

Accreditation Beta Test Quality Improvement Project: Final Report

CARSON CITY HEALTH AND HUMAN SERVICES

DEVELOPMENT OF A QI AUDIT TOOL FOR THE ONSITE LAB

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EXECUTIVE SUMMARY

Carson City Health and Human Services (CCHHS) is located in Carson City, NV, and serves a population of approximately 57,600. Carson City sits in a valley 30 miles south of Reno and just 14 miles east of Lake Tahoe. Using the Public Health Accreditation Board's (PHAB's) self assessment, CCHHS initiated a quality improvement project targeting an identified area of weakness, onsite lab auditing. The project team developed and refined a quality assessment tool for regular internal audits of the onsite laboratory. As a result, policies and procedures for routine auditing will be implemented, ensuring continuous quality improvement and efficiency in the lab.

BACKGROUND/INTRODUCTION

CCHHS, which was established in 2003, applied to be a beta test site in order to gain the knowledge and insight required to prepare for successful accreditation, to better understand the department's capacity to efficiently collect and effectively analyze data, and to better understand the department's strengths and challenges.

Serving as a beta test site has allowed CCHHS to focus their efforts on enhancing overall department performance and effectiveness. With the goal of accreditation in mind, CCHHS found that participation in this process was of value because it has learned about accreditation requirements, identified data and received feedback for the development of accreditation materials, enhanced staff skills through the development of quality improvement initiatives, and improved laboratory functions and documentation. Taking this first step toward accreditation has been essential in supporting CCHHS's goal by guiding them in establishing benchmarks for quality assurance and continuous improvement.

BETA TEST SELF ASSESSMENT

The beta test self assessment required CCHHS to select one accreditation coordinator and one assistant coordinator to serve as key organizers. These individuals were members of the management team and were chosen for their institutional knowledge. The coordinator and the assistant coordinator met regularly to discuss accreditation standards and to secure documentation regarding accomplishment of each standard. During the meetings, the coordinator and assistant coordinator divided the tasks of documenting all standards based on institutional knowledge, area of expertise, and time.

As the project moved forward, the accreditation coordinator provided regular updates to the CCHHS management team (consisting of five program managers, the health department director, and the management team administrative staff) and to all CCHHS staff (approximately 30) during a staff meeting. When the accreditation coordinator and the assistant coordinator did not have institutional

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knowledge regarding a specific standard, program managers were brought in to discuss the standards and to provide pertinent documentation.

During the self assessment, several problems arose. It became clear that while CCHHS is providing excellent services to the community, these activities frequently are not documented. This became an issue for the self assessment, as in some cases proper documentation was not available. A second major concern involved a lack of department-wide policies applicable to the beta test.

Overall, the cooperation among all staff in providing documents that were requested by the accreditation team related to the beta test was outstanding. Through department-wide teamwork, the self assessment became an important first step in identifying strengths and areas for improvement. Table 1 provides the highlights of strengths and weaknesses that guided our efforts.

Table 1. Highlights from Self Assessment Results

Standard/ Measure	Standard and Significance
9.2.2 B	Implement quality improvement efforts based on the evaluations of processes, programs, and interventions <ul style="list-style-type: none">This was an area of weakness for CCHHS, as identified through the self assessment. After discussion, CCHHS felt this standard would be the best one to address through the QI process.
9.1.7L	Assure a systematic process for assessing customers' satisfaction with agency services <ul style="list-style-type: none">This was an area of weakness for CCHHS for the whole department. Some programs have customer feedback, but it is not integrated throughout. This area has been placed as a priority to be implemented department wide. A time frame has yet to be set for this project.
8.1.4 B	Establish relationships and/or collaborate with schools of public health and/or other related academic programs to promote the development of qualified workers for public health <ul style="list-style-type: none">CCHHS currently partners with the University of Nevada, Reno, to provide internships for MPH students. CCHHS has also collaborated with University of Nevada, Reno Orvis School of Nursing, to be a site for nursing students to learn about immunizations and family planning. CCHHS also collaborates with Western Nevada College as a mentoring site for nursing students to learn about immunizations.
5.4.1 B	Participate in the development and maintenance of an all-hazards/Emergency response plan (ERP) <p>CCHHS Public Health Preparedness (PHP) program collaborates regularly with the Carson City Emergency Manager, so that CCHHS's role is well defined in the Carson City ERP. This collaboration has allowed CCHHS's preparedness program access to key resource for other city departments in their emergency planning.</p>

