PRACTICING TECHNICAL COMMUNICATION IN A CLINICAL LABORATORY

By Audrey J. Kerby

This report discusses my MTSC internship with the Regional Laboratory of Mercy Health Partners – Southwest Ohio (MHP-SWO). During my internship, I had the opportunity to write, edit, design, and present communications to and for various audiences. These audiences included the physicians, administrators, nursing staff, and laboratory personnel at a faith-based healthcare organization. In short, my responsibilities were knowledge and document management for a core laboratory in a hospital setting.

This setting provided many challenges ranging from being the first technical communicator for the laboratory to technical difficulties with software to solving knowledge management problems. This report describes how I was able to bring together my expertise as a subject matter expert in the field of Medical Technology and my skill as a technical communicator to address these challenges successfully. Additionally, I discuss how my work has now made a place for technical and scientific communication in the laboratories of MHP-SWO.
PRACTICING TECHNICAL COMMUNICATION IN A CLINICAL LABORATORY

An Internship Report

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Department of English

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<td>Mercy Health Partners – Southwest Ohio</td>
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<td>POC</td>
<td>Point of Care</td>
</tr>
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<td>CHP</td>
<td>Catholic Healthcare Partners</td>
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<tr>
<td>NSB</td>
<td>Network Services Building</td>
</tr>
<tr>
<td>CRO</td>
<td>Corporate Responsibility Officer</td>
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<tr>
<td>CAP</td>
<td>College of American Pathologists</td>
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<tr>
<td>JCAHO</td>
<td>Joint Commission on Accreditation of Healthcare Organizations</td>
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<td>CMS</td>
<td>Centers for Medicare and Medicaid Services</td>
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<td>CLSI</td>
<td>Clinical and Laboratory Standards Institute</td>
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<td>CLIA</td>
<td>Clinical Laboratory Improvement Act</td>
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<tr>
<td>AABB</td>
<td>American Association of Blood Banks</td>
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<tr>
<td>FDA</td>
<td>Federal Drug Administration</td>
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<td>QA</td>
<td>Quality Assurance</td>
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Chapter 1: Introduction to Mercy

I served my internship with the Regional Laboratory of Mercy Health Partners – Southwest Ohio (MHP-SWO), an organization I was already working for in another capacity. During my internship, I served as Regional Laboratory Compliance Manager. I had accepted this position while still completing my course work, and it provided an exceptional opportunity for a unique technical communication internship. My internship lasted nine months, from April 2004 to December 2004. The length of the internship exceeded the normal length of most MTSC internships due to my technical communication responsibilities constituting approximately one-half of my total job responsibilities at the Regional Laboratory of Mercy Health Partners – Southwest Ohio.

My technical communication responsibilities included writing, revising, and placing online the Laboratory’s Point of Care (POC) Manual. During this major project, I also completed general laboratory policies and procedures, designed quality assurance and result reporting forms, prepared an audioconference presentation, and composed compliance letters and memos to the organization’s physicians. In general, I participated in the knowledge management of the laboratory. Additionally, I performed these duties in an organization whose culture is driven by their deep-seated mission and values. I discuss the organization’s culture in the next section.

The Organization

Mercy Health Partners of Southwest Ohio is a regional component of a larger not-for-profit healthcare system – Catholic Healthcare Partners (CHP). Both the parent system and MHP-SWO are comprised of faith-based institutions that have long histories and distinctive cultures.
The Regional Laboratory of Mercy Health Partners – Southwest Ohio’s parent company is Catholic Healthcare Partners. CHP is the largest not-for-profit healthcare system in Ohio and is the seventh largest in the United States. CHP has more than 100 healthcare corporations in Ohio, Indiana, Kentucky, Michigan, Pennsylvania, and Tennessee with the home office located in Cincinnati, OH. Originally founded in 1986 by the Sisters of Mercy, Regional Community of Cincinnati, CHP is co-sponsored by five Catholic organizations:

- Sisters of Mercy, Regional Community of Cincinnati
- Sisters of Mercy, Regional Community of Dallas, PA
- Sisters of the Humility of Mary
- Franciscan Sisters of the Poor
- Covenant Health Systems

The co-sponsors of CHP, as a system, all share the same vision, mission, and values. CHP’s vision is as follows:

Through actions reflecting our values, we will help people to improved health and well-being in ways that are both distinctive and measurable. Ever conscious of the need to balance our mission and our financial stewardship, we will pursue this future with a passionate commitment to evolving a dynamic culture, promoting trusting relationships, seeking innovation and demonstrating value for those we serve.

CHP identifies the four foci in the last sentence of the vision as their “key result areas.” The first area, evolving a dynamic culture, comes directly from CHP’s history. CHP was born of numerous mergers and acquisitions, and continues growing today. By stating their commitment to allow the culture to evolve, they are recognizing the diverse cultures that have combined to build CHP. The last three areas are actions that allow the culture to continue to grow and change. These four “key result areas” together are used to frame the annual operating objectives for the system. In framing their operating objectives around
their vision, CHP succeeds in tying their vision to their mission and to the everyday operation of the system.

CHP’s mission is a simple one, with the religious overtones you would expect from a faith-based organization, “to extend the healing ministry of Jesus by improving the health of our communities with emphasis on people who are poor or under-served.” Providing healthcare to the local communities is CHP’s main purpose. CHP takes special interest in the indigent, lower income, and poverty stricken populations in these communities. Along with these groups, CHP provides a wide range of healthcare services for all members of the areas where their facilities are located. In order to advance their mission, they provide what they call value-driven care.

From this practice of value-driven care, the “core values” of the organization have evolved. The six core values are behaviors that are to be demonstrated by not only the organization as a whole, but by every employee at every level. The core values are as follows:

- Compassion
- Excellence
- Human dignity
- Justice
- Sacredness of life
- Service

These core values are posted in every department and in every facility of CHP. They are a part of every program, service, and job. I contemplated the inclusion and the impact of the core values in every document I created or reviewed. Excellence, Service, and Human Dignity played key roles in my work. My documents needed to be accurate (Excellence), to provide information or knowledge (Service), and to consider the diversity of my audience (Human Dignity). Additionally, the core values are an influence in how CHP governs the organization.
CHP governs the organization through a federalism model. Much like the governance of the United States, CHP is recognized as the central authority with the individual regions reserving certain residual powers of self-government. In this model, the co-sponsors have defined the core values, mission, and vision as their version of the constitution. CHP’s Executive Management Team and Board of Trustees are responsible for major decisions, analyses, and recommendations for all parts of the system. The parts of the system are the regions, which represent the states in this model. There are nine regions residing in four states in CHP as listed in Table 1. Mercy Health Partners of Southwest Ohio is the region where I worked.

<table>
<thead>
<tr>
<th>CHP Region</th>
<th>City, State</th>
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<tbody>
<tr>
<td>Community Health Partners</td>
<td>Lorain, Ohio</td>
</tr>
<tr>
<td>Humility of Mary Health Partners</td>
<td>Youngstown, Ohio</td>
</tr>
<tr>
<td>Kentucky/Indiana Region</td>
<td>Paducah, Kentucky</td>
</tr>
<tr>
<td>Northeast Region</td>
<td>Scranton, Pennsylvania</td>
</tr>
<tr>
<td>Northern Region</td>
<td>Toledo, Ohio</td>
</tr>
<tr>
<td>Southwest Ohio Region</td>
<td>Cincinnati, Ohio</td>
</tr>
<tr>
<td>St. Mary’s Health Partners</td>
<td>Knoxville, Tennessee</td>
</tr>
<tr>
<td>West Central Ohio Health Partners</td>
<td>Lima, Ohio</td>
</tr>
<tr>
<td>Western Ohio Region</td>
<td>Springfield, Ohio</td>
</tr>
</tbody>
</table>

Table 1: CHP’s regions and their locations

**Mercy Health Partners of Southwest Ohio**

Mercy Health Partners of Southwest Ohio is an integrated healthcare delivery network located in southwest Ohio, and they follow the same mission, vision, and core values of CHP. MHP-SWO serves the area surrounding the Interstate 275 loop with five acute care hospitals and four long-term care facilities. The five acute care hospitals are located as seen in Figure 1. Other programs and services include social service agencies, urgent care
centers, health centers, home health agencies, surgery centers, hospice programs, centers for health and wellness, and outreach programs. Mercy’s presence in the area began in 1892 as Mercy Hospital in Hamilton, OH. From that original hospital, MHP-SWO has grown into the large regional entity it is today.

![Diagram of MHP-SWO's acute care hospitals along Interstate 275](image)

Figure 1: MHP-SWO’s acute care hospitals along Interstate 275

The regional offices of MHP-SWO are located in the Network Services Building (NSB) in Blue Ash, OH, and many services that are common to all five hospitals are coordinated from this location. Some of these services include Legal, Finance, Accreditation, Revenue Cycle Management, and Corporate Responsibility. Even though the Core Laboratory of the Regional Laboratory Services of MHP-SWO is a regional entity, it is located at one of the five acute care hospitals, Mercy Hospital Mt. Airy, and that is where I performed most of my duties.

