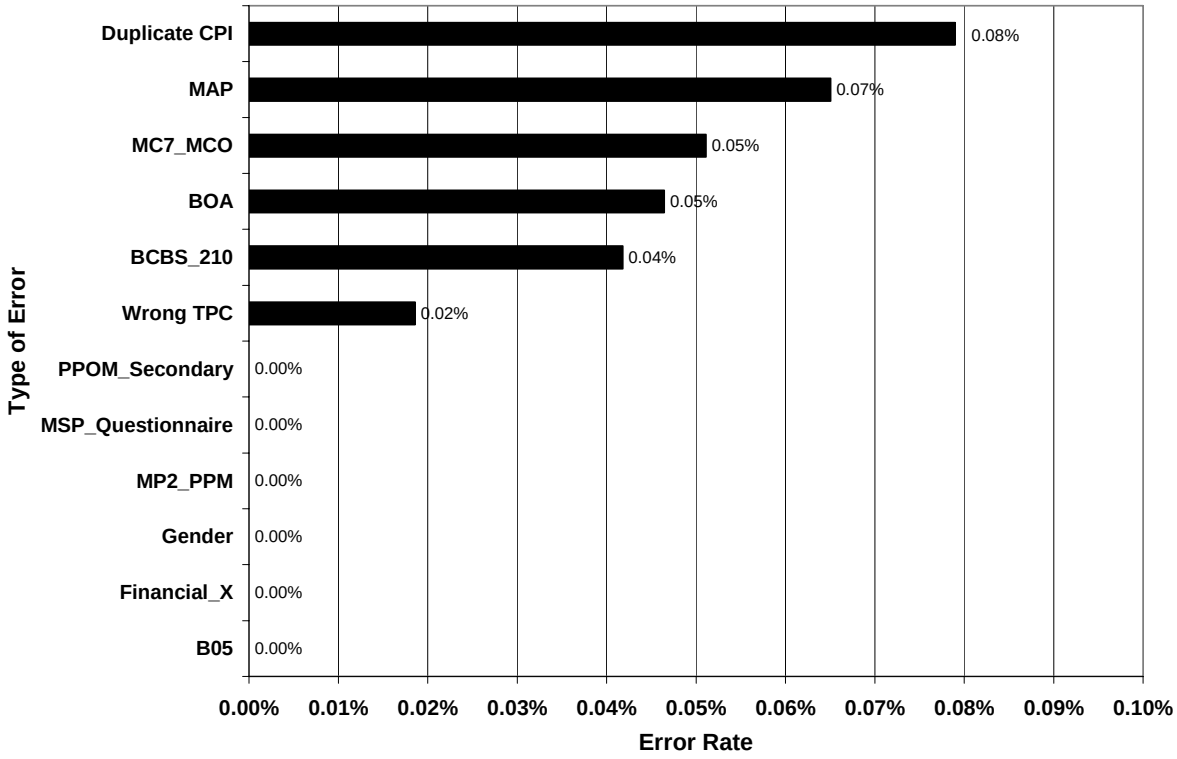


Figure 3. Frequency of Error Types at NCAC (January-March, 2005)

Offsite

The errors that occurred most frequently at Offsite were Duplicate CPI and MC7_MCO Bad ID number which resulted in error rates of 0.06% and 0.04% respectively. See Figure 4 below.

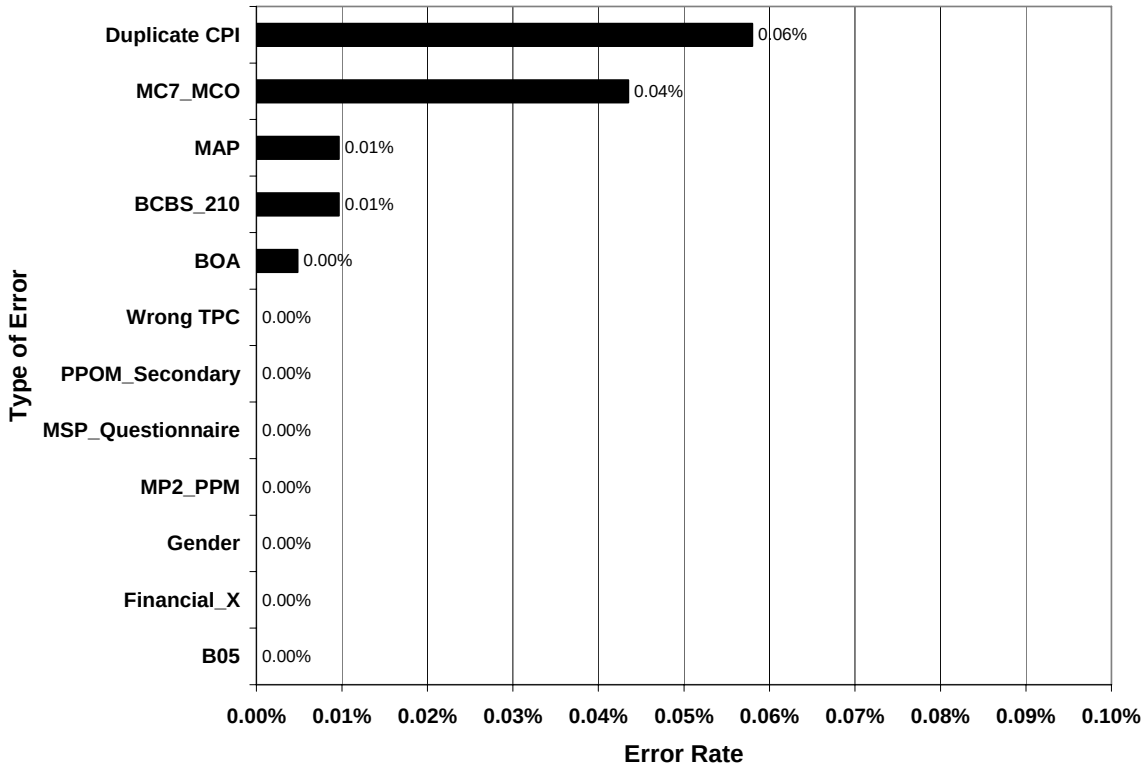


Figure 4. Frequency of Error Types at Offsite (January-March, 2005)

Taubman Center

The errors that occurred most frequently at the Taubman Center were MC7_MCO Bad ID number and Duplicate CPI which resulted in error rates of 0.08% and 0.04% respectively. See Figure 5 below.

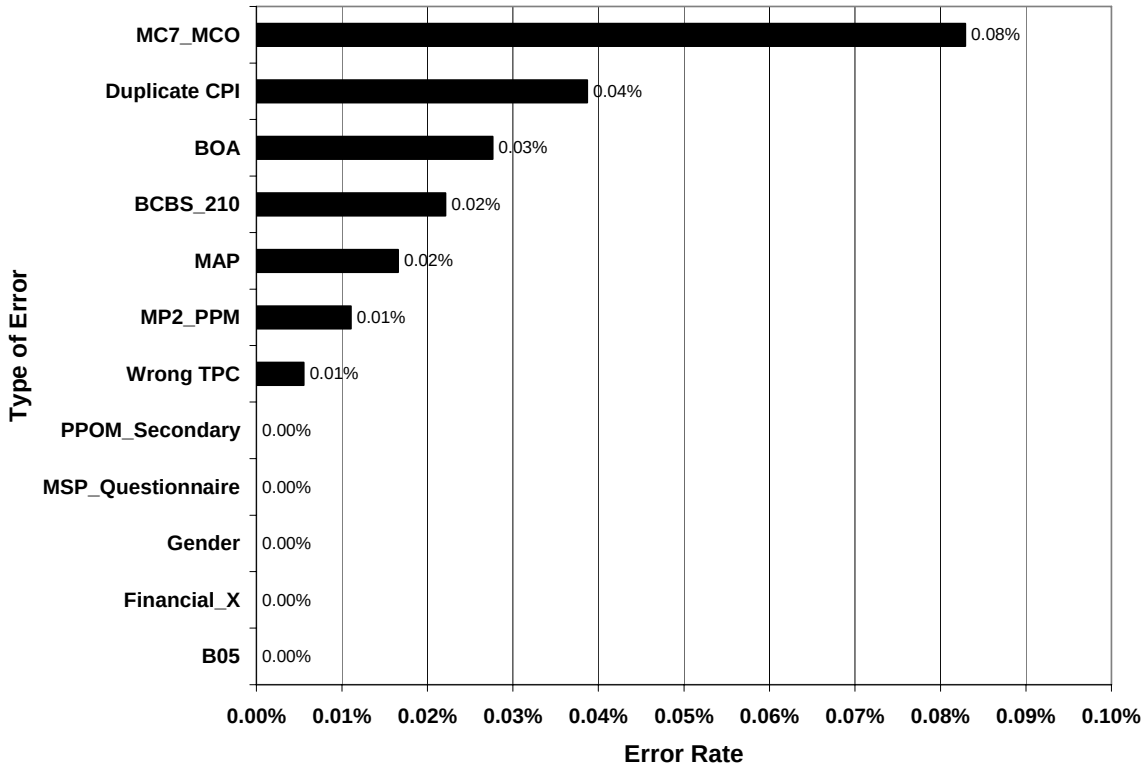


Figure 5. Frequency of Error Types at Taubman (January-March, 2005)

Verification

The errors that occurred most frequently at the Taubman Center were MC7_MCO Bad ID number and MAP which resulted in error rates of 17.39% and 8.70% respectively. See Figure 6 below.

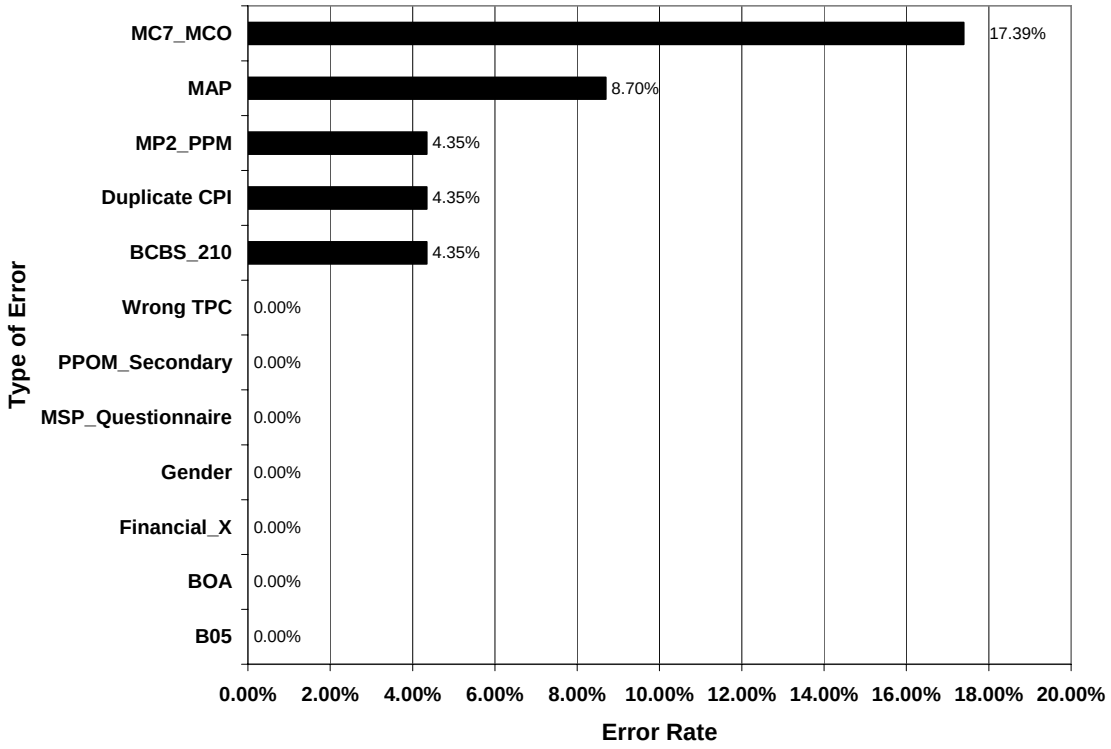


Figure 6. Frequency of Error Types at Verification (January-March, 2005)

Figures 3, 4 and 5 show a large rate of Duplicate CPI errors. Since this particular error could potentially result in incorrect patient care, coupled with the fact that it is occurring in the registration department, the Duplicate CPI error was analyzed in depth.