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QUALITY IMPROVEMENT PROCESS (PLAN-DO-CHECK-ACT)

PLAN

The department focused on quality improvement and the overall goal of this project was directed at the onsite lab. The team felt that they could create efficiencies in the lab and ensure that the lab was audit ready by spending time creating and refining an internal lab audit process. This decision was preceded by the self assessment (spring 2010) and numerous meetings to review, discuss, and plan.

In June 2010, a presentation regarding the self assessment was made by the accreditation coordinator to the CCHHS management team. During two subsequent meetings, the team brainstormed broad topics that were tied to deficiencies revealed in the self assessment. A number of potential QI ideas were identified. Staff came to a consensus around quality improvement (standard 9.2.2B) and identified the lab as a feasible site for demonstrating a QI process. Improved knowledge of this process, gained by conducting this trial project, would then guide future QI efforts.

In July 2010 the PHAB site visit was conducted, and in August the CCHHS management team met again to discuss proceeding with the lab QI project with more input detailed from the findings of the PHAB site visit. Other topics considered by the management team included the development of a strategic planning process and the organization and the implementation of a community/customer satisfaction assessment. After more discussion, the team agreed that the best initial project was quality assurance in the onsite laboratory. Reasons included the feeling that creating a lab audit process could provide an example of an approach to internal audit processes for quality controls. Additionally, during the PHAB site visit, CCHHS received a fairly low score on Domain 9, and realized the need to address this gap. The scope of the project (projected time needed to complete) seemed to be more feasible than the other projects.

With the project topic confirmed, the accreditation coordinator and director selected the QI team. The management team decided that the PHAB site visit report prescribed a good system to implement QI projects in various departments, and that time must be committed in order to realize benefits from this process. Staff agreed to use this opportunity to become familiar with approaches to QI through an initial project with plans to develop future QI projects in other areas of the department using the plan do check act (PDCA) process.

Scheduling time for staff to meet was a challenge, and full-time staff adding to their workload for a QI project is difficult. To schedule the first QI team meeting, the networked calendar function was essential and proved a simple way to find time that worked for everyone. In September 2010, CCHHS hired a consulting team from the University of Nevada School of Medicine (UNSOM) to guide the team, develop a structure for the implementation of the QI initiative, and assist in required reporting. The addition of UNSOM consultants Jennifer Bennett, MPH, and Patty Charles, DrPH, MPH, was the only change to the QI team throughout the duration of the project.

Once the decision to improve lab quality was made, all efforts were focused on the lab. The team agreed that regular auditing needed to be in place to ensure that CCHHS was in compliance with the lab licensing agency, to improve the flow of staff and clients through the lab, and to enhance lab efficiency and quality. An initial lab audit tool had been developed in 2007 to monitor quality controls in the lab (Appendix 2) but did not work efficiently, and the process had not been revisited until it was resurrected by this QI project.

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The onsite lab is a 180-square foot room with ample counter and cabinet space, a sink, refrigerator, microscope, seating, and workspace. The lab has several large windows and is a pleasantly lighted area. It is shared by both the Clinic and the Environmental Health programs. Regarding the lab space, one staff member commented, “This is the only time we have talked about this; this is a multifunctional space ... let’s decide what we want it to be.”

The QI team used a four-point assessment tool to get an overall sense of how to approach the project. Facilitated by the consultants, the QI team spent about two hours discussing the following questions as they pertain to the lab: What is working well? What should we do more of? What should we do less of? What should be changed?