**Core Laboratory**

The Core Laboratory performs the majority of the out patient laboratory testing for the MHP-SWO region and provides support services to the four Rapid Response Laboratories, which are located at the remaining four acute care hospitals. In addition to
routine laboratory tests, the Core Laboratory provides Point of Care, Microbiology, Serology, Histology, and Cytology testing. Additional support services include information technology, marketing, and compliance.

Each of the three support services has a manager who reports directly to the Regional Director of Laboratory Services. Each of these managers, while working out of the Core Laboratory, also has a matrix reporting relationship to a respective Director at NSB. As a member of the Corporate Responsibility team, I had a matrixed reporting relationship to the Corporate Responsibility Officer (CRO) as well as to the Regional Director of Accreditation – both report to the senior leadership, including the Chief Operating Officer (CEO). My documentation for the Corporate Responsibility Program was reviewed and approved by the CRO. The Regional Director of Accreditation had oversight of the on-line policy manual and reviewed that portion of my work. These relationships were in addition to my direct reporting relationship to the Regional Director of Laboratory Services, and through that position to the Regional Pathology Committee. Figure 2 contains the organizational chart for MHP-SWO showing the Laboratory Services branch and my reporting relationships in this complex structure.
Figure 2: Organizational chart for MHP-SWO with the laboratory branch – my reporting structure is shown by the shaded positions
This complex reporting structure impacted my work, mainly during the review process. As I have already mentioned, my work was reviewed and approved by my various superiors. Occasionally, a single assignment would be reviewed by the Regional Director of Laboratory Services, the Corporate Responsibility Officer, and the Regional Pathology Committee. For example, when I wrote the laboratories’ annual letter to the physicians, I submitted the letter first to the CRO for content review. After making the CRO’s revisions, I submitted it to the Regional Director of Laboratory Services. Again, some revisions were required. Next, I presented the letter to the Regional Pathology Committee. Finally, after the Pathologist’s review, I resubmitted the letter to the CRO for final approval. All of these reviews and approvals extended the amount of time required to complete this compliance project, but they also helped me support the core value of Excellence by assuring complete and accurate documentation.

**Compliance Program**

As Regional Compliance Manager, I documented policies and procedures, prepared forms, and developed educational materials for all of the laboratory departments and services. In addition to my technical communication responsibilities, I provided oversight of the laboratories’ billing, coding, and Quality Assurance. I also served on various hospital and regional committees while managing the laboratories’ Corporate Responsibility Program.

The Corporate Responsibility Program at CHP and MHP-SWO is an extension of the mission and core values of the organization. The Program was developed to ensure a culture that fulfills the ethical, legal, and professional obligations of all associates to our patients and clients. In fulfilling this commitment in the laboratory, I developed documentation that met numerous regulatory requirements, disseminated accurate information, and provided appropriate instruction, all of which allowed the laboratory personnel to carry on the mission and vision of CHP and MHP-SWO.
The laboratory advances the mission of the organization by sustaining the core values, with emphasis on the values of Excellence, Service, and Human Dignity. Likewise, my work emphasized the same values. By providing clear and accurate documentation, I supported the value of Excellence. My work also served the patients by helping the laboratory to provide precise and relevant test results. I also practiced Service and Human Dignity by considering my audience and transferring knowledge through my documents.

In the remainder of this report, I describe my efforts to carry on the mission and vision of the organization through my technical communication responsibilities. These responsibilities included providing accurate information and documentation to the employees by way of a new on-line procedure manual, creating various forms, and producing informational letters and presentations. The next chapter describes the various ways I used my technical communication skills to distribute knowledge throughout the laboratories and beyond.
Chapter 2: Overview of My Responsibilities

As a Master in Technical and Scientific Communication (MTSC) intern for the Regional Laboratory Services of MHP-SWO, I performed a variety of technical communication duties. These duties ranged from researching references for policies to designing forms to preparing presentations. The projects not only varied in form but also in size. A number of the projects required only a few hours to complete while a few required weeks. In this chapter, I describe the existing documentation processes as well as the duties I performed as the communicator for the laboratories.

Existing Process

Numerous documentation and communication processes are required by the clinical laboratory. Clinical laboratories have always created and disseminated knowledge by producing policies, procedures, educational materials, forms, and worksheets. These documents support the laboratories’ role of providing care to the patients. In the past, laboratory technicians, laboratory managers, and physicians wrote or designed the above documents. Many of the people responsible for the laboratory’s technical communication needs are formally trained in the sciences and have little, if any, technical communication training. In essence, they are subject matter experts. The documents produced by these scientists, while accurate, are occasionally difficult to understand. Some of this difficulty is due to the regulations governing the documents.

Regulation

Documentation in the laboratory is a very regulated process. Most laboratorians at the supervisory level and above are well versed in the regulations governing writing, presenting, and reviewing the laboratories’ documents. The regulatory agencies governing documentation at the Regional Laboratory Services at MHP-SWO are the College of American Pathologists (CAP), the Joint Commission on Accreditation of
Healthcare Organizations (JCAHO), and the Centers for Medicare and Medicaid Services (CMS).

The CAP provides the most comprehensive regulatory guidance for producing laboratory documentation. The CAP standards are based on the Clinical and Laboratory Standards Institute (CLSI) and these standards outline the design and content of laboratory documents. By following these standards, most laboratorians produce documentation in a very prescriptive way. Unfortunately, this approach discounts the consideration of the audience of the documentation (I will discuss this topic in more detail in Chapter four). I describe this existing process of laboratory documentation in the next section.

**Process**

Initially, the need for documentation occurs due to the purchase of new equipment and tests or due to a change in policy or procedure. The person responsible for the new equipment or change is also the person responsible for producing the needed documentation. This person may be the supervisor of the department involved in the change or a staff member. Almost always, the person performing the documentation process is a subject matter expert – as I am.

The documentation process begins by reviewing the manufacturer’s information and researching current medical literature. Usually, the manufacturer provides overly-detailed information that must be condensed and adapted to fit the needs of the laboratory. Next, the information is plugged into the format prescribed by the regulatory agencies, such as CAP or CLSI. Finally, the documentation is reviewed and approved by the Laboratory Medical Director or laboratory administrators.

As you can imagine, this process produces less than desirable results. Because numerous individuals produce documents, the documents vary in every conceivable way, such as length, tone, detail, and organization. Also, the documents are not usually visually pleasing. In addition, document control encompasses only the review portion of the
process. I attempted to correct many of these flaws in performing my technical communication duties.

My Duties as Communicator for the Labs

I was responsible for producing and reviewing procedures, policies, communications in the form of letters, quality assurance (QA) and result-reporting forms, presentations, and a lab website. Most of these tasks required anywhere from a couple of hours to a few days’ total time to complete. Even though the time required to complete these small projects was minimal, multitasking was mandatory as I usually worked on two to three of these projects at the same time. These duties were in addition to producing an on-line point of care manual and preparing a compliance audioconference. Producing the on-line POC manual ran concurrently with the smaller projects throughout my entire internship.

I spent approximately 40% of my time on these smaller projects. Additionally, I spent 50% on the on-line POC manual, and I spent 10% on the compliance audioconference presentation. Figure 3 shows the division of my time among the smaller projects and the major projects during my internship (I discuss my major projects in Chapter 3.)
As I was currently employed with MHP-SWO, I had already established myself as a subject matter expert in the laboratory. Because of this strength, I was frequently called upon to interpret, write, review, and revise documentation for people in other laboratories and other departments in MHP-SWO as well as CHP. In the remainder of this section, I’ll discuss some of my smaller projects.

**Pharmacy Procedure**

My internship began by my helping the Pharmacy write a procedure for a new instrument in their new coagulation clinic. Performing laboratory tests in the pharmacy is a relatively new concept in the practice of laboratory medicine. The pharmacy at the Mt. Airy hospital was only a few weeks away from opening a coagulation therapy clinic, and they had asked the laboratory for help in writing the procedure for their new coagulation instrument. I began this project by spending time with the pharmacist in charge of the clinic discussing the operation of the instrument and the regulations governing the operation of the clinic.
Next, I researched the operation of the instrument by obtaining and reading the manufacturer’s documentation. I also examined the regulations governing laboratory testing outside of the laboratory. My research on the regulations led to the pharmacy obtaining their own Clinical Laboratory Improvement Act (CLIA) license from CMS. Obtaining a CLIA license allows the pharmacy to pursue other testing opportunities in the future. Additionally, my research of the manufacturer’s documentation helped me to review and edit the pharmacy’s draft procedure. After the pharmacist and I completed the written procedure, I suggested that we perform a usability test with the procedure by having someone unfamiliar with the instrument try to operate the instrument using the new procedure.