Duplicate CPI Report

From the analysis of the Duplicate CPI report, we found that there is a high frequency of errors in departments other than registration. The largest volume of duplicate CPIs created in the registration department came from the NCAC call center. The findings for the Duplicate CPI reports are detailed below.

High Frequency of Errors in Other Departments

The problem of duplicate CPIs for a single patient could cause for correct and/or complete not being relayed to caregivers. If multiple CPIs exist for one person, each one might not have all the same information. For example, if a patient's allergies are listed on one of his CPIs but not on another, a caregiver may receive the incomplete information, which in turn could lead to the patient receiving medicines he is allergic to. This problem is occurring in departments throughout UMHS, and needs to be greatly reduced, if not eliminated.

After inputting the Duplicate CPI data for the months of January through March, 2005, we found that 429 duplicate CPIs come from departments other than registration. For the three-month period tracked, the registration department accounted for only 38 of the 467 duplicate CPIs created (see Figure 7. below). The department with the greatest

number of duplicate CPIs (aside from the "Other" category) was the Patient Representatives at Health Center, which had 114. The M-Line, MLA, ESA, and Admissions departments all had duplicate CPI volumes comparable to the registration department.

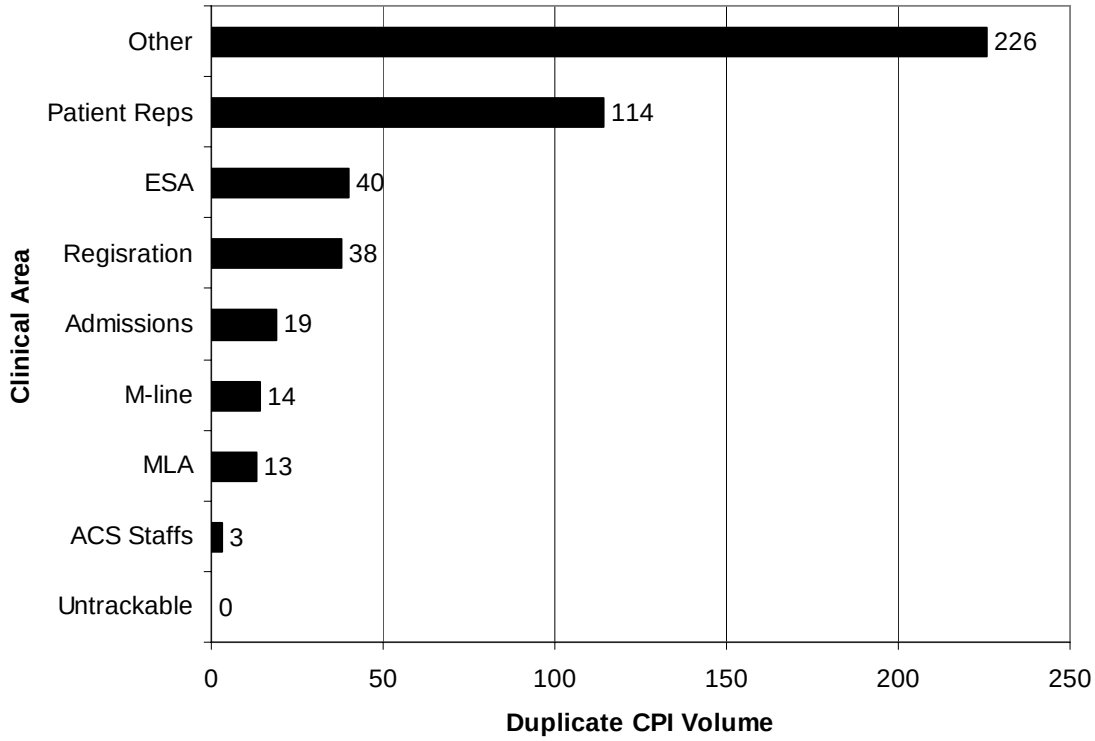


Figure 7. Duplicate CPI Volume by Clinical Area (January-March, 2005)

Largest Volume of Duplicate CPI's At Call Center

The 38 duplicate CPIs generated by the registration department were broken down into the four registration areas: NCAC call center, offsite, Taubman, and Verification. Figure 8. below details the amount of duplicate CPIs created by these areas. The NCAC call center had the highest volume of duplicate CPIs, 17; however, they also have the highest volume with 21,528 registrations. The verification area only had one duplicate CPI, which is to be expected due to a low volume of 23 registrations.

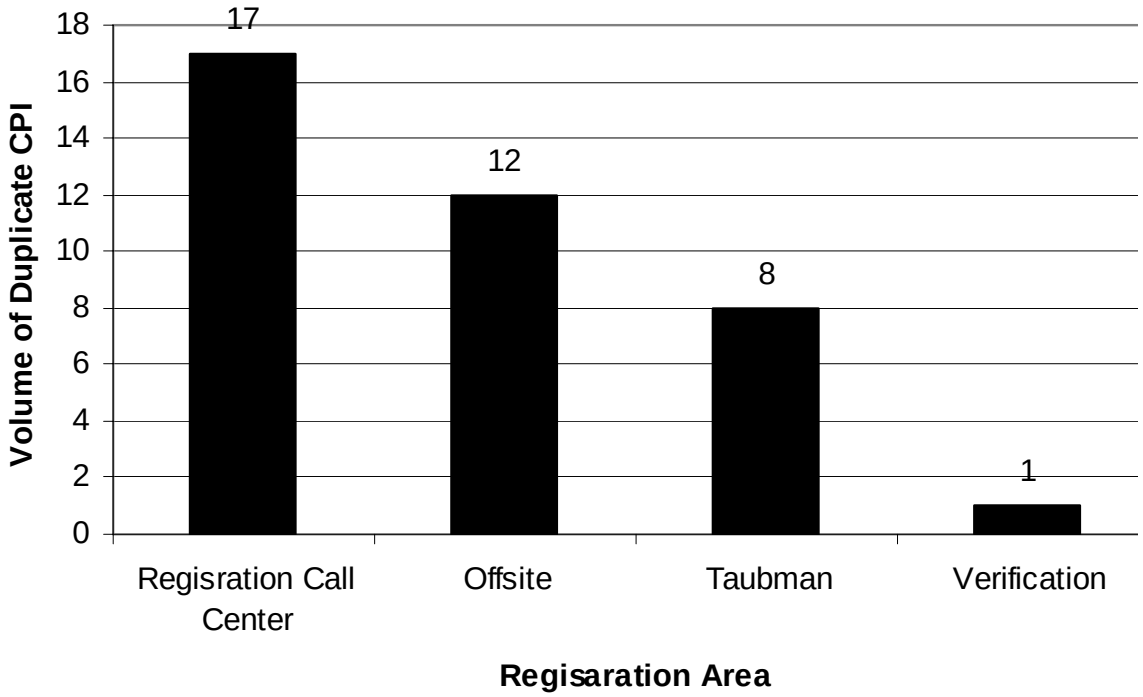


Figure 8. Duplicate CPI Volume by Registration Area (January-March, 2005)

WCPI Audits

From the analysis of the WCPI audit data, we found that specific errors are causing the most errors on the audit form and that the completeness rates were similar across the Taubman Center, NCAC call center, and offsite locations.

Specific Errors Cause the Most Errors on the WCPI Audit Form

After analyzing the data for the month of March 2005, we found that following WCPI fields were very high, resulting in 15 or more errors (The WCPI audit fields check to see if information was entered into the Patient Management System):

- Mailing Name Collected
- Insurance Unattached and Contains End Dates
- PCP in "Contact" Field and "PCP ID" Field? Do They Match?
- Account Appropriately Noted at Visit Level?

See Figure 9. below for a breakdown of which fields resulted in the most errors. The x-axis numbers represent the corresponding fields in the WCPI audit form.

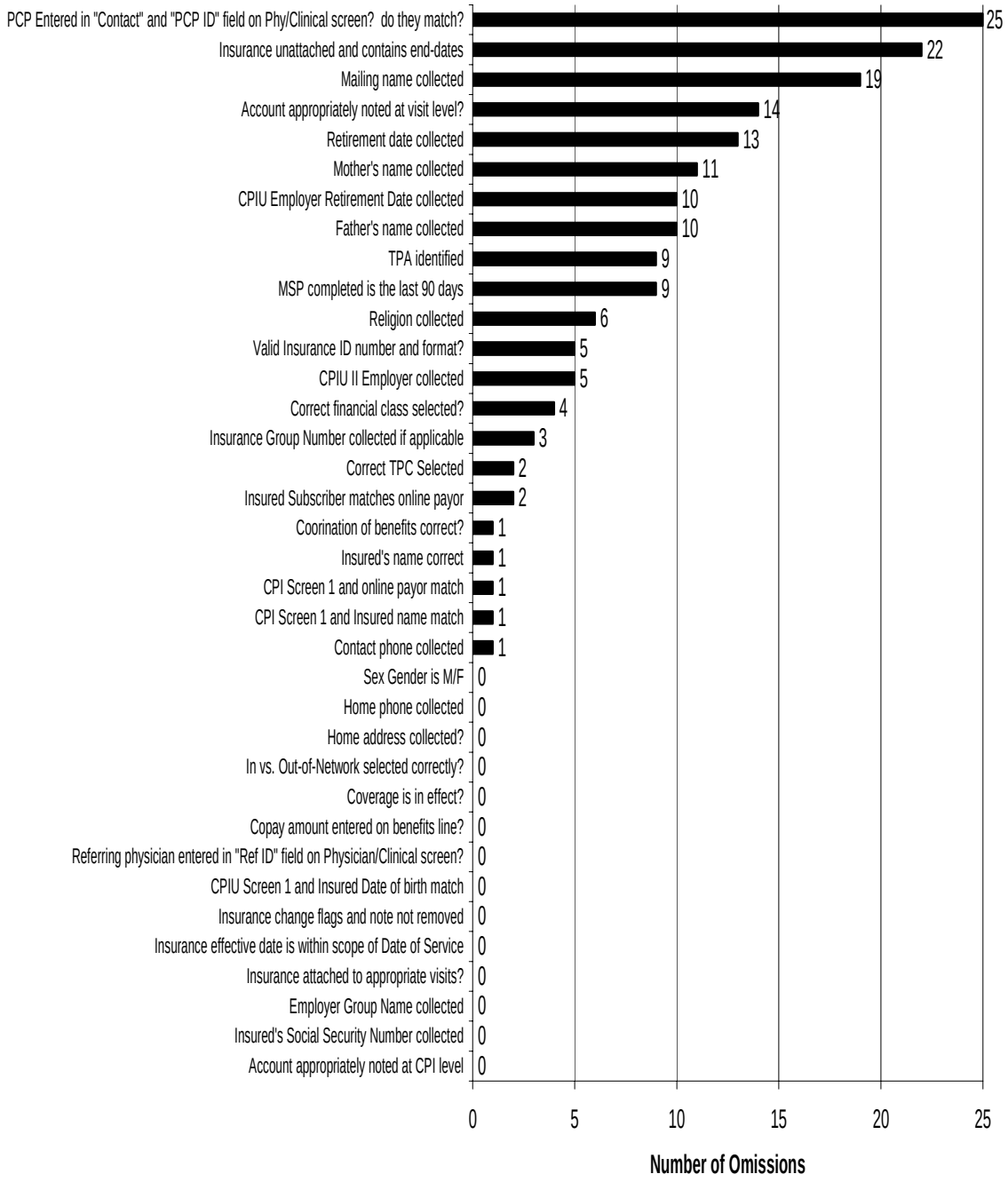


Figure 9. Errors Based on WCPI Fields (February 28-March30, 2005)