The extensive discussion was very helpful in focusing on actions to achieve the project goal. One team member noted, “Anything that we do can be subject to better processes.” The group further explored the topic through drawing illustrations of the current process, based on the question “draw what the process looks like now, and then draw how you would like it to look six months from now.” (See Appendix 3-A and 3-B for examples of the illustrations.) At first, team members were hesitant to use these atypical brainstorming methodologies but embraced the techniques and a great deal of positive discussion resulted from them. Ultimately, the team agreed on an aim statement for the project.

The aim statement went through several iterations before the final statement was adopted. As is apparent below, the aim statement became more specific over time.

- Initial Statement (September 2010): CCHHS will implement an internal third-party quality assurance check for the daily controls in the public health nursing lab. This quality assurance check will be done on a monthly basis.
- Revision 1 (September 2010): CCHHS will develop and test a quality assurance tool by October 2010 to ensure ease of use. Once the tool is in place, the quality assurance check will be done on a monthly basis to ensure that the public health nursing lab is in compliance with licensing requirements and to ensure accuracy in public health nursing lab testing.
- Revision 2 (October 2010): Between Oct. 1 and Nov. 15, 2010, CCHHS will develop a new quality assurance internal audit log for the onsite laboratory and test its ease of use and effectiveness at least three times.
- Revision 3, (October, 2010), Final: Between Oct. 1 and Nov. 15, 2010, CCHHS will develop a new quality assurance internal audit log for the onsite laboratory and test its ease of use and effectiveness at least three times. By Nov. 15, 95 percent of components on the tool will pass the audit.

Team discussions to improve the internal audit tool for the onsite lab led to the identification of multiple factors within the lab that needed attention or improvement. As these factors are improved, the lab audit will be improved. Through graphic representation (mentioned above), each team member illustrated their views of the current lab environment and work flow and depicted their ideal views of lab functionality and their vision of the lab in the future. Images were used to create a bone diagram (See Appendix 4) that illustrates the current lab system, idealized lab system, and both positive and negative factors influencing the system.

The feedback discussion, drawings, and fishbone diagram helped reveal the following: It is clear that in general, the team is very positive about the lab—it provides a nice large space for work and has all

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necessary items to accomplish the task at hand. Areas that warrant improvement include organization, flow of staff and patients through the space, and the development of certain protocols to maintain order within the space. The team also identified use improvements including removal of old equipment, proper disposal of red waste, and instrument use and sanitation. Ultimately, staff envision a comfortable flow of people using the space and improved/ongoing communication between users; a logical place and order for everything that belongs in the lab; set protocols for all activities conducted within the space; and regular monitoring to ensure that the lab is always prepared for external audits. The team was readily able to identify many positive forces for lab improvement; conversely, the team identified several negative forces. Issues included identifying a staff member responsible for initiating lab process discussions and changes, problems with scheduling time to work on lab improvements, financial concerns if minor remodels are warranted, and coming to consensus on which changes should be made.

The fishbone analysis helped identify root causes of the problems in the lab (Appendix 5). Five major causes surfaced, leading to the identification of one root cause. These areas included patient flow through the lab, nurse flow through the lab, sharing of lab space, lab environment, and clinic growth. Together, these lead to the root cause of a lack of formal lab process for monitoring and upkeep. The clinic has seen exceptional growth over the past few years, yet staff has engaged in little dialogue regarding the impact of growth on the lab environment and flow. Overall, the lab functions well and staff are able to carry on daily tasks in a reasonable way, but processes could be markedly improved to provide a more seamless flow. By creating an improved lab auditing system, more than the tool will be improved: the lab itself will undergo a series of changes that will render the tool useful for assuring lab quality.

The initial method for addressing the QI project was a facilitated/directed discussion, which helped the team members articulate their assessment of the strengths and issues associated with the lab. The team started with an existing internal lab audit form and agreed to include some measures identified in the QI process that are pertinent to the lab operating smoothly, yet may not necessarily be checked by outside auditors. One of these measures involves consideration of whether patients should be present in the lab and how to manage patient privacy in a space that is being used by multiple staff members. Another issue is to encourage dialogue between the Environmental Health unit and clinical staff regarding the shared lab space, lab flow and function. Policies to be examined and included in the lab audit form include redefining use of the red waste bin only for red waste (sometimes gets full of other garbage), formal plans to dispose of old equipment, and methods for eliminating nurse duplication of effort (recording the same information on paper and electronically).