Usability testing of procedures (clinical procedures are essentially instructions) is a concept that the labs at MHP-SWO had not formally practiced before I began the MTSC program. I introduced a limited form of usability testing in the laboratories after learning about it in the MTSC program. With this project, I was able to introduce usability testing to another department in the hospital. The usability testing of the pharmacy procedure was a success as a sequencing problem with the procedure was identified, and we were able to revise and finalize the procedure before the clinic began operation.

**Blood Bank Policy**

During this time, I also reviewed Blood Bank policies for the JCAHO Inspection Preparation Team. The team was comprised of Nursing Service personnel who had performed a mock JCAHO inspection that raised some questions regarding Laboratory Blood Bank policies. My task was to research the JCAHO Standards, American Association of Blood Banks (AABB) guidelines, CAP Standards, Federal Drug Administration (FDA) regulations, CMS regulations, and the hospital’s By-Laws to validate the appropriateness of the Blood Bank policies in question.
My review showed the policies complied with all of the above regulations, so my next step was to relay that information to the Nursing Service Team. I shared the knowledge I had gained from my research with the Nursing Service Team by directly speaking to some of the members and by preparing an email message. I also used email to communicate my findings to the Laboratory administrators.

Emails are a staple of communication at MHP. I became well versed in writing emails that carried the correct tone and content for the message I wished to convey. By doing so, I avoided the possible pitfalls of communicating by email. During my internship, these communication skills were recognized when I was asked to review other employees’ emails for tone.

**Communications**

Communication with the Laboratory administrators, physicians, nurses, and medical staff members comprised a number of my smaller projects. I drafted and revised four letters or memos to these varied audiences on the following topics (examples of a letter and a memo can be found in Appendix A and Appendix B respectively):

- Annual laboratory compliance audit
- Reference ranges missing from patient reports
- Annual laboratory letter to physicians
- Announcement of a new reference laboratory

The intent of these letters and memos was, once again, to share knowledge gained by the Laboratory with different audiences both inside and outside the MHP region. Again, the audiences for these letters and memos were as varied as the documents. The audience for the annual laboratory compliance audit memo included lawyers, regulators, laboratory managers, and hospital administrators. The reference range letter was strictly for physicians, whereas the remaining two documents were intended for both physicians and their office staff members, which include nurses and clerical staff.
Quality Assurance

As Regional Laboratory Compliance Manager, I was responsible for supervising the Regional Laboratory Services’ Quality Assurance (QA) program. Therefore, this area was another where I served as both a subject matter expert and a technical communicator. My duties included the collection and interpretation of data to monitor the quality of the work produced by the laboratories. These monitors include studies of the amount of time required to produce test results, comparison of preliminary test results with permanent diagnoses, and determination of the accuracy of test results. I produced forms, a procedure, and a presentation to assist in evaluating the QA monitors.

I generated many of the forms in Microsoft Excel. The spreadsheet format allowed me to automate a number of mathematical functions that had been previously performed by hand. The spreadsheet program also allowed me to use shading in the forms to promote easier grouping of the information\(^1\) for the user. During the production of these forms, I used a shortened version of usability testing to assess the forms before I placed them into use in the laboratories. After I had written a working draft of the form, the technologist responsible for QA used the form with the data she was evaluating. I sat with her and took notes on what worked and what needed to be revised on the form. Then, I revised the form and resubmitted the forms to her for evaluation.

In addition to the QA forms, I wrote a procedure and a presentation for the QA program. The procedure, the Quarterly Laboratory Quality Assurance procedure, detailed what data was to be collected and how that data was to be reported on a quarterly basis. The presentation consisted of a storyboard that detailed the quarterly QA results of an individual lab. I applied the theories of figure and ground to design a storyboard that was visually pleasing and organized by presenting multiple charts and graphs on a black

board with different colors of paper under the charts and graphs to provide a border for each of them. These borders provided continuity and emphasis to the data. I presented the storyboard to the Regional Pathology Committee, which approved the storyboard to be used in Laboratory presentations to each hospital’s Medical Executive Committee.

**Compliance**

Another set of small projects that ran concurrently with the other projects was writing, reviewing, and revising procedures and forms for the Laboratory Compliance Manual. As Regional Laboratory Compliance Manager, I was responsible for reviewing and revising the Laboratory Compliance Manual. This manual consisted of the Laboratory Compliance Plan and various procedures and policies for performing audits of the laboratories’ billing and coding system. I also designed forms for collecting data for those audits. Again, I used a spreadsheet for the forms, thereby automating calculations and providing a standard format.

Additionally, part of this Compliance project required researching current governmental regulations in order to keep the laboratories compliant in an ever-changing regulatory environment. Again, I was both subject matter expert and technical communicator for this project. In addition to performing Internet research, I consulted with other subject matter experts at both MHP and CHP. I found this networking experience very helpful as I worked on one of my major projects: the compliance presentation, which I discuss in Chapter 3.

**Lab Website**

During my internship, I was also responsible for overseeing the renovation of the Laboratory’s website. The website originally was only one page, which contained numerous links to various outside laboratory and medical websites. There was little or no information about MHP’s laboratories. My plan was to use the site to provide educational

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opportunities for the laboratory staff and information about the laboratories to nursing personnel.

I began the website project by interviewing MHP’s Webmaster. During that interview, I learned that all changes to the site had to be performed by her. I could only provide content. Therefore, my Education Coordinator and I did just that. Along with the Webmaster, we brainstormed ideas for making the site both interactive and informational. By making the site interactive, we hoped to encourage regular visits to the site by both laboratory and nursing personnel.

For the interactive portion of the site, we designed a page we called the Educational Challenge. Each challenge was a picture of a microscope slide of a laboratory specimen (for example: a parasite egg). When a user clicked on the picture, a pop up box with the identification of the specimen appeared. We placed a new challenge on the site each month to promote repeat visits to the site. This portion of the site is now a favorite of the laboratory personnel, and we have received ideas for new challenges from staff members. As of the writing of this report, the challenges have become more complex and now include multiple questions and answers about the picture.

For the informational portion, we provided additional links to medical educational sites along with a link to our reference laboratory’s website to enable a short cut to web pages laboratory personnel visit frequently. We also posted some forms and worksheets to make them easily accessible to the laboratory employees, and we used the first page of the site to post general laboratory announcements. All of the information provided on the site was designed to be of interest to both nursing and laboratory personnel. Examples of the before renovation, after renovation, and educational challenge web pages are shown below in Figures 4, 5, and 6. The success of the site was amazing, as we had over 900 hits the first two weeks after the renovation.
Figure 4: The Lab web page before renovation contained only one page, as shown in the figure above.
Figure 5: The lab website after renovation contained 2 pages in addition to links to forms and other useful websites.
Figure 6: The lab website’s educational challenge page changes regularly to promote return visits.

**Catholic Healthcare Partners**

Near the end of my internship, I was asked to assist in a CHP project to standardize chemistry instrumentation. CHP had decided to buy chemistry instruments for all CHP laboratories from the same vendor in order to get the best pricing by purchasing large volumes. My responsibilities were to design a number of spreadsheets and Excel workbooks to compare multiple vendors’ pricing of chemistry instruments, reagents, and service costs for the 28 laboratories in CHP.

During this project, I gained a great deal of experience in connecting spreadsheets and workbooks, and also some insight into summarizing large amounts of data for a varied audience. I condensed numerous worksheets in multiple workbooks into three pages of data. The first page showed the savings for the entire CHP region over a seven-year
period as compared to 2003 costs. This page was targeted toward the regional administrators and financial personnel. The second page illustrated the projected costs and savings for each individual laboratory and was provided for the laboratory directors. Finally, the third page compared the total savings or costs for each vendor pair and was directed toward the administrators and financial personnel.

In conclusion, I worked on all of these small projects concurrently with each of my major projects. Multitasking gave me practice in prioritizing tasks and managing time. As with every technical communication job, priorities could change on a daily basis. I honed my ability to adapt to changes and juggle tasks. I found each of these small projects to be challenging in one way or another, but not nearly as challenging as my two major projects, which I discuss in the next chapter.
Chapter 3: Major Projects

In addition to the small projects mentioned in the previous chapter, I had two major projects during my internship. The first project was revising a Point of Care (POC) paper manual, thereby turning it into an on-line manual on MHP-SWO’s intranet. The second was preparing and presenting a Laboratory Compliance presentation for a monthly audioconference hosted by CHP. I found both of these projects interesting and challenging in their own ways.

On-line Point of Care Manual

Point of Care testing is defined as laboratory testing that occurs at the bedside (the point where care is being given). At MHP-SWO, POC testing is performed by the nurses near the patient’s bed. The types of tests performed at the bedside vary at each of the different facilities. Even though the tests vary, there was a need for a convenient and standardized manual at all of the sites.