Completeness Rates Similar Across Areas

In addition to the frequency of errors based by fields, data was analyzed by area. The completeness rates analyzed were calculated by dividing the number of omissions by the total volume for each area. The completeness rates for Taubman, NCAC, and offsite

locations were 99.21, 98.95, and 98.93, respectively. See Figure 10. below for a breakdown of completeness rates by area.

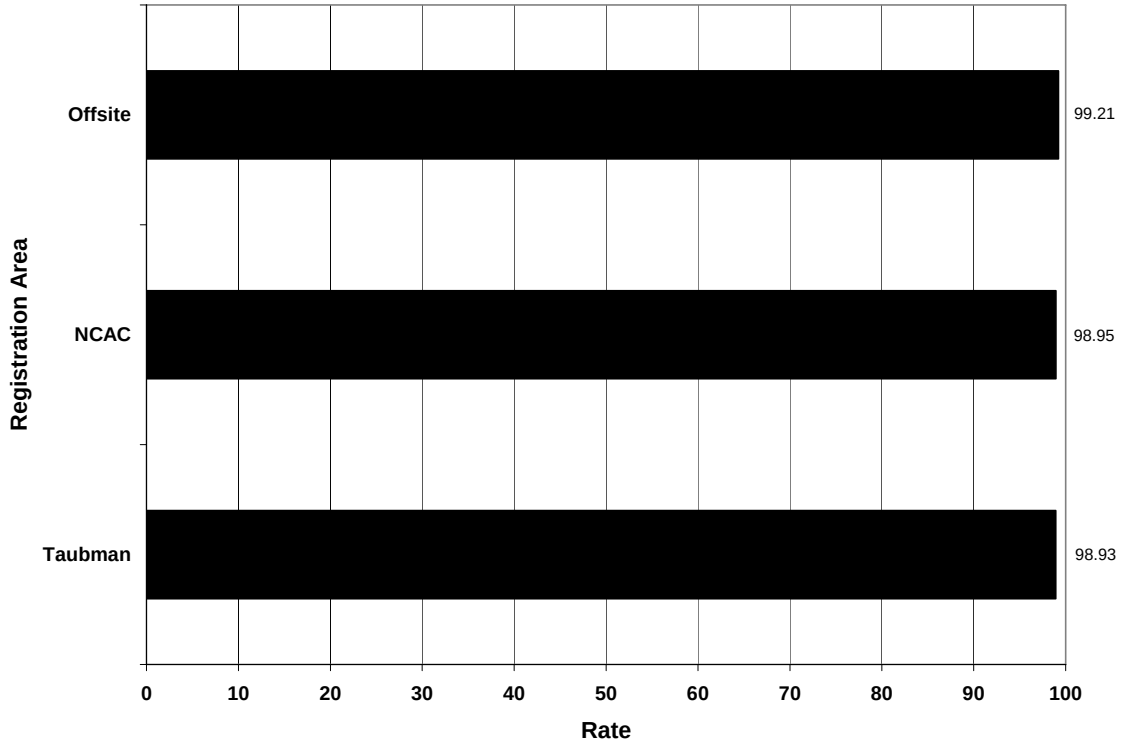


Figure 10. WCPI Completeness Rates by Area (February 28-March 30, 2005)

RECOMMENDATIONS

Based on our results from the QualityNet program we conclude:

Limit Access to Patient Management System
Reducing the amount of registrations occurring outside of the registration department, or limiting access to the PM system to departments other than registration would greatly reduce the number of duplicate CPIs currently being created. From the data that we collected, the Patient Representatives department is creating the highest amount of duplicate CPIs. Limiting PM access to this department would be a great start to the reduction of the total amount of duplicate CPIs generated at UMHS.

Implement Training to Reduce Frequent Errors
We suggest that during the training process, more emphasis be put on the Duplicate CPI, Wrong Third Party Code, MAP, and MC7/MCO Bad ID Number types of errors to improve registration quality. Based on the data collected, if a 50% reduction occurred in just these fields, the *total* amount of errors reported could be reduced by approximately 41%.

Share Training Materials with Other Departments
The "untrackable" field is a key issue that needs to be improved. If it is possible to track down where the errors are coming from, quality can be improved by having the ability to focus on just one department. After analyzing the most troubled department, other departments will be able to base their improvements from the changes made. Also, the number of errors that originated outside of the department is high. These employees have not received the training that the registration personnel employees have received. We suggest that other departments within UMHS should be contacted and given the training materials that guide the registration personnel.

Focus on Specific Problems to reduce WCPI Errors
After analyzing the WCPI audits from March, we suggest that to improve the overall registration quality, employees be notified of the following fields cause the most errors:

- Mailing Name Collected
- Insurance Unattached and Contains End Dates
- PCP in "Contact" Field and "PCP ID" Field? Do They Match?
- Account Appropriately Noted at Visit Level?

By improving these fields by 50%, the overall WCPI registration quality will improve by approximately 24%.

Track Future Data with Quality Net
The future use of QualityNet will allow Registration Department Managers to compile registration error report data. This compiled data can be used to track the performance of registration.

ACTION PLAN

Because potential benefits can already be seen after analyzing only a short period of data, the benefit of the QualityNet system itself has the potential to be immense. For the short term, data should continue to be manually entered into QualityNet and error rates and counts should continue to be generated. This information is vital to the reduction of registration errors.

In the future, we recommend the creation or purchase of software that allows error information to be linked with the registration employee that entered it. This way, error-report data could be entered directly into QualityDb, bypassing the QualityNet user interface and ultimately eliminating the opportunity for documentation errors. Also, in the future, when enough information is collected to portray an accurate picture of the frequency and major sources of the errors, measures should be taken to prevent these errors before they occur. This could be done by restricting PM access, having more strenuous training, or including stricter embedded error proofing methods within the PM system itself.

APPENDIX A: ERROR REPORTS

Error Report	Report Contents	Correction Procedure	Format
WCPI Audit	Includes a list of 36 questions, checking for the completeness of patient information, with columns for "Yes", "No", "N/A", and "Comments"	All questions marked "No" are brought to the attention of the employee responsible for the omissions. A copy of the audit is sent to the employee's supervisor, who then goes over the report with the employee.	System Generated
Financial Class "X"	Includes a list of CPI numbers whose Financial Class is listed as "X" (meaning self-paying) with no explanation.	The patient is contacted over the phone by a registration employee to verify the financial class.	Crystal Report Email
Wrong Third Party Code	Includes a list of CPI numbers whose entered three-character third party code is unrecognized.	The entered third party code is looked up in INSI, the insurance inquiry screen and changed to the correct one. If the code is not listed, it is left alone.	System Generated
Gender Code	Includes a list of CPI numbers whose Gender Code is listed as dummy entry "U" (meaning unknown).	Correct gender is determined and corrected. Registration employee is notified to contact patient to verify the correction.	Crystal Report Email
MSP (Medicare Secondary Payer) Questionnaire	Includes a list of CPI numbers who have Medicare as their secondary insurance and a MSP questionnaire has not been filled out.	The patient is contacted over the phone by a registration employee and a MSP questionnaire is completed.	System Generated
BCBS (Blue Cross Blue Shield) Plan Code 210	Includes a list of CPI numbers with the wrong three-character plan ID. All Michigan BCBS is 210, while out-of-state BCBS is not.	Web Dennis or NASCO is used to determine if the BCBS plan is in or out of state. If it is in-state, the plan ID is changed to 210. The coronation of benefits is then changed accordingly.	System Generated
BOA (Blue Cross out of area)	Includes a list of CPI numbers containing an out-of-area Blue Cross with Medicare attached. They should be listed as B05 instead of BOA.	If the patient does have Medicare and an out-of-area Blue Cross, the entry is changed to B05. If not, it remains listed as BOA.	Email

B05 (Blue Cross with primary Medicare) Report	Includes a list of CPI numbers that have out-of-area Blue Cross with Medicare as the primary payer and no listed mailing address.	The correct mailing address is found from a Blue Cross directory and added.	Crystal Report Email
Duplicate CPI	Includes a list of CPI number pairs that have similar information.	Both CPI entries are checked to determine if they represent the same person. If so, all information is complied into one of the CPIs and the other is deleted.	System Generated
PPOM (Preferred Providers Organization Midwest) Secondary to Medicare	Includes a list of CPI numbers with Medicare as the primary payer, but claims are being mailed directly to the PPOM instead of Medicare.	The payer is located from an on-hand list of PPOMs. The payer is then contacted and the correct address is determined.	Crystal Report
MP2 (MCare PPOM secondary to Medicare) *with PPM*	Includes a list of CPI numbers with MCare as the primary payer, but claims are being mailed directly to the PPOM instead of Medicare.	The claim is mailed to MCare.	Crystal Report Email
PPM (preferred provider MCare) *with MP2*	Includes a list of CPI numbers with an Insurance Group Number of PS5011 (meaning that the patient is a UM employee) and not listed as an MAP.	If it is verified that the patient is a UM employee, the entry is changed to a MAP.	Crystal Report Email
MC7 (MCare/Medicaide) need to choose) *with MCO and Bad ID Number*	Includes a list of CPI numbers that have a contract number without M as a prefix or 01 as a suffix, or if the patient is not shown when the listed ID number is selected. These CPI numbers are only listed if the third party code is incorrect.	The correct contract number is found in AMISYS. If the MCare or Medicaide product needs to have an M or a 01, it is corrected.	Crystal Report Email
MCO (MCare/Medicaide) *with MC7 and Bad ID Number*	Includes a list of CPI numbers that have an incorrect third party code and no chosen physician.	The correct contract number is found in AMISYS. If the MCare or Medicaide product needs to have an M or a 01, it is corrected.	Crystal Report Email

Bad ID Number *with MC7 and MCO*	Includes a list of CPI numbers that are listed as MCare members where no member number is found.	AMISYS is used to verify that the patient had MCare. If so, the correct member number is entered. If not, the insurance information is changed.	Crystal Report Email
MAP (MCare preferred)	Includes a list of CPI numbers of UM employees with no employee code under the Insurance Group Number	The employee and correct group number are found via AMISYS and entered into the PM system.	Crystal Report Email

APPENDIX B. USER MANUAL

QualityNet User Manual

Contents

Overview

QualityNet is a program designed to send data entry error information to and retrieve data entry error from a database. It was created in Visual Basic with Visual Studio .Net 2003 in conjunction with Microsoft Access 2003. It is a standalone, self-contained program that does not need access to the Patient Management (PM) system, the Clinical Data Repository (CDR), or any other University of Michigan Health System (UMHS) program as it runs solely on user input.