The fishbone diagram encouraged discussion from which several improvements were suggested. Some issues may be addressed immediately while others will require more time and planning. By creating and refining the internal audit tool, staff will simultaneously make short-term, mid-range, and long-term improvements in all issues identified. CCHHS has embraced the following improvement theory:

“If the internal lab audit yields consistently high marks, then the lab will be operating in a high quality manner and all external audits will be successful.”

Revising the internal lab audit tool to comprehensively reflect all environmental, policy, and work flow protocols will ensure the possibility of realizing this hypothesis. The root cause of lab issues that was

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identified was the lack of formal process monitoring and follow through. With mandatory internal auditing and reporting, QI becomes part of the culture of CCHHS.

Plan phase discussions were broad regarding process issues related to auditing the lab. One item discussed was the possibility of creating an electronic audit form. At the time, it seemed simpler and more feasible to be able to run a spreadsheet that would assist in the process by pulling pieces of data from other spreadsheets that the clinic staff complete anyway. Further in the planning process, however, it became clear that the process would have to be developed in pen and paper form first for clarity and ease of use and then formatted in the future for electronic implementation.

DO

The team agreed on an action plan using the newly revised audit tool. Neil Fox would complete the audit four times (one baseline and three audit trials) and report results to Roni Galas, Marena Works, and Dustin Boothe. Each use would trigger discussion, review, and changes to the form. The team would discuss where changes need to be made in the tool or in the lab setting in order to improve results from the tool before the next planned audit. Changes would be made by the appropriate team member with follow-up reports to the team. Refinements would be made until no further actions were required to complete the audit in an effective and timely way. From audit results, the number of changes needed to the tool and lab would be documented.

Once the plan was set into motion, the test audits proceeded in a straightforward manner. The baseline and first scheduled audit trial were conducted as planned, including auditor follow-up to discuss results with the QI team, and initiating changes to be made to both the tool and lab.

Following each meeting, the audit tool was revised to better meet audit needs. The plan was for the four subsequent audits to be weekly. Overall, the process worked as planned with the exception of the second audit. The second audit was performed two days late, which postponed meeting and improving the tool and lab space for a few more days, thus running into the following scheduled audit day. The third audit was then conducted the following week, and the last conducted the week after. In total, the process took just one week longer than expected. When the tool is finalized, regular audits are planned quarterly (beginning first quarter 2011), therefore timing is not anticipated to be an issue.

Following each audit, identified tool and lab changes were documented and tallied (see Appendix 6). Data collection consisted of counting auditor changes. Changes occurred either in the audit form itself or in the lab. For example, the auditor suggested itemizing some items where a yes/no response did not provide enough detail (tool change). In another case, certificates of lab personnel were updated and posted on the lab bulletin board for quick reference (lab change). One unanticipated change was the deletion of two audit items over the course of the audit process, reducing the total number of audited items from 28 to 26. This only impacted data by changing the denominator when calculating percent of audit items requiring changes for each separate audit performed. Last, one additional audit was conducted to pilot the latest tool changes.

Because the process required extensive planning and discussion, much of the data consisted of qualitative issues, suggestions, findings and actions. When put to use, the audit tool will yield both qualitative and quantitative data.

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CHECK

The data collected show that the actions taken toward improving the audit tool and lab audit process were effective. As apparent in Appendix 6, with each subsequent audit, the noted necessary changes to both the tool and lab were reduced (from 15 on the first audit to just 3 on the last). One variation in the data, the third audit, may have been due to the fact that a different staff member conducted that particular audit. As a result of the last audit, conducted on Nov. 28, only three items remain in need of change, two to the tool and one to the lab. On Nov. 29, all necessary changes were made, creating a very user-friendly tool and lab space.

In determining the next step for the lab audit project, one additional lab audit was conducted in December 2010 to ensure the audit met the initial aim of 95 percent of audit components not requiring any changes. The tool is now finalized, and the quarterly audit process was implemented in January 2011.

ACT

Lab quality improvements have been implemented