In fact, convenient and standardized manuals have become a priority of MHP-SWO as they live their mission of “evolving a dynamic culture.” As the organization has grown, the diversity of documentation has grown along with the culture. To this end, MHP-SWO introduced on-line manual software about two years ago. The nursing manuals were the first manuals to be placed on-line. Unfortunately, the laboratory was not consulted during the conversion, and when nursing retired their paper manuals, they inadvertently lost the POC policies and procedures. While the policies and procedures were still available in the Laboratory manuals, they were not convenient to nursing nor were they at all standardized. The solution to both of these issues was to place the POC manual on-line.
Issues

While the existing paper manual met the regulatory requirements and could have been placed on the nursing floor, this solution would not have met the nurses’ need for convenience. The nursing staff had become accustomed to their on-line nursing manual, and a paper manual was not viewed as expedient for the nursing staff to use. Examples from the paper manual and the on-line manual of the POC Glucose Testing procedure can be found in Appendices C and D. The nurses liked the search features of the on-line manuals and their ability to view a policy from any computer. With a paper manual, there was only one copy per nursing unit, and the nurses complained about the manual never being on the shelf when they needed it. With the on-line manuals, staff members never had to search for a manual, as it was simply a matter of point and click on the nearest computer to open a standardized manual.

Standardizing the POC manuals was a second issue as I moved the paper manuals on-line. Because there are five acute care hospitals in MHP-SWO, there were as many as five versions of the POC manuals and twenty five to thirty copies of the manuals at each hospital. Every time I made a revision, I had to collect and update all of the manuals at each hospital. Inevitably, a manual or two would be missed and this fact explained the existence of multiple versions of the POC manuals. Moving the POC manual to the on-line format allowed me to assure the presence of only the most recent version of the manual and to standardize the visual design of the Laboratory’s on-line documents. Therefore, both audiences of the manual, the nursing and laboratory personnel, would have the same version of the manual across the entire region. The titles of the policies and procedures I revised for the on-line POC manual are as follows:
• POC Activated Clotting Time
• POC Glucometer Calibration Verification
• POC Glucometer Linearity Validation
• POC Glucose Testing
• POC Occult Blood Testing
• POC Occult Blood Quality Control

**Audience**

The major audience for the POC manual was the nursing staff; the laboratory staff was a secondary audience for the manual. The existing POC manual was written in the style of the other laboratory manuals and did not seem to account for the needs of the nursing staff audience. In order to better understand the needs of the nursing audience, I interviewed several key nurses and asked questions about their likes and dislikes of the paper manual. From their answers, I concluded that their needs consisted of less explanation about the tests and shorter and more concrete instructions.

Traditionally, laboratorians use their policies and procedures to not only share knowledge and instructions, but also to educate staff about test principles, diseases, and treatments. The nursing staff did not want all of the extra information that was in the laboratory documents. The nurses also wanted to be able to quickly find the operating instructions in the procedures. In revising the POC manual to be placed on-line, I considered both audiences’ needs and preferences, which allowed me to practice the core value of Human Dignity. In addition to decreasing the amount of extraneous information found in the paper manual, I used the visual design of the on-line document to help the readers easily and quickly find information that they needed.

**Visual Design**

I applied visual design techniques, that had I learned in the MTSC program to the documents I revised for the on-line POC manual. By applying these techniques, I was also practicing the core value of Excellence. I tried to base my design decisions on my
knowledge of how and where the documents would be used. The techniques I used included the following:

- Sans serif font
- Larger font
- Color
- Bulleted lists
- Numbered lists
- Structural repetition

I used the sans serif font for easier readability on the screen. In the same vein, I enlarged the font so that readers could see the text from a distance. In some places in the hospital, there is not room next to the computer screens to perform the testing and the screen must be read from a short distance away. In addition, I used color to make the instruction portion of the documents easily discernable for the person performing the testing. My use of color was the first time color had been used in any of MHP-SWO’s on-line policies or procedures. During usability testing, I received many positive comments about how the color made the procedure easier to use. Bulleted lists also helped the readers to focus their eyes on lists of items needed to perform the tests. Additionally, I used numbered lists to help the readers keep track of which steps of the test they were performing. I used structural repetition to allow the reader to quickly identify content in the document. For example, all notes were placed the same distance from the margin and were in red in all of the on-line documents.

My decision to use these techniques culminated in my writing a style sheet for the laboratory on-line documents. The style sheet appears in Appendix E. It contains information on the size and style of fonts, formatting for lists, style of bullets, and use of

color. Originally, I had intended the style sheet to be used to standardize the look of the POC on-line documents. Later, the style sheet became a necessity when the Lab’s administrators agreed to place additional regional policies on-line.

Placing more lab policies and procedures on-line came as a bit of a surprise to me. We had a number of challenges with MHP-SWO’s on-line manual software and struggles with the regional approval process. These challenges ranged from errors in the software to different levels of computer literacy among the reviewers. I address these additional issues in the next section.

**On-line Software**

MHP-SWO uses Siemens’ On-line Policy and Procedure Manual software to produce the region’s on-line manuals for all departments. Departments that currently have on-line manuals include Nursing, Administration, Human Resources, Legal, and Laboratory. Each of these departments designed their own documents using a template provided by the software. The template consisted of required header information, policy body, and optional reviewer and reader sections. Figure 7 shows a screen print of the template.
Completion of the template was simple. I typed required header information, such as policy name, owner, status, contributing departments, and review interval, into fields in the top section of the form. The next section of the form requested the actual policy or procedure, which I entered by either copying and pasting or by free text typing the body of the policy or procedure. I could add references in the next section of the template. The final section of the template held the process cycle information. I entered information about readers, reviewers, and approvers in that section. As I stated before, completing the template was easy. Using the automatic review and approval function of the software was problematic.

**Problems**

The software was designed to automatically send notification of policies and procedures to readers, reviewers, and approvers. The policy owner entered the names of people assigned to read, review, or approve the on-line policy, then notification by email would
automatically be sent to these people. The owner could assign the reviews and approvals to be sent to multiple people either in a group or sequentially. I attempted to adapt the laboratory’s current review and approval process to the new on-line process. This attempt brought the software problems to light.

As I mentioned in Chapter 2, Laboratory policy and procedures are reviewed by the laboratory managers and approved by the pathologists. The first policy I placed on-line was the POC Glucometer Calibration Verification procedure. After applying the style sheet conventions to the procedure (including a rework due to losing the document during a network downtime), I copied it to the on-line program. Next, during a laboratory managers’ meeting, I discussed the review process with the managers, and I told them to expect the notification emails from the software. I then submitted the procedure through the on-line program to the five laboratory managers for their review.

The review was fraught with technical and operator difficulties. First, only three of the five managers received notification of the procedure. Of the three who received the notification, only one was able to follow the directions provided by the software and have her review recorded by the program. I attributed the other managers’ difficulty to their lack of technical expertise. These difficulties required me to contact MHP-SWO’s on-line manual manager.

Solutions

I worked with the on-line manual manager for most of my internship to try to solve some of these problems. She suggested placing a “test” policy on-line to gather data to send to the software’s manufacturer. With the “test” policy, we found other issues with the approval process in addition to the technical expertise of the reviewers and approvers. When using the sequential approval function, only the first approver received the policy. After that person approved the policy, the policy was supposed to be automatically emailed to the next approver. This step did not function as designed, and the policy “hung” in the system. As of the writing of this report, the review process is functioning, but the approval process is still not working (the second approver still does not receive
the policy). As a temporary solution, we have devised a manual approval system for the on-line manual that requires me to print the on-line documents and present them for approval by the pathologists in a meeting. While this solution is not efficient, it accomplishes the task. This solution is one of the compromises I experienced during my internship. Another series of compromises occurred during my other major project, designing a Laboratory Compliance presentation.

**Laboratory Compliance Presentation**

As I stated earlier, part of my duties as Regional Laboratory Compliance Manager, entailed researching Federal and local rules and regulations regarding laboratory operations. This research was very helpful during my second major project. For this project, I was asked to write and present 40 minutes of a 90-minute audioconference detailing a laboratory compliance program for CHP. The audioconference was heard by laboratory managers and compliance officers from the 28 hospitals of the CHP region. I was asked to present because I was considered a subject matter expert in the laboratory compliance area. While this request was an honor, it was also a challenge to mesh being a subject matter expert and a technical communicator (this scenario occurred a few times during my internship and I’ll explore it in my final chapter).

I worked with another subject matter expert, CHP’s Compliance Analyst, who would present the 50-minute portion of the audioconference. We had both spent one afternoon a month for the past 6 months listening to an in-depth audioconference series covering all aspects of laboratory compliance. We were going to condense the information provided in the series and the information we found in our research into a 90-minute overview for a varied audience.

**Audience**

The intended audience for the audioconference series we had used as our model had been laboratory compliance officers, while our audience was a mix of laboratory leaders and hospital compliance officers (neither group contained subject matter experts). Therefore,
we not only had to condense the material, but we had to simplify it as well. Additionally, we needed to make the content interesting for the two diverse groups. The laboratorians were familiar with the details of managing a laboratory and the compliance officers were familiar with the jargon and rhetoric of the Federal regulations. Our task was to produce a Power Point presentation that could reach both groups and provide each with the information they needed to comply with the regulations.