What it Does

The user enters counts of errors into the program for each employee within registration and for specified areas outside of registration. The user is then able to retrieve monthly data sums categorized in different ways (i.e. by employee, registration area, and clinical area). This program allows management to pinpoint where errors occur and quantify exactly how many occurred.

Components

The QualityNet files are contained in one folder entitled “QualityNet”.

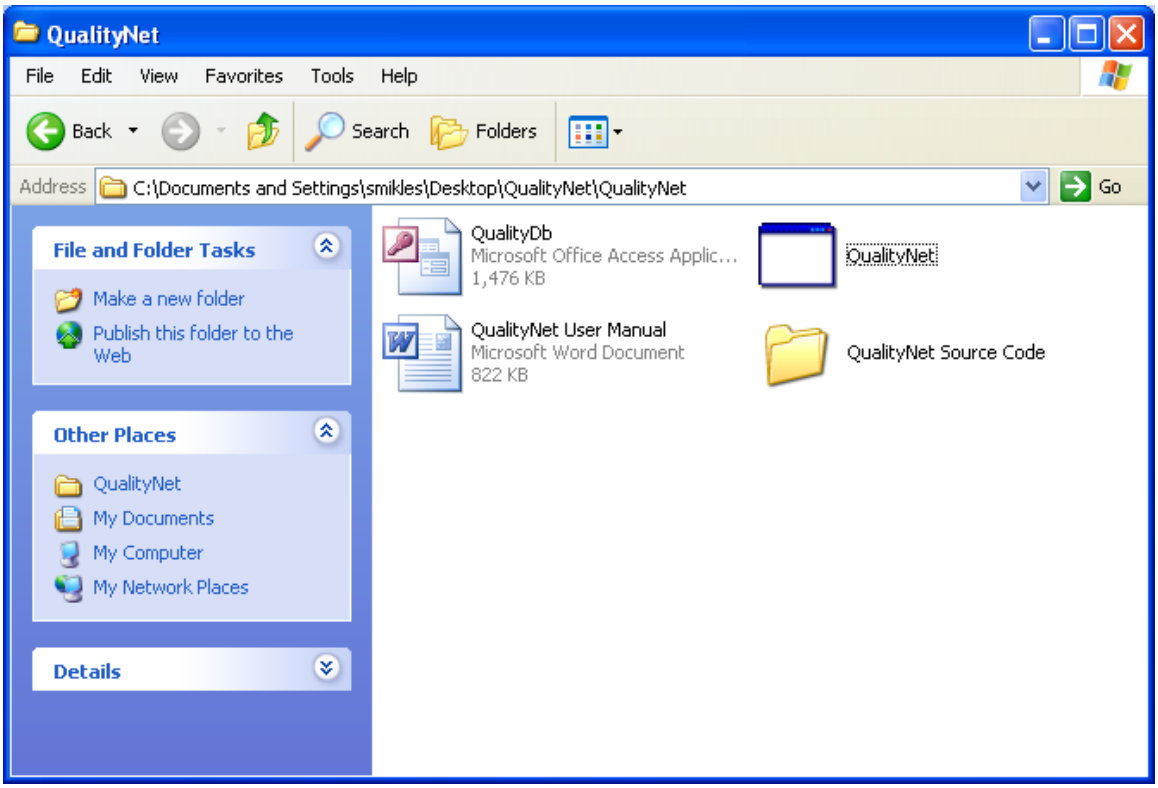


Figure 1: QualityNet Folder

This folder contains 4 files: QualityDb.mdb, QualityNet.exe, QualityNet_User_Manual.doc, and QualityNet.pdb.

- QualityDb.mdb is the Access file that holds all of the error data. It is not password protected and can be directly accessed without running QualityNet.exe. **[Note: QualityDb.mdb and QualityNet.exe CANNOT be open at the same time. QualityNet.exe cannot read the database if it is being used by another program or the user.]**
- QualityNet.exe is the Visual Basic program that is used to easily send information to and receive information from QualityDb.mdb.
- QualityNet_User_Manual.doc is the document you are reading currently.
- QualityNet Source Code is a folder that contains the source codes and files used to create QualityNet. **[Note: These files can only be accessed by Visual Studio .Net 2003. These files should only be touched by someone who has an extensive knowledge of Visual Basic.]**

QualityDb Introduction

This section gives an overview of the QualityDb.mdb file. This file is an Access database that has three tables: Employees, Reports, and WCPI.

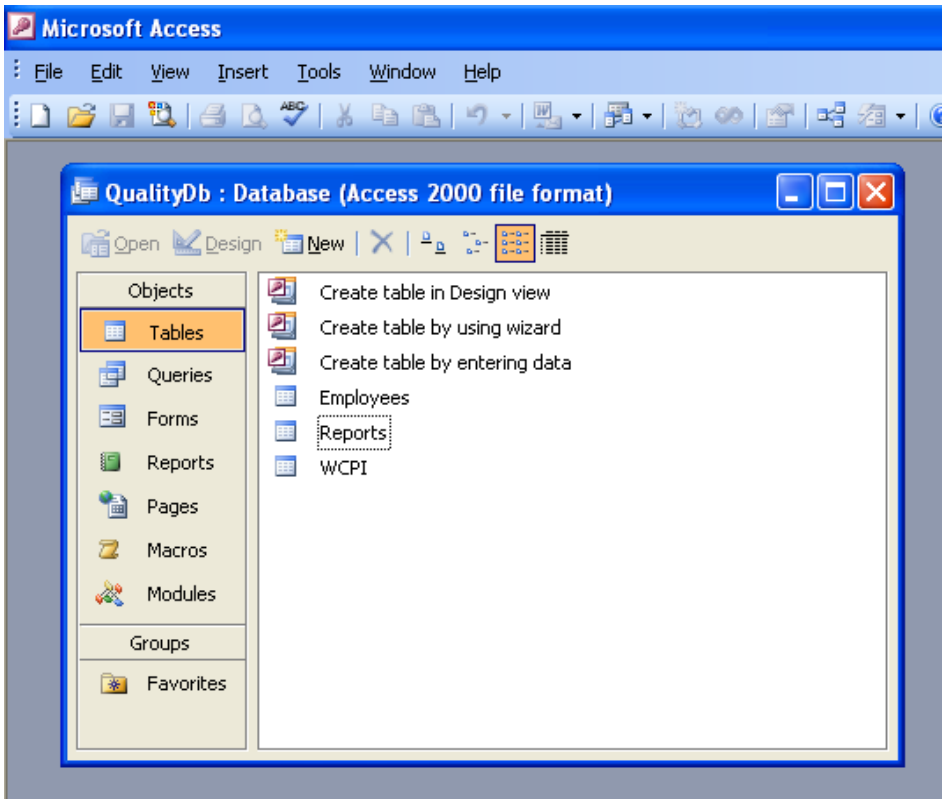


Figure 2: QualityDb Tables

Below is a summary of the fields for each entry in each of these tables. The pictures are of the tables in Design View:

Employees: This table holds information for all of the registration staff.

Employees : Table

Field Name	Data Type	Description
Name	Text	Employee Name
OpID	Text	Operator ID
MainID	Text	Mainframe ID
RegArea	Text	Registrar's Area

Figure 3: Employees Table

- Name: Holds the employee's name.
- OpID: Hold's the employee's operator ID.
- MainID: Hold's the employee's mainframe ID.
- Regarea: Hold's the employee's area within the registration department. Possible areas are:
  - Call: Employee works at the North Campus Administrative Center (NCAC) call center
  - Offiste: Employee works at an offsite clinic.
  - Taubman: Employee works at the Taubman Center.
  - Verification: Employee works in verification at KMS.

Reports: This table holds counts of all of the error report data aside from data in WCPI audits. It holds information for errors generated inside and outside of the registration department.

Reports : Table

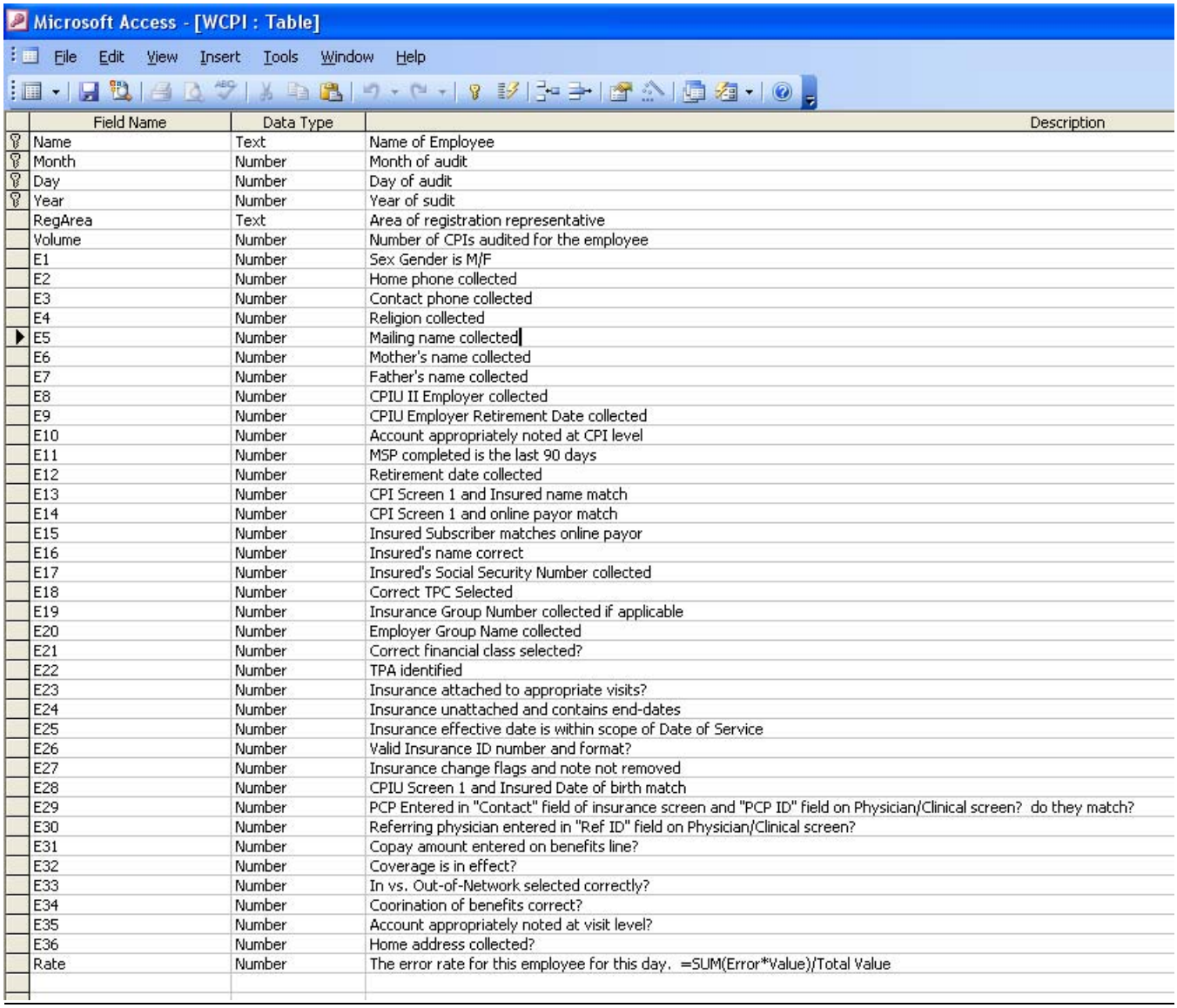
Field Name	Data Type	Description
Name	Text	Employee Name
Month	Number	
Day	Number	
Year	Number	
Volume	Number	Number of WCPI reports performed on the given date
RegArea	Text	Area of Registration representatives
ClinicalArea	Text	Area of person who made error
Financial_X	Number	Financial Clas "X" Error
Wrong_Third_Party	Number	Wrong 3rd party code
Gender	Number	Gender Code U
MSP_Questionnaire	Number	MSP Questionnaire
BCBS_210	Number	BCBS Code 210
BOA	Number	BOA
B05	Number	B05 Report
PPOM_Secondary	Number	PPOM Secondary to Medicare
MP2_PPM	Number	MP2/PPM
MC7_MCO	Number	MC7 MCO bad ID number
MAP	Number	MAP
Duplicate	Number	Duplicate CPI