**Preparation**

To accomplish this task, we met in person once, talked over the phone a few times, and communicated via email over a two-week period. We divided the information into two parts. My part was an overview of a laboratory compliance program. The overview was to explain the seven steps to an effective compliance program. The second half of the audioconference was to consist of an update on the newest regulations from the federal government. We agreed that I would design the master slide and that each of us would work on our slides individually. When our individual slides were finished, we would then combine them into one presentation. Combining the slides is when the trouble began.

**Trouble**

I received my partner’s slides two days before the scheduled presentation. The slides were not what I had expected. I created my slides using the design techniques I had learned in the MTSC program. I used large fonts, white space, bulleted lists, and limited information on my slides. My partner’s slides had varied fonts and little white space. She had used bulleted lists, but had too much information on her slides. Examples of both types of slides are shown in Figures 8 and 9. I contacted her by phone to discuss the slides.
Risk Areas

- Billing and Coding
  - Calculations
  - Panels
  - Modifiers
- Physician Relations
  - Stark
  - Anti-kickback
- Effective Compliance Program

Figure 8: My slide using MTSC techniques was clear and easy to read.
Ambulatory Payment Classification (APC)- Blood & Blood Products

- Historic Payment Policy:
  - Separate payment rates setup for some blood products
  - CY02 & CY03 used “Capping” method in to counteract major reductions
  - CY04 set 15% limit on payment reductions and froze payments at CY03 levels

- Proposed Payment Policy for FY05 (refer to Table 30):
  - Continue to pay for blood and blood products separately
  - Establish new APCs for each blood product
  - Reassign APCs that contain multiple types of blood products to new more clinically homogenous APCs
  - Expire C codes and assign new P codes

- Proposed Changes factor in:
  - CMS goal to protect and preserve for a safe, accessible blood supply
  - To provide adequate payment for necessary life-saving services
  - Base payment rates on CY03 claims for high volume blood products and combined CY02/CY03 claims for low volume blood products
  - As blood processing or selection level increases, the payment should increase

- CMS to issue additional instructions to clarify charging policy in addition to instructions issued in Transmittal A-01-50 from April 12, 2001

Figure 9: The analyst’s slide contained too much information and was too “busy.”

This phone conversation did not go well. I expressed my concerns about our different styles and tried to explain the design principles I had incorporated into my slides. I talked about placing key points on the slides and not overloading the slides with information. She argued that the audience could use her slides as reference material. I suggested emailing the audience copies of the supporting documentation. In the end, her slides did not change. Because her position was superior to mine in the organization, I did not insist that she change her slides, I simply added several transitional slides between our two portions of the presentation.

I thought the two different styles interrupted the flow of the presentation, so I used the transitional slides to ease the audience into the second portion of the presentation. I designed the slides to provide a funneling effect. Over a group of four slides, I took the
audience from my “key point” style of slide to her “reference material” style of slide by adding increasing amounts of information to each slide. While I felt this solution was a compromise of the core value of Excellence, I was still able to practice the values of Service and Human Dignity by using the solution in the presentation.

**Presentation**

Even with the trouble I experienced during the preparation of the presentation, the actual audioconference was a success. I have presented with ease in front of live audiences many times, but the most difficulty I had with the audioconference was the fact that I didn’t receive the feedback presenters experience with a live audience. I found myself waiting for reactions from the unseen audience. In that regard, presenting an audioconference is like writing a document. I had to imagine my audience’s reactions and anticipate any questions they might have. Overall, it was a very good experience, as was my internship as a technical communicator for the laboratory. In the next chapter, I analyze my role as a technical communicator.
Chapter 4: Analysis of My Role as Technical Communicator in a Clinical Laboratory Environment

I faced many challenges and problems during my internship. In this chapter, I discuss what I saw as the two most intriguing challenges. The first challenge involved solving the on-line manual problems. In addition to the software problems I describe in Chapter 3, I also faced the problem of resistance to the on-line manual by the laboratory staff. The second challenge was combining my skills as a subject matter expert in the laboratory with my abilities as a technical communicator in order to be a positive influence on the knowledge management of the laboratories at MHP-SWO. I’ll begin with a discussion of my steps to solve the on-line manual problems and conclude with why the laboratory needs a technical communicator.

A Problem Solver in the Laboratory

Professionals in technical communication and laboratory medicine share the common trait of being problem solvers. In technical communication, we solve problems concerning documentation and communications. In laboratory medicine, we solve problems with instrumentation, testing methods, and test results, to name a few. There are many ways to approach problem solving, but the most successful ways follow a system or model of some kind.

Using a Problem Solving Model

During my course work, I was introduced to Paul V. Anderson’s problem solving model. The basics steps of that model are as follows:

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1. Define problem
2. Design solution
3. Test solution
4. Implement solution
5. Evaluate solution

These steps can be used to solve either simple or complex problems. I found that every problem must first be recognized as a problem and defined. Second, a solution needs to be devised by asking questions and gathering information. The third step, testing, is one that is not always used in laboratory medicine, but this step is essential for good communications. Next, the model requires that the tested solution be implemented. The final step calls for evaluating the solution. Evaluation not only helps to determine if the current solution is working, but it also offers suggestions for solving future problems. I found the testing step to be a great addition to solving the on-line software problem.

**Solving an On-line Software Problem**

As I discussed in Chapter 3, the review and approval process of the on-line policy software did not work. Therefore, I applied Anderson’s problem solving model to this problem while using the “test policy.” While we knew there was a problem with the review process, we hadn’t fully defined the problem until we placed the “test policy” on-line.

The “test policy” defined the points in the review process where the policy was not being sent to all of the reviewers. Once we were able to see what the problem was and where in the process it was occurring, we worked with the software’s designers to devise a solution. The solution was for the software designers to change some of the software’s parameters. Next, we sent the “test policy” out to the reviewers again in order to test the designers’ solution. Because the solution worked in the testing phase, we rolled it out to
the “live” manual. I then assigned another policy for the laboratory managers to review. This time they all received the policy and that portion of the problem was solved.

Testing the solution before implementation allowed me to present a working solution to the users of the on-line manual. Many times in laboratory medicine, we use a trial and error method of problem solving. We cite the need to save time as our main reason to proceed in this manner. In reality, we would be more efficient at problem solving if we tested our proposed solutions first. We could then implement working solutions more often and save time and money; we would also save the laboratory staff the needless aggravation of a solution that doesn’t work well or doesn’t work at all. Implementing this part of the problem-solving model was just one of the many benefits my technical communication training provided to the MHP-SWO laboratories. In the next section, I describe some of the other benefits.

A Technical Communicator in the Laboratory

In Chapter 1, I stated that my current position with MH-SWO had provided me with an opportunity for a unique internship, in a number of ways. First, I was the first MTSC intern for the Laboratories of MHP-SWO. Second, I served my internship in concert with my Regional Laboratory Compliance Manager duties. Third, the extended length of my internship allowed me to work on numerous projects and practice many of the varied functions of a technical communicator. Finally and most importantly, it exposed the administrators of the laboratories and MHP-SWO to the benefits of employing a technical communicator to meet the communication needs of today’s healthcare industry.

The benefits of employing a technical communicator in the laboratory are many. I see the most valuable one as contributing to knowledge management. The management and transfer of knowledge throughout healthcare organizations is a necessity. Additionally, the technology of document control is rapidly changing, and technical communicators
almost always possess the skills to facilitate those changes. I was fortunate to be an agent of change in my role with the on-line manuals.

**Developing Knowledge Management**

Management of knowledge is a big benefit to having a technical communicator in a laboratory, because the creation of knowledge is a large part of what happens in a laboratory setting. Laboratory personnel combine information about patients, science, medicine, and instrumentation to create knowledge that will be used by physicians, nurses, and other hospital staff to treat patients. Some of this knowledge is explicit and resides in written documents such as policies and procedures. At other times, knowledge is tacit and exists in the individuals who staff and manage the laboratory.

As the technical communicator for the laboratory, I was called upon to manage the explicit knowledge contained in the written documents, while also calling on the tacit knowledge I had gained as a subject matter expert in the laboratory. At times, it was a benefit to me to be both and at other times, it was a challenge. The biggest challenge was for me to consider an audience that was not as well versed in laboratory science as I am.

For example, the POC manual’s primary audience was the nursing staff. The policies and procedures in this manual needed to be understood by the nursing staff and they needed simultaneously to adhere to all of the regulations governing laboratory documentation. Reconciling these two issues called for me to stop thinking as a laboratorian and view the documents from the nurses’ perspective. Usability testing with the nurses helped me to remain focused on their point of view, while also allowing me to practice the core values of Excellence and Human Dignity. Had I not been trained as a technical communicator, I would not have been sensitive to the needs of the nursing staff, and the procedures would have failed to transfer the intended knowledge to the users.

**Using Knowledge Transfer**

Transfer of knowledge is essential to the stakeholders in the healthcare industry. The owners of knowledge must effectively transfer that knowledge to others in order to
successfully treat the patients - the ultimate stakeholders in healthcare. To transfer knowledge, physicians give orders and prescriptions to nurses, while the laboratory transfers knowledge to the physicians and nurses by reporting results and through policies and procedures. All of this knowledge transfer is communication that impacts the patient.

I am reminded of a statement from an assigned reading from early in my coursework: “A communication’s stakeholders generally are not the audience members.”\(^7\) Quite obviously, this axiom is true in healthcare. As a subject matter expert, I attended to the “black and white” or scientific facts contained in the documents I prepared. I easily lost sight of the patient as a major stakeholder. As a technical communicator, I placed more value on the audience and stakeholders, and my documents reflect that attention.

Transferring knowledge from the subject matter experts to the stakeholders, in my opinion, provides the most benefit for employing technical communicators in a laboratory setting. Technical communicators possess the skills to analyze the audience, organize the information, apply the visual design techniques, and test the documents. All of these skills could help laboratories produce accurate, informative, and valuable documentation and communications to all of the laboratory’s stakeholders and customers. Once again, at CHP, these skills also support the core values of Excellence, Service, and Human Dignity. Additionally, technical communicators could also function as agents of change in the laboratory.

**Being a Change Agent**

Another benefit of employing technical communicators in the laboratory is the active role they could play in initiating and perpetuating change. Laboratory Medicine is constantly changing and evolving, and while laboratorians welcome changes in the science of Laboratory Medicine, they are less accommodating to changes in the way they

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communicate. They are comfortable with their paper manuals, and they see no need to fix something that they believe is not broken. Unfortunately, from a technical communicators’ point of view, the laboratory’s documentation system is less than perfect. I believe changing the current system by implementing technical communication best practices would not only increase the clarity and effectiveness of the documentation, it would also increase efficiency in the laboratory.

As I stated earlier, laboratorians tend to be prescriptive and tedious in their communications and documents. In the past, as a practicing Medical Technologist, I have attempted to use procedures that, while dense with information, were not structured for ease of use or efficiency. First, I had to locate the manual and then I had to find the procedure in the manual. With the on-line manuals, the manual is always available on the computer next to the laboratory instrument. Personnel can search by key words to find the procedure quickly. The next step in the old system required me to sift through all of the information in the procedure to find the actual instructions for the test I was performing. Again, with the on-line manuals, because of color-coded sections and usability-tested instructions, the testing can be found and performed efficiently and effectively.

During my internship as a technical communicator for the laboratory, I have started a journey toward effecting changes that will improve the laboratory’s communications. Because of the previously mentioned difficulties with the on-line software, my role as a change agent has been challenging, but rewarding. The laboratory staff members are becoming comfortable with the on-line manuals, and the number of policies and procedures being placed on-line is growing.

**Conclusion**

Since my internship, I have continued to work for MHP-SWO as the Regional Laboratory Compliance Manager and my technical communication duties have grown as the on-line
policy manual grows. I have written a document control policy in addition to numerous POC, QA, and Compliance policies and procedures. Furthermore, MHP-SWO continues to grow and evolve their dynamic culture. The organization has introduced a Standards of Behaviors document, which is based on the core values. Each core value has defined behaviors listed, and every employee is expected to exhibit those behaviors in their work.

Additionally, the administrators of the laboratory now fully support the use of technical communication best practices in the laboratories’ documentation and communications. I see this support as a big win for both technical communicators and for the laboratory. Because of my internship at MHP-SWO, the laboratories are well on their way to having an effective on-line manual. They also have a working and evolving website. Improving communications has allowed the laboratory to live the core values more closely by helping us to provide excellent service and attend to the human dignity of our dynamic culture. Most importantly, they have a new and growing appreciation for the profession of technical and scientific communication.
Appendix A – Annual Physician Letter

August 12, 2004

Dear Medical Staff:

As part of Mercy Health Partners of Southwest Ohio’s (MHP) ongoing compliance initiatives and in support of our core values, we are committed to assisting physicians who order tests, in fully understanding our services and billing practices. We are providing you with this annual letter to ensure that all MHP medical staff receive a clear, concise summary of MHP test and billing procedures to affect responsible test ordering and compliant action with Medicare and other payors. This information is outlined below for your benefit and to comply with The Office of Inspector General recommendations.

The MHP Lab Requisition Form:

The MHP requisition forms are designed to both promote conscience and careful test ordering and to capture the information required by federal or private health care programs. Our goal is to provide you with sufficient information about choice among MHP’s services to facilitate your ordering of medically appropriate tests and to make independent medical necessity decisions.

MHP supports only Medicare approved panels. Medicare approved panels only will be billed and will be paid when all of the component tests are medically necessary.

Requisition/Script Requirements
1. The Diagnosis, Signs and Symptoms, or ICD-9 Code which supports medical necessity for all tests ordered
2. Requisition/Script with Physician signature
3. Copy of the patients’ insurance card (front and back)
4. ABN form signed and dated by patient when needed (see following)
**Advanced Beneficiary Notice (ABN)**

Medicare will pay only for services it deems are medically necessary for diagnosis and treatment.

Medicare will not pay for tests that are:

- Ordered as part of a routine physical exam or screen
- Determined to be medically unnecessary based on the ICD-9-CM code submitted
- Ordered more frequently than covered by Medicare
- Considered to be for research or investigational use only

If you are ordering a test that is likely to be denied payment, you must obtain a signed Advanced Beneficiary Notice (ABN). Please contact the laboratory if you need forms. Follow these steps when obtaining an ABN:

1. Inform the patient of the test that is likely to be denied payment by Medicare
2. Inform the patient of the reason why the test may be denied payment
3. Obtain the patient’s signature on the ABN indicating that he/she will be personally and fully responsible if Medicare denies payment

**Ordering Policies:**

It is MHP’s policy to only perform tests at the request of an authorized person. An “authorized person” is a person authorized under state law to order testing or receive test results. After a requisition has been sent to MHP, the ordering provider may request additional testing on the specimen or cancel any tests already ordered. Verbal changes to orders are accepted by an authorized person (per facility rules and regulations and/or medical staff bylaws) who records, dates, and signs documentation of the change on a “Written Verification of Verbal and Incomplete Orders” form, with the authorized ordering provider later countersigning the form.
MHP’s policy is to perform reflex tests as outlined on the laboratory requisition and as stated in our policy, “Laboratory Reflex Testing Orders.” The ordering provider may decline reflex testing by stating “No reflex desired” on the lab requisition.

Repeat testing may be performed on a specimen in order to confirm test results as deemed necessary by the laboratory. In the case of a repeat test on an original specimen, MHP will only bill for the original test.

MHP does not create “custom profiles” to facilitate the ordering of groups of tests in combination. Instead, the ordering provider should order each test individually.

To ensure that MHP performs only those tests requested by the ordering provider, we have adopted the following policies:

• When a specimen is received without an order attached, MHP will contact the ordering provider to determine what tests were requested

• When a test order is unclear, MHP will contact the ordering provider to clarify the order before performing the test (once the unclear order has been clarified, MHP will perform the ordered tests)

• Written record of any conversation with the ordering provider or authorized member of the ordering provider’s staff will be created and maintained by MHP. MHP will also send a written authorization request to the ordering provider and request their signature.

Regarding surgical specimens that require review by a pathologist before discarding, refer to the individual facility’s or hospital’s Histology Procedure Manual for specimen types that require review.
**Coverage and Medical Necessity:**

Medicare covers only those laboratory tests that are reasonable and necessary for the diagnosis or treatment of an illness. It does not cover “rule out” or routine screening tests except Pap smears, colorectal, and other selected cancer screening tests.

MHP is currently subject to local medical review policies of Adminastar, our fiscal intermediary, and is subject to the Medicare National Coverage Guidelines (effective November 23, 2002) for selected lab tests. It is important that ordering providers be aware of the implications of these policies when ordering these selected tests. Please contact Nelia Manhema, Outreach Services, at 853-4022 for more information concerning current local medical review policies.

When ordering any test for which reimbursement by any of the federal health programs will be sought, the medical necessity and cost of those tests should be carefully considered (see attached schedule of Medicare reimbursement rates). Payment by Medicaid will be equal to or less than the amount paid by Medicare.

**Indigence and Professional Courtesy Policies:**

MHP will only waive charges after determining in good faith that a patient is in financial need or is indigent, and/or after MHP has made reasonable collection efforts.

The offering of professional courtesies (reducing or waiving charges to physicians or other individuals who order services from MHP) is a practice that under certain circumstances the federal government believes may constitute a financial benefit given to those individuals for the purpose of inducing referrals. Consequently, MHP has chosen to refrain from offering professional courtesies.
Clinical Questions:

If you have any questions about the tests that MHP offers and ordering those tests, you may contact the Laboratory Outreach Services Manager, Adrianne Cornell at 853-5714.