Figure 4: Reports Table

- Name: Hold's Employee's Name. For errors generated outside of the department, the name "Other Department" is used.
- Month: Whole number value for the month in which the error occurred.
- Day: Whole number value for the day in which the error occurred.
- Year: Whole number value for the year in which the error occurred.
- Volume: This field holds a count of the number of times the WCPI function was activated by an employee/area. This number can be used as an estimate of the number of times an employee either entered a new patient into the PM system or altered existing information in the system.
- RegArea: Hold's a registration employee's area within the registration department. For errors generated outside of the department, the area "Other Department" is used.
- ClinicalArea: Hold's the employee's area within the UMHS. Possible areas are:
    - ASC Staff
    - Admissions
    - Billing
    - ESA
    - M-Line
    - MLA
    - Patient Representatives/ Health Centers
    - Patient Accounts
    - Other: If the error occurs outside of the listed departments.
    - Registration
    - Untrackable: If the error cannot be tracked to any individual or area
- Financial_X, Wrong_Third_Party, etc.: The rest of the fields hold counts of the number of errors that occurred for a specific area or employee on a specific date.

WCPI: This table holds counts of 'No's for each field on the WCPI audits.

- Name: Hold's Employee's Name.
- Month: Whole number value for the month in which the audit occurred.
- Day: Whole number value for the day in which the audit occurred.
- Year: Whole number value for the year in which the audit occurred.
- RegArea: Hold's a registration employee's area within the registration department.
- Volume: the number of CPIs audited for the specified employee on the specified date.
- E1 – E36: fields hold the number of 'No's recorded for each field on the WCPI audit. The numbers correspond to the number of the question asked in the audit (the questions are listed in the 'Description' column in the picture below.
- Rate: This gives the completeness rate indicated by the WCPI data entered. This is how it's calculated: first, the sum is taken of the number of 'No's for a given field multiplied by the weighting for that field. This number is subtracted from the sum of the weights. That number is then divided by the sum of the weights.
  [Note: There is an entry in the WCPI database with the name of 'Rankings'. It has dummy value 99,999 for the month, day, and year. The fields in this entry hold all of the rankings for the fields. DO NOT DELETE THIS FIELD! Absence of this field will cause program errors.]



Field Name	Data Type	Description
Name	Text	Name of Employee
Month	Number	Month of audit
Day	Number	Day of audit
Year	Number	Year of sudit
RegArea	Text	Area of registration representative
Volume	Number	Number of CPIs audited for the employee
E1	Number	Sex Gender is M/F
E2	Number	Home phone collected
E3	Number	Contact phone collected
E4	Number	Religion collected
E5	Number	Mailing name collected
E6	Number	Mother's name collected
E7	Number	Father's name collected
E8	Number	CPIU II Employer collected
E9	Number	CPIU Employer Retirement Date collected
E10	Number	Account appropriately noted at CPI level
E11	Number	MSP completed is the last 90 days
E12	Number	Retirement date collected
E13	Number	CPI Screen 1 and Insured name match
E14	Number	CPI Screen 1 and online payor match
E15	Number	Insured Subscriber matches online payor
E16	Number	Insured's name correct
E17	Number	Insured's Social Security Number collected
E18	Number	Correct TPC Selected
E19	Number	Insurance Group Number collected if applicable
E20	Number	Employer Group Name collected
E21	Number	Correct financial class selected?
E22	Number	TPA identified
E23	Number	Insurance attached to appropriate visits?
E24	Number	Insurance unattached and contains end-dates
E25	Number	Insurance effective date is within scope of Date of Service
E26	Number	Valid Insurance ID number and format?
E27	Number	Insurance change flags and note not removed
E28	Number	CPIU Screen 1 and Insured Date of birth match
E29	Number	PCP Entered in "Contact" field of insurance screen and "PCP ID" field on Physician/Clinical screen? do they match?
E30	Number	Referring physician entered in "Ref ID" field on Physician/Clinical screen?
E31	Number	Copay amount entered on benefits line?
E32	Number	Coverage is in effect?
E33	Number	In vs. Out-of-Network selected correctly?
E34	Number	Coorination of benefits correct?
E35	Number	Account appropriately noted at visit level?
E36	Number	Home address collected?
Rate	Number	The error rate for this employee for this day. =SUM(Error*Value)/Total Value

Figure 5: WCPI Table

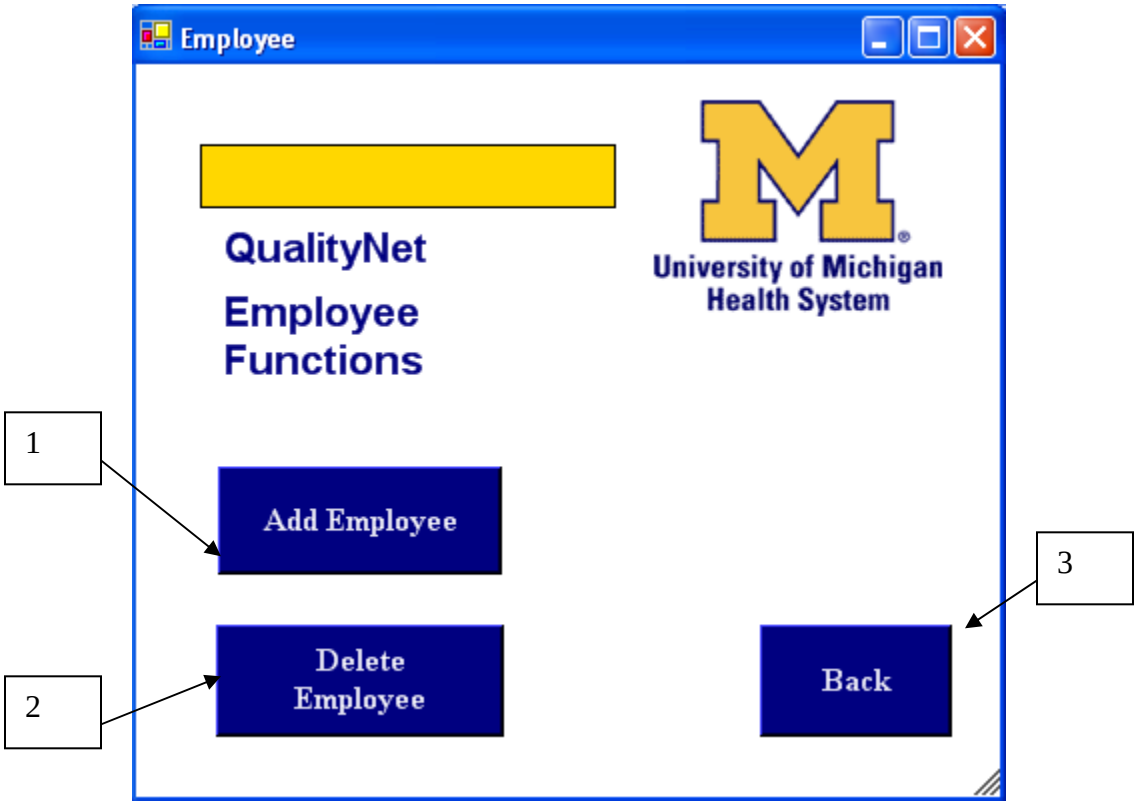
QualityNet Introduction

QualityNet allows the user to add and delete employees and to add, delete, update, and retrieve error data. The next pages show each form and how the user performs certain actions within the forms.

Main Menu

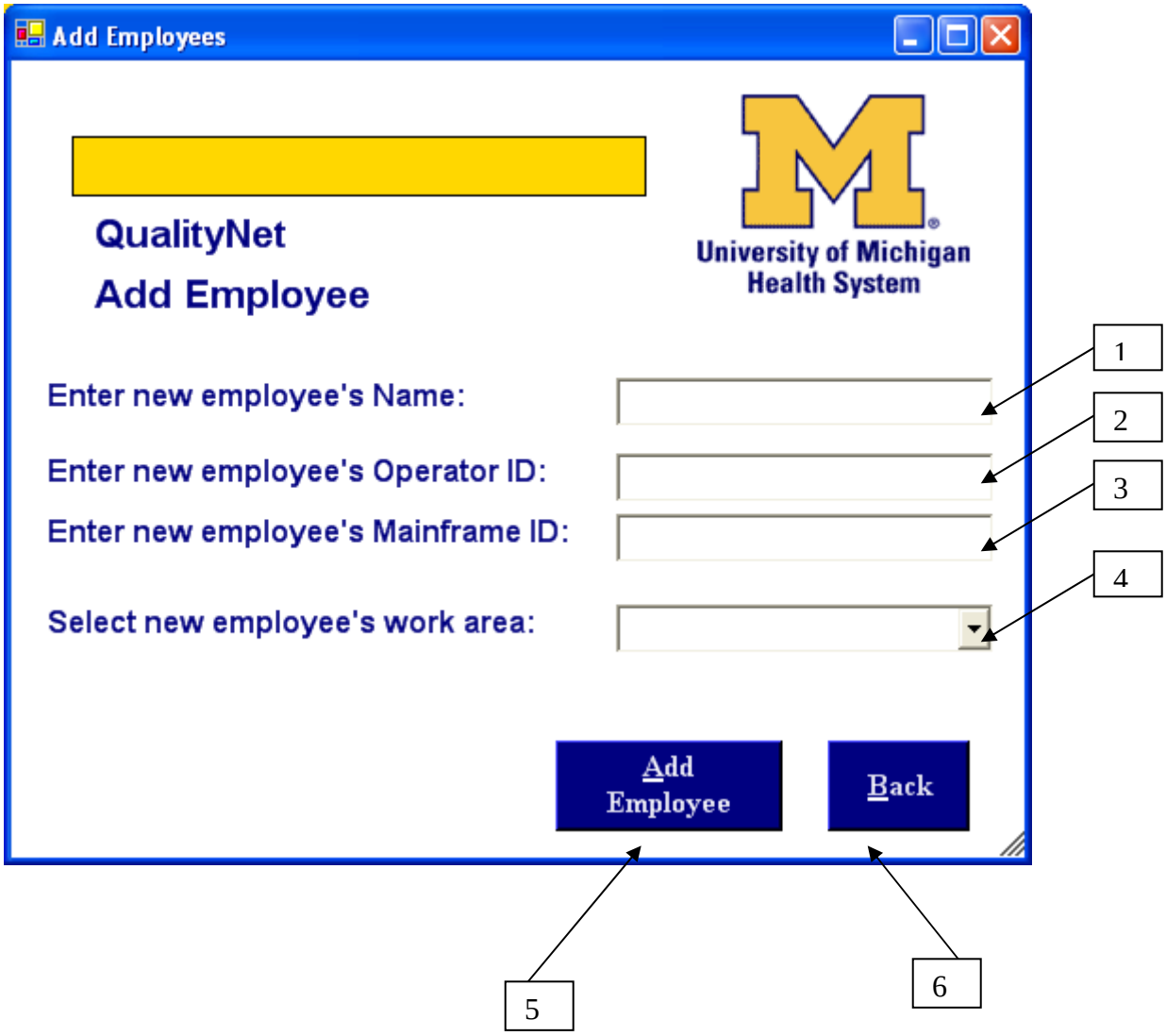
1) Opens the “Employee” form to add or delete employees to the database.
2) Opens the “Manage Data” form to enter error-report data to the database.
3) Opens the “Retrieve Data” form.
4) Terminates the program.