If you have any questions about the content of this letter or other matters specifically related to compliance initiatives, please direct your inquiries to my attention at 853-5821.

Sincerely,

Audrey J. Kerby, MT(ASCP)
Laboratory Compliance Officer
### Medicare and Medicaid Panel Tests and Payment Rates

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**Hepatic Function Panel-2004**

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<td><strong>Medicare Reimbursement: $14.77</strong></td>
</tr>
<tr>
<td>AST (SGOT)</td>
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</tr>
<tr>
<td>Bilirubin, Total</td>
<td></td>
</tr>
<tr>
<td>Bilirubin, Direct</td>
<td></td>
</tr>
<tr>
<td><strong>Protein, Total</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CPT code: 80076</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Medicare Reimbursement: $8.83</strong></td>
<td></td>
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**Acute Hepatitis Panel-2004**

- Hepatitis B Surface Antigen
- Hepatitis C Virus Antibody
- Hepatitis A Antibody, IgM
- Hepatitis B Core Antibody, IgM
<table>
<thead>
<tr>
<th>Renal Function Panel-2004</th>
<th>Medicare Reimbursement: $63.58</th>
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<tbody>
<tr>
<td>BUN</td>
<td></td>
</tr>
<tr>
<td>Carbon Dioxide</td>
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</tr>
<tr>
<td>Chloride</td>
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</table>

<table>
<thead>
<tr>
<th>Lipid Panel-2004</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine</td>
<td>Cholesterol, serum, total</td>
</tr>
<tr>
<td>Glucose</td>
<td>HDL cholesterol</td>
</tr>
<tr>
<td>Potassium</td>
<td>Triglycerides</td>
</tr>
<tr>
<td>Sodium</td>
<td>CPT code: 80061</td>
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<tr>
<td>Calcium</td>
<td>Medicare Reimbursement: $17.77</td>
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<tr>
<td>Albumin</td>
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</tr>
<tr>
<td>Phosphorus, Inorganic (Phosphate)</td>
<td>CPT code: 80069</td>
</tr>
</tbody>
</table>

| Medicare Reimbursement: $12.13 |

Payment by Medicaid will be equal to or less than the amount paid by Medicare.
To: All Physicians and Clients

From: [redacted], Medical Director, and [redacted], Pathologist, Laboratory Services, Mercy Fairfield

James R. Hamilton, Regional Director of Laboratory Services

Subject: ARUP Reference Laboratory

Date: 8/23/04

Mercy Health Partners of Southwest Ohio Laboratory Services is pleased to welcome ARUP Laboratories as its new reference laboratory effective August 30, 2004. We believe this association will ensure superior testing and the highest quality personalized service for you, our clients. In our continued efforts to serve you in all your testing needs, we welcome your questions or comments. Calls may be directed to:

Anderson
Clermont
Fairfield
Mt Airy
Western Hills
On behalf of the employees of Mercy Health Partners of Southwest Ohio Laboratory Services as well as ARUP Laboratories, we thank you for your support!

About ARUP...

ARUP Laboratories is a full-service reference laboratory specializing in esoteric testing. Based in Salt Lake City, Utah, ARUP has served clients nationwide since its creation in 1984 by the Department of Pathology at the University of Utah Health Sciences Center. ARUP continues to function as the hospital laboratory for the 400-bed hospital at the University of Utah Health Sciences Center.

What does this mean to you?

- Extensive test menu
- 24 hour testing means rapid turnaround time
- LIS to LIS interface capabilities provide immediate access to test results
- Professional staff, including many faculty members of the University of Utah, provides access to pathology consultation
- Extensive efforts in research and development continually bring new tests on board for use by our clients
- Continuing education opportunities via access to ARUP’s video library, lectures, and educational materials on testing and interpretation

ARUP is accredited by the College of American Pathologists and as an Advance Immunohematology Reference Laboratory by the American Association of Blood Banks, and holds all required state licenses.

Together, Mercy Health Partners of Southwest Ohio Laboratory Services and ARUP are committed to providing you with the highest level of laboratory testing and service available in the industry.
Appendix C – Paper POC Policy

POLICY & PROCEDURE
START DATE: 10/06
REVIEW DATE: 4/03
REVISED DATE: 4/19/02 AK

OWNERS: Department of Laboratory Medicine
SCOPE OF CARE: All patient caregivers trained in the use of the POCT SureStepPro equipment

TITLE: POCT SureStepPro Quality Control

PURPOSE: Monitor glucose levels for the purpose of evaluating and adjusting insulin doses.

POLICY: Quality Control testing is to be done every 24 hours with each meter in use and whenever test results contraindicate clinical symptoms. SureStepPro low and high glucose control solutions must be used to verify the SureStepPro system performance. The system is programmed to look out or prevent any patient testing unless controls have been run. Controls should be run if you drop a bedside unit on the floor or as a tool for troubleshooting the unit if malfunction is suspected.

Reagent Storage Requirements:
At room temperature, 95% of low and high glucose control solution results should fall within the acceptable range determined by the lab. Valid control results depend on the correct test strip lot number (and corresponding code) being correctly entered into the bedside unit. Quality control testing is always done in the “QC Test Mode” in the bedside unit. PASSES indicate results that fall in the acceptable range and results that do not fall in the range are FAILED.

Store test strips tightly capped in their original bottle in a cool dry place below 30 degrees Centigrade. Keep away from heat and direct sunlight. Do not refrigerate or freeze. Discard any unused portion 4 months after opening. Do not use after the expiration date printed on the bottle label. Store control solutions below 30 degrees Centigrade. Do not refrigerate or freeze. Discard any unused portion 90 days after opening. Do not use after the expiration date printed on the vial.

Anytime a new bottle of test strips or control vials are opened, the date of opening must be written on the bottle or vial.

PROCEDURE (steps/flowchart/decision algorithm)
1. Turn the bedside unit on.
2. Check the battery status to ensure adequate power. Press Cont.
3. Select QC Test from the Main menu.
4. Enter your operator ID (9 digit social security #).
5. Select the control level you wish to run (low or high).
6. Select the control lot number from the list displayed.
7. Select the test strip lot number from the list displayed.
8. Gently shake the control solution vial.
9. Apply one drop of control solution to the pink test square on the test strip. Check the confirmation dot on the back of the test strip to ensure adequate application.

10. Insert the test strip into the test strip holder within 2 minutes of applying control solution. Push the strip until it comes to a complete stop.

11. The result displays on the bedside until LCD in approximately 30 seconds.

12. If the result is PASSEDS, press OK.

13. If the result is FAILED, press Enter Notes and choose from one to three comments that are appropriate (example: if ran high but entered low, then choose Procedure Error). Press OK and repeat the QC test.

14. Remove the strip and dispose of it as biohazard waste.

**Interpretation:**

The quality control is evaluated daily by the operator performing the controls. If QC fails after repeating and troubleshooting, notify laboratory personnel responsible for POC. Back-up units are available in the lab. The laboratory personnel responsible for POC will call LifeScan Hot line for help (800) 524-7226.

All SureStepPro bedside units have been programmed to look out the potential for patient testing unless both low and high controls have passed every 24 hours.

QC data is stored in the system according to the bedside until serial number, date, time and operator ID. Data is downloaded once a month and prepared for review.

The POC Coordinator will review the QC data and report to the laboratory personnel responsible for POC if QC noncompliance action needs to be taken. The laboratory personnel responsible for POC will respond with a written Quality Improvement Plan. Additionally, statistical data (mean, SD, and CV) is calculated to establish and monitor control ranges during monthly review. This data is also used to evaluate analytical imprecision. If this data from the imprecision statistics changes significantly, the POC Coordinator will investigate and document findings in the monthly report.

**Failed QC and Troubleshooting:**

If results fall outside the expected range begin the steps below. If QC still fails after all steps, then contact the laboratory personnel responsible for POC. Repeat the test.

- Clean meter
- Use a different bottle or reagent strips.
- Use a different bottle of glucose control solution.

Results that fall outside the expected range may indicate:

1. Procedural error (low control ran as high or vice versa)
2. Old or contaminated glucose control solution
3. Incorrect test strip lot number entered in the bedside unit.
4. Debris in the lens area and test strip holder.
5. Test strip deterioration.
6. Unit malfunction.
7. Control outside the 15-30 degree Centigrade temperature range.

**Desired Outcome:** Both the high and the low Q.C. must fall within the Mean plus or minus 25.0.
PERSONNEL & QUALIFICATIONS:
- Laboratory personnel who have been trained and certified in the operation of the glucose meters.

EQUIPMENT NEEDED:
- SureStepPro Blood Glucose Bedside Unit
- SureStepPro Test Strips
- SureStepPro Low and High Glucose Control Solutions

EXCEPTIONS/CONTRAINDICATIONS: None

FORMS/DOCUMENTATION:
All documentation for Q.C. is recorded in the bedside unit. That data is downloaded to the computer for report processing and review.

ADAPTATIONS:
Mercy Health Solutions

REFERENCES:
SureStepPro Users Manual

DEFINITION OF TERMS:
POCT: Point of Care Testing

Approved By:

Pathologist Date Pathologist Date
Appendix D – Revised POC On-line Policy

Facilities

This policy and procedure is authorized for the following facilities:

Anderson
Clermont
Fairfield
Harrison
Mt. Airy
Western Hills

Purpose

The determination of glucose concentrations in blood offers the nurse in a clinical setting a method to monitor the patient's blood glucose per the order of the physician, or when nursing observation demands an immediate determination.

Principle

A glucose oxidase reaction occurs between the whole blood and reagents in the test strip resulting in the formation of a blue color. This color is visible through the
confirmation dot on the back of the test strip; the darker the blue, the higher the glucose level in the whole blood sample. When the test strip is inserted into the SureStepPro bedside meter, the meter measures the color intensity and reports a plasma calibrated glucose result.

Policy

Only personnel who complete the training provided, demonstrate initial competency, and participate in annual competency testing are permitted to perform bedside blood glucose monitoring.

Quality control (QC) of the bedside unit is very important to ensure accurate results. Refer to the POC SureStepPro Glucose Quality Control procedure. QC must be run on each bedside unit once per 24 hours that the unit is in operation and both levels of QC must be within limits or the unit will "lock" you out.

The bedside meter operator must wear protective gloves and follow standard precautions during the following procedure. Capillary blood can be obtained from puncturing the fingertip or heel using the Unistick 2 or a similar lancing device.

Laboratory personnel are responsible for downloading the meters, preparing monthly reports, and QC of new lot reagents (before lot is placed in service). Refer to POC Duties of Laboratory Personnel.

Blood glucose testing is done according to the following:

- Testing is done when specifically ordered by the physician
- Testing time, if not specified by the physician, is ½ hour before meals and at bedtime (before bedtime snack)
- Patient or significant other is to be involved in the teaching/learning process
- It is within the realm of nursing practice to initiate obtaining a blood specimen and testing the specimen with the blood glucose meter in response to signs and symptoms of a hypoglycemic reaction or other pertinent observations that demand an immediate blood glucose determination
- A laboratory specimen is to be obtained as outlined by the lab (see limitations of procedure) or by the nurse's judgment

Materials

- SureStepPro Blood Glucose Bedside Meter
Specimen

Fresh whole blood (capillary, venous, arterial, or neonatal blood may be used)

**Note:** Venous and capillary blood may differ in glucose concentration by as much as 70mg/dl, depending on the time of blood collection after food intake

**Note:** DO NOT use serum or plasma samples

Anticoagulants such as heparin (green top tube or ABG sample) and EDTA (lavender top) may be used

**Note:** DO NOT use preservatives that contain fluoride (gray top tubes)

**Note:** If the testing is to be performed from an acceptable anticoagulant tube, it needs to be done within 30 minutes of sample collection to minimize glycolysis (metabolism of glucose by the red blood cells). Care should be taken to uniformly distribute red cells throughout the tube before testing. This can be accomplished by gently inverting the capped tube. If using fresh whole blood (finger stick), testing must be done immediately to prevent clotting from affecting the results.

Reagent Storage

- Store test strips tightly capped in their original bottle in a cool dry place below 30° Centigrade
- Keep away from heat and direct sunlight
- Do not refrigerate or freeze
- Discard any unused portion 4 months after opening
- Do not use after the expiration date printed on the bottle label

Expected Results

Expected blood glucose levels for people without diabetes are as follows:
Expected values for neonates: 30 – 60mg/dl

**Neonatal Results**

- Reference range for neonates is 30mg/dl to 60mg/dl
- Critical values for neonates are less than 20mg/dl
- All abnormal neonatal values must be confirmed by a clinical laboratory test method
- All neonates exhibiting hypoglycemic symptoms, regardless of blood glucose monitoring results should have their glucose tested by a clinical laboratory test method
- Laboratory confirmation is recommended for all neonatal results less than 30 mg/dl

**Reporting**

Patient results are recorded in the patient's chart, either on the diabetic record or in the ED record (Anderson and Clermont ED use the POC Result Reporting Form)

- Results are reported in milligrams per deciliter (mg/dl)
- Reportable range on the SureStepPro is 40 – 400mg/dl
- Reportable range on Nursery meters is 20 – 400mg/dl
- Values less than 40mg/dl are reported as <40mg/dl, with the exception of Nursery meters, where values less than 20mg/dl are reported as <20mg/dl
- Results greater than 400mg/dl are reported as >400mg/dl
- All results above and below the reportable range should be repeated on the bedside unit and be verified by lab glucose
- Values outside the reportable range are called Critical Values
- Critical Values are immediately communicated to the physician for treatment orders
- The glucose meter operator is responsible for identifying improbable results

**Abnormal Results**
A repeated result verifies the original result. A Laboratory glucose can verify an unexpected result or unusual result. The laboratory personnel responsible for POC can review results from the meter and compare them to the written result in the chart to identify clerical errors. The Medical Technologist in charge should be available to review questionable or abnormal results. In their absence, results must be reviewed on the next shift. If the patient is experiencing symptoms, which are not consistent with the glucose result obtained from the meter and you have followed the test procedure, as described below, repeat the test and confirm the blood glucose results with a laboratory test, then follow the policy for treating the patient.

Note: NEVER make significant changes to the patient's medication program or ignore physical symptoms without consulting a physician

Discrepant Results

If there is a discrepancy between the bedside unit's result and the Laboratory result, these steps must be taken:

1. Remove the bedside unit from use
2. Repeat the test using a second bedside meter
3. Repeat the test using a new bottle of strips
4. Repeat the lab test using a new sample
5. If there is still a discrepancy, notify the lab supervisor and the POC Coordinator

Procedure

A. Procedure for finger stick specimens

1. Turn on the bedside unit by pressing the blue power button
2. Check the battery status to ensure adequate power
3. Press Cont
4. Perform QC testing (if a message appears informing you that QC is due) according to the "POC SureStep Quality Control Procedure"
5. Select Patient Test from the main menu
6. Enter your operator ID (9-digit social security or 9-digit employee number)
7. Enter patient's ID (patient account number or scan bar code if available on armband)
**Note:** In ER and in outpatient areas were the patient account number is not available use the patient's last name followed by his or her first name

8. Select the test strip lot number from the list displayed  
9. Clean the puncture site with an alcohol prep and allow to dry  
10. Hold patient's arm downward for at least 30 seconds to allow blood to flow to fingertip  
11. Prick the side of the fingertip with the lancing device  
12. Milk the entire finger until a large droplet is obtained  
13. Apply blood droplet to the test strip by carefully touching the pink square on the test strip to the drop of blood  
14. Check the confirmation dot on the back of the test strip (look for blue color) to ensure adequate application  

**Note:** If there is not adequate amount of blood, a new strip must be used and the process repeated (**No double dipping**)  

15. Insert the test strip into the test strip holder within 2 minutes of applying blood  
16. Push the strip until it comes to a complete stop  

**Note:** The result appears on the bedside unit LCD in approximately 30 seconds  

17. Press **Menu** to continue testing  
18. Press **Enter Notes** and choose one to three comments that correspond to the patient's current situation  
19. Press **OK**  
20. Remove the strip and dispose of it as biohazard material  
21. Record results on the patient's chart and on Diabetes Record sheet  

**B. Anticoagulant tube method**  

- Follow the above finger stick procedure through step 8, then apply one drop of well-mixed whole blood from properly labeled tube onto the pink square of the test strip  
  - Check the confirmation dot on the back of the strip to ensure adequate application
References


Wichman NWR, et al. Practical Diabetes, 100, 1986


Lifescan SureStepPro Bedside Test Strips Package Insert, Johnson & Johnson, CA, 1998
Appendix E – Style Sheet for On-line Policies

Style Sheet for Laboratory On-line Policies and Procedures

This Style Sheet is to be used to format all Laboratory policies and procedures in the On-line Manual.

Section Headers
Heading 1 – Arial 14 Bold, 6pt after, 12pt before, Title Case

Body
Body text – Arial 12, 0pt after, 0pt before

Bullets
• Round, same font as text, Bullet position: indent at 0.25”, Text position: indent at 0.5”

Numbered Lists
Number followed by a period (#.), Number position: left, Aligned at 0.25”, Text position: indent at 0.5”

May insert bullets in a numbered list if not procedural steps

Outlined Lists
Level 1 – Upper case letter followed by a period (A.), text is Heading 2 – Arial 12 Bold, Sentence case
Level 2 – Number followed by a period (#.), text is Body text
Level 3 – Lower case letter followed by a period (a.), text is Body text

Notes
The word Note is Arial 12 Bold, followed by a colon (Note:), text after Note is Arial 12, font color dark red

References

Package inserts – Package insert, Name of kit, Company, City, Abbreviate State, Month Year.

Font Colors
Black – policy
Blue – procedure or steps
Dark red – notes