Employee



1) Click to open the “Add Employees” form.
2) Click to open “Delete Employees” form.
3) Click to close the “Employee” form and reopen the “Main Menu”.

Add Employees

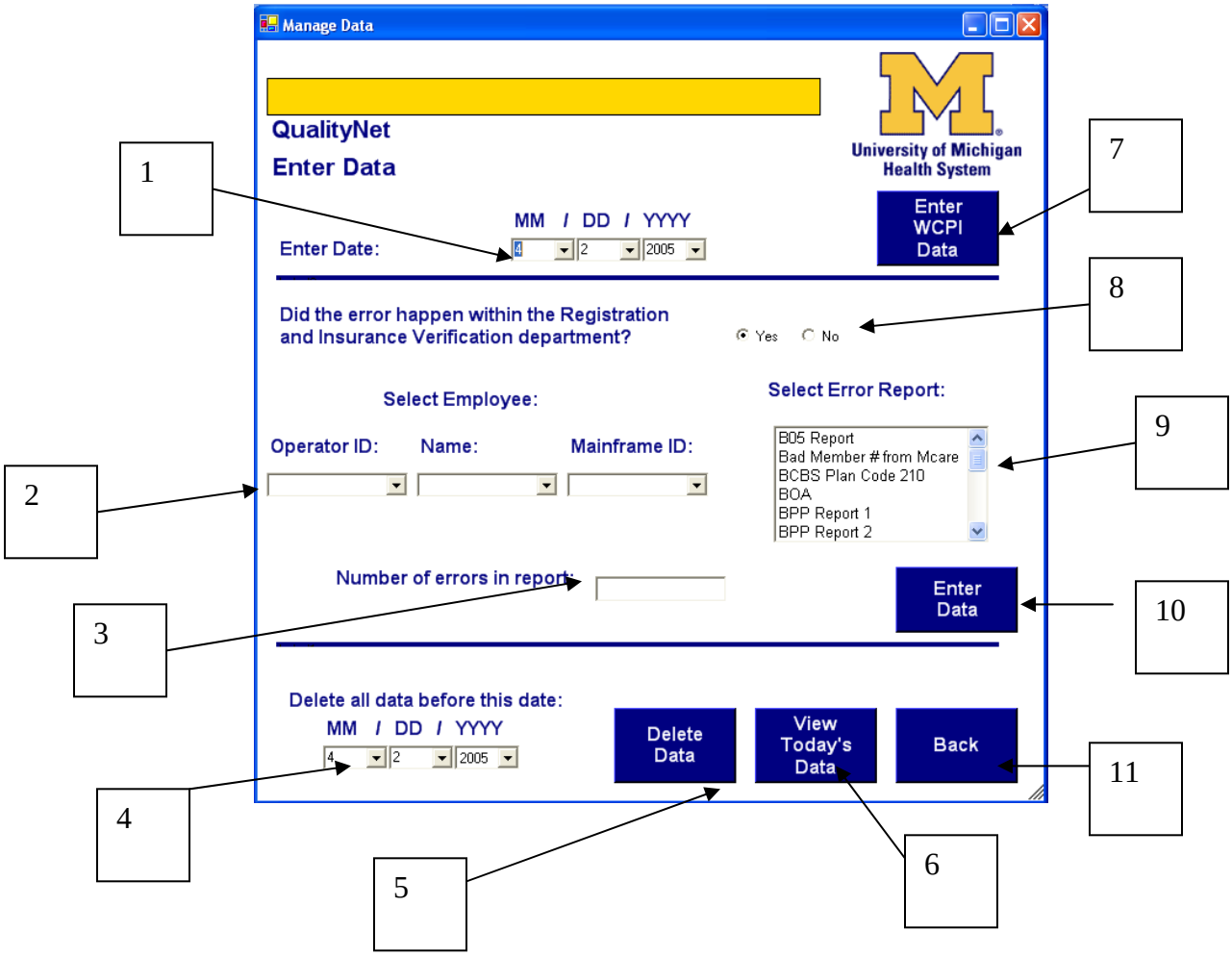


1) Enter the name of the employee to be added to the database in the form “First Name Last Name” without quotes.
2) Enter the 3-character Operator ID that corresponds to the new employee entered in (1).
3) Enter the 4-character Mainframe ID that corresponds to the new employee entered in (1).
4) Select the new employee’s work area from the drop-down list.
5) Click to add the new employee to the data base.
6) Click to close the “Add Employee” form and reopen the “Add/Delete Employee” form.

Delete Employees

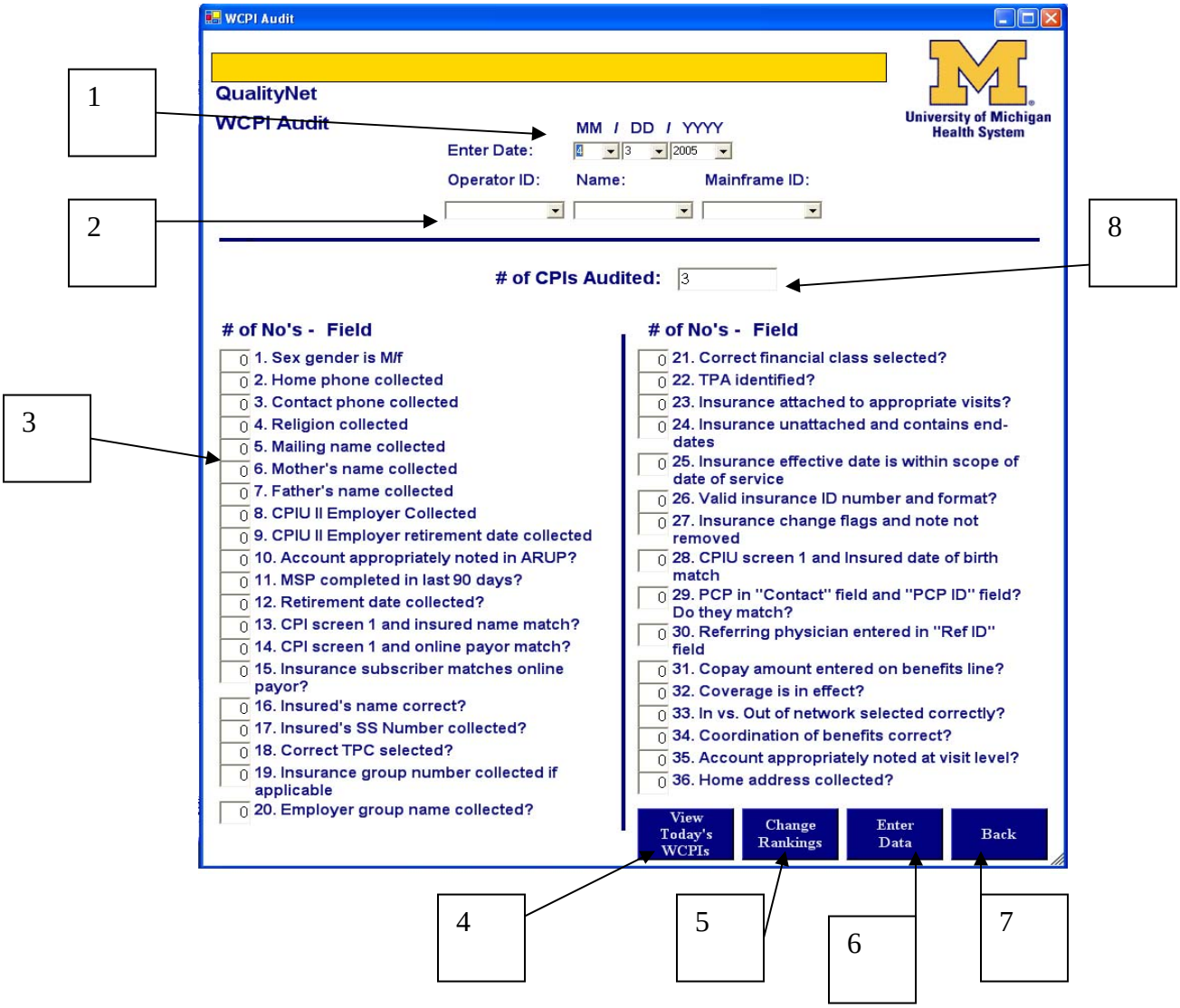
1) Click on the employee to delete.
2) Click to delete the highlighted employee from the database.
3) Click to close the “Delete Employee” form and reopens the “Employee” form.

Manage Data



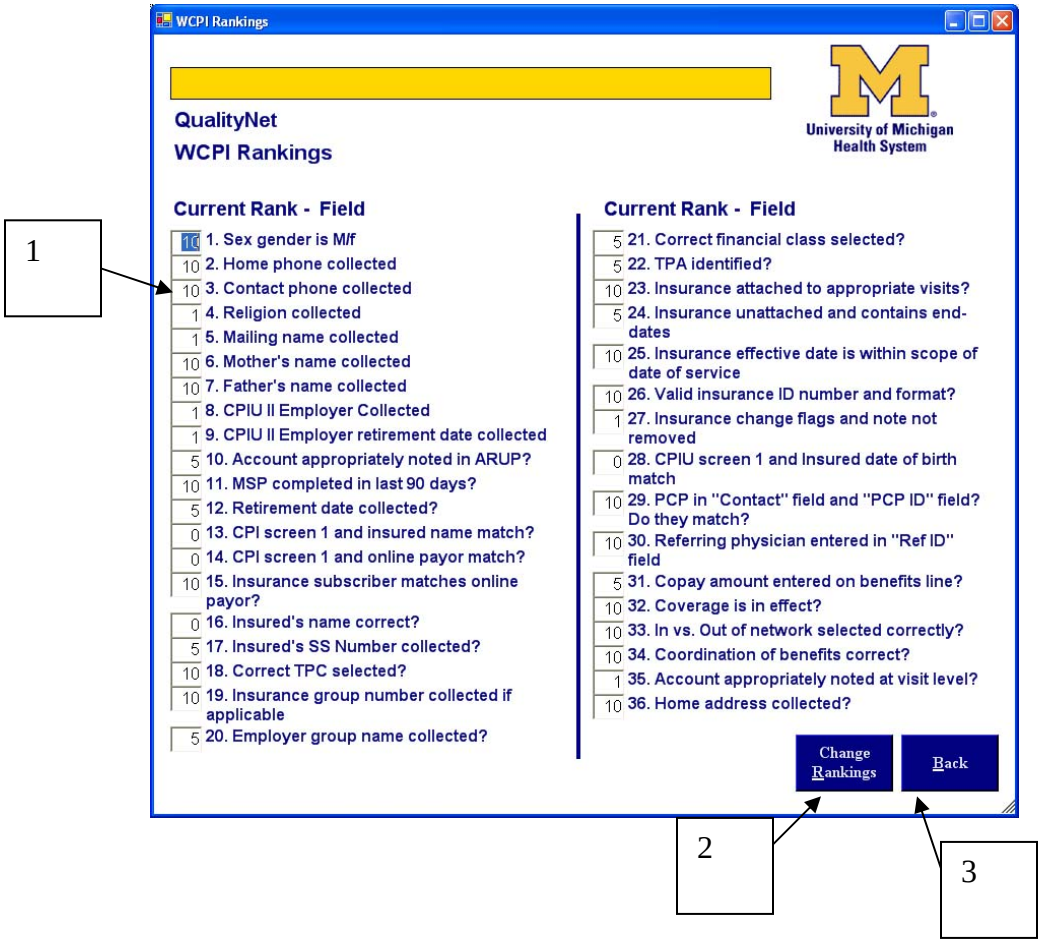
1) Select the date of the error in here. The current date is automatically entered.
2) If "Yes" is selected in (8), select the name of the employee the error(s) correspond to. If "No" is selected in (8), select the clinical area from the list that appears in this area.
3) Enter the number of errors occurring on the selected date, for the selected employee or area, on the selected error report.
4) Select a date for the deletion of data.
5) Click to delete all of the data before the date in (4).
6) Click to display all of the errors that occurred on the day corresponding to the date in the top drop-down box (1) in the "Today's Errors" form.
7) Click to open the "WCPI Audits" form.
8) Click the circular buttons to choose whether the error occurred within the registration department.
9) Select the type of error in the drop down list.
10) Click to add data from (1), (2), (3), and (9) to the data base.
11) Click to close the "Manage Data" form and reopen the "Main Menu" form.

WCPI Audit



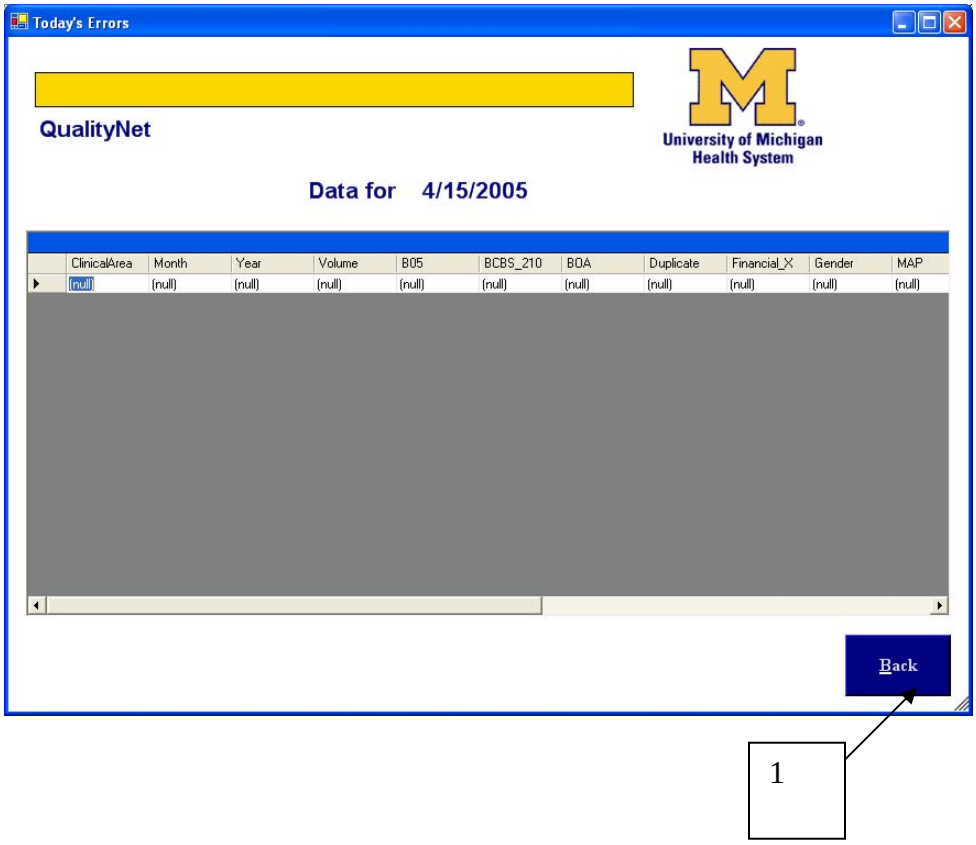
1) Select the date of the audit.
2) Select the name and IDs of the employee the omission(s) correspond to.
3) Enter the number of omissions for each of the 36 questions. (*NOTE*: no entry can be larger than the number entered in (8)).
4) Click to display the WCPI audit data that correspond to the date at the top in (1) in the "Today's WCPI Data" form.
5) Click to open the "WCPI Rankings" form, allowing for the ranking of significance for each type of error to be changed.
6) Click this button to enter all of the error information in to the database after filling in all of the errors into the fields
7) Closes the "WCPI Audit" form and reopens the "Manage Data" form.
8) Enter the number of CPIs audited on the date entered in (1) by the employee entered in (2).

WCPI Rankings

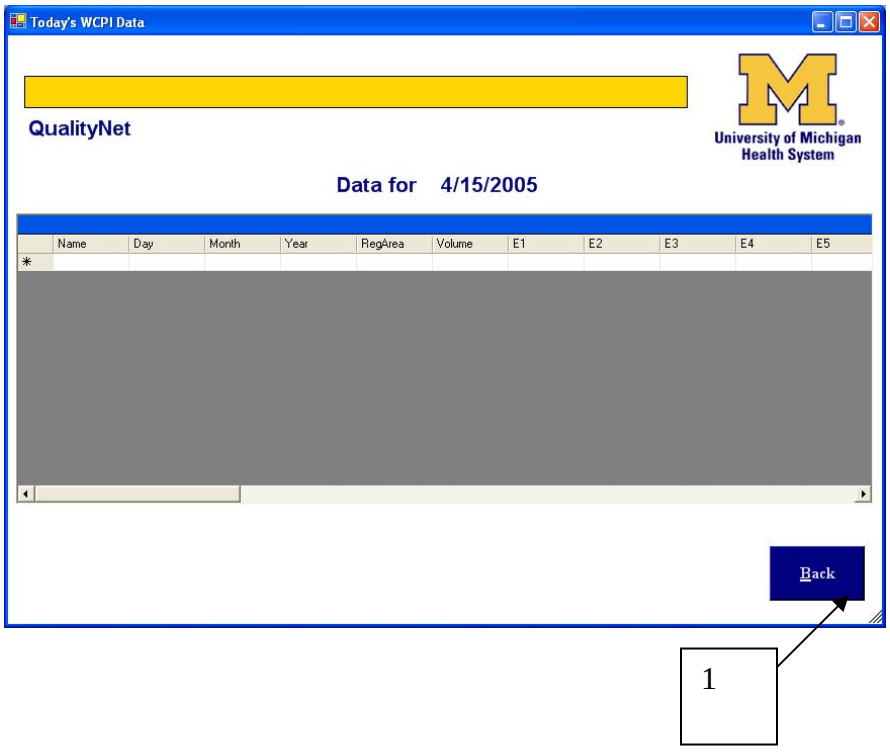


1) Change all of the rankings that you want to be changed. If you want rankings to stay the same to not type in anything new into the box. (Scale: 10=most important, 0=not at all important).
2) Click to assign the new rankings for all of the fields changed.
3) Click to close the “WCPI Rankings” form and reopen the “WCPI Audit” form.

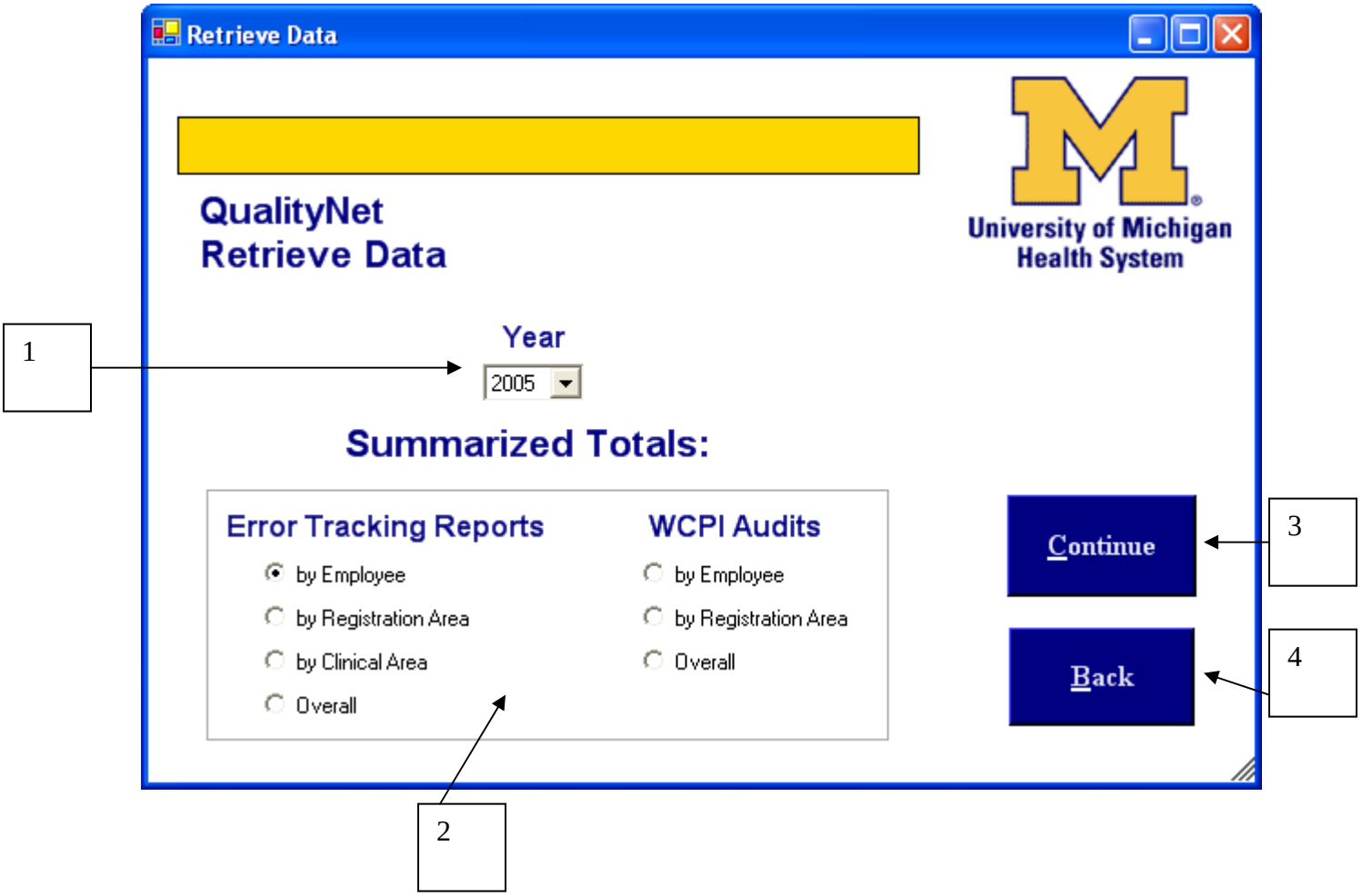
Today's Errors / Today's WCPI Data



1) Closes the current form.

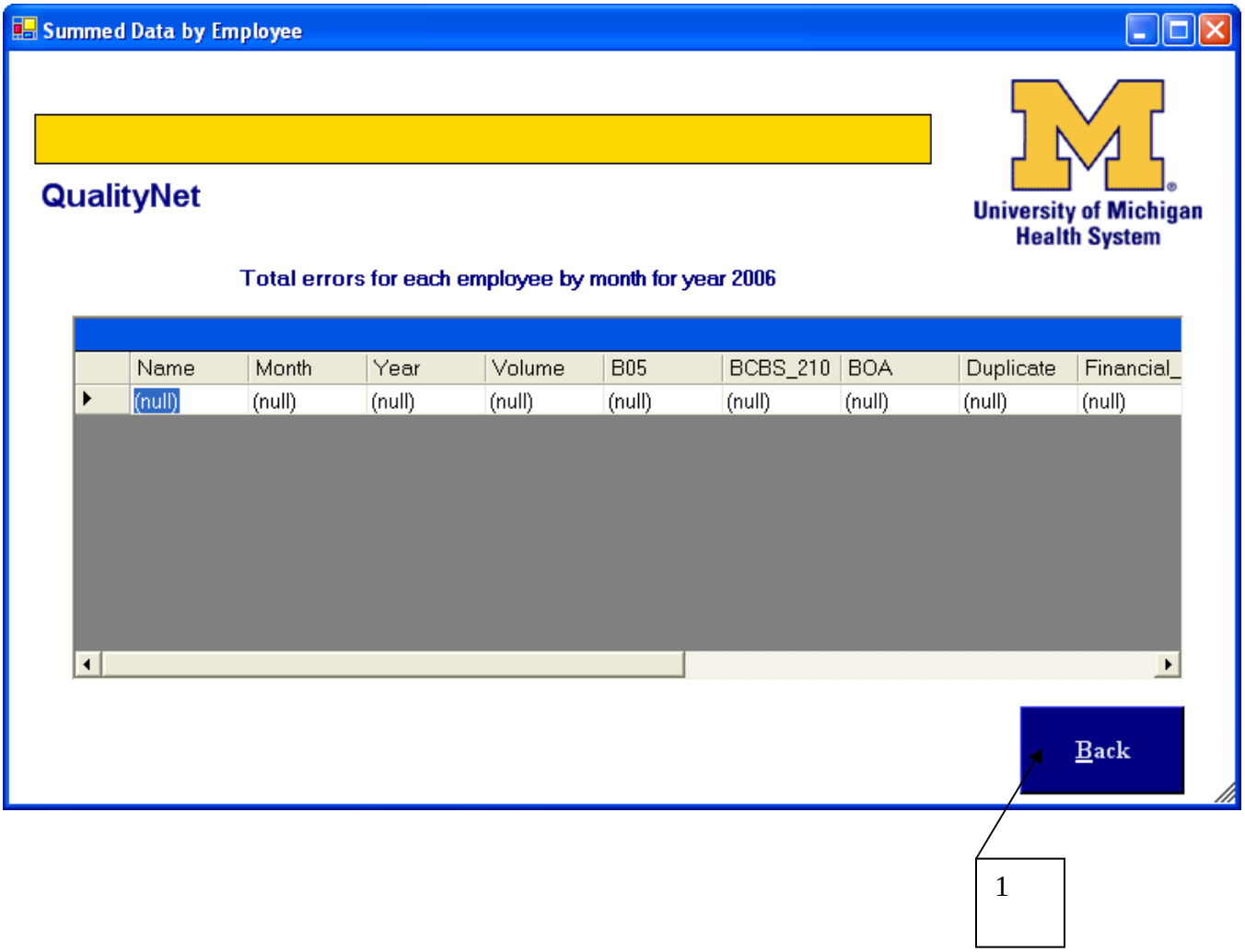


Retrieve Data



1. Select the year of the data you want to retrieve.
2. Select the type of data you want.
3. Click to open a “Summed Data” form
4. Click to close the form and reopen the “Main Menu” form.

Summed Data



1. Closes the form and reopens the “Retrieve Data” form.

Data Usage

Error Data Reentering/Updating

If there is specific data already entered for a specific employee/area on a specific date, entering new data for that same employee/area on that date will rewrite the old data. This can be use to change contested error counts.

Using the Summed Data Forms

The tables on the Summed Data forms are in spreadsheet form and can be easily copied into Excel. This can be done by clicking the grayed tabs on the left-hand side of the table (the tabs that correspond to a row).

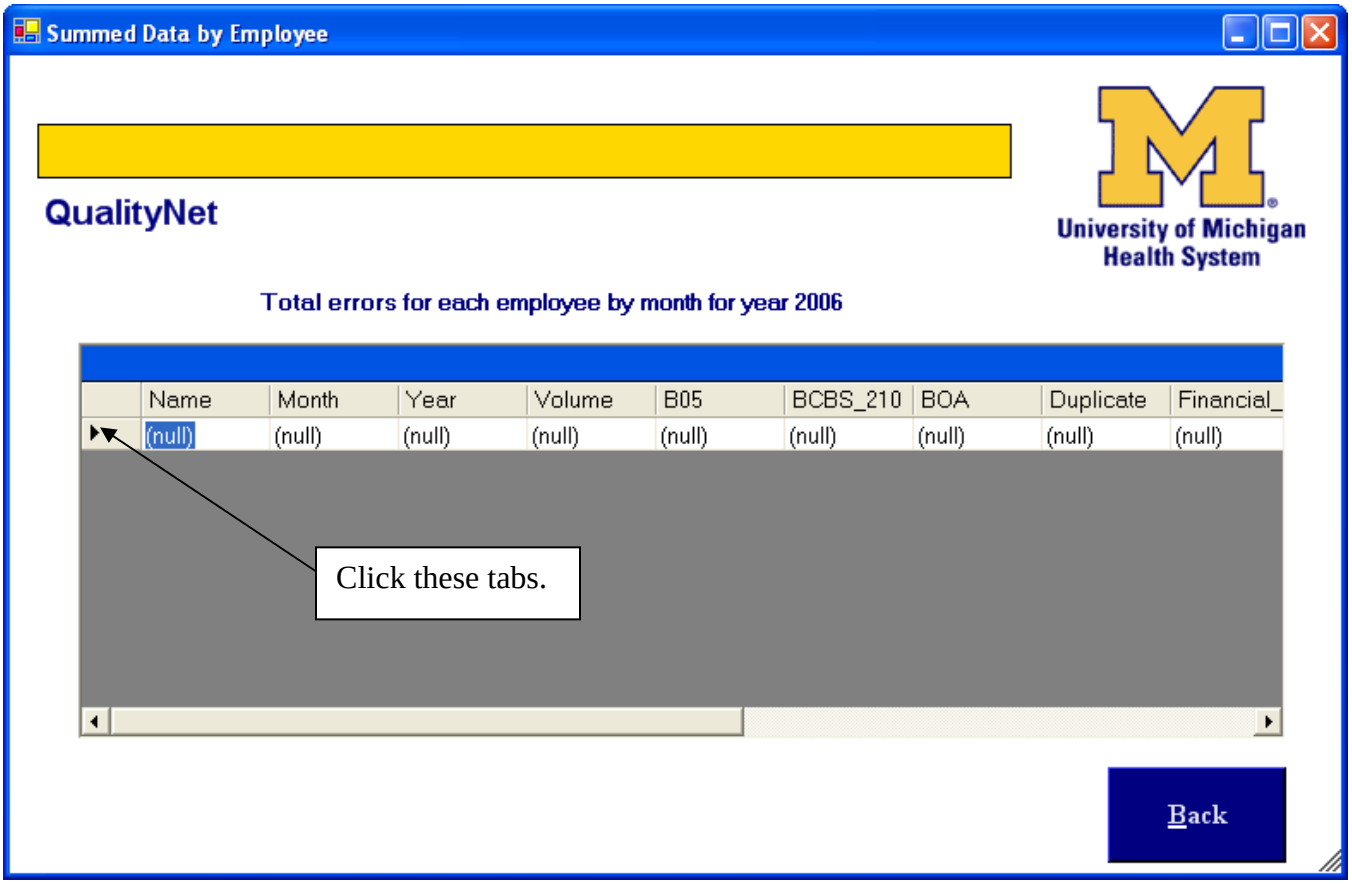


Figure 5: Summed Data Form

The user can click on a tab and, while holding down the mouse button, drag the mouse over the rows that the user wants. The selected rows will turn blue. The user can then copy the rows with Ctrl+C. The user can then select a cell in Excel and use Ctrl+V to paste the rows into Excel.

If there's a lot of data in a table, there's an easier way to select many rows of data. Click the tab of the top row you want to select. Then, scroll downward until you see the bottom-most row you want to select. Hold Shift on the keyboard and then click on the tab of that row. Every row between the two that were clicked will be selected. Data can then be copied into Excel for the creation of tables and graphs.

APPENDIX G : Sample Error Report Fields

WCPIs are reported to registration and insurance verification staff with the following fields: CPI Number, User-ID, Total, Name

PPOM Secondary to Medicare are reported to registration and insurance verification staff with the following fields: CPI #, Vist #, Patient Name, TPC, Address

PPM are reported to registration and insurance verification staff with the following fields: ID, CPI #, Vist, Vist DT, Fuill Name, PT, PC, INS Group NBR. INS Company Name, INS Mail to name

MC7 are reported to registration and insurance verification staff with the following fields: CPI #, Vist Nbr, Patient Fullname, Visitdate, PT, Ins, INS Group EMP ID, Loc

Financial Class "X" are reported to registration and insurance verification staff with the following fields: CPI #, Visit #, Vist Date, FC, Location, Patient Note

BOA are reported to registration and insurance verification staff with the following fields: CPI #, Patient Name, Visit #, Appment Date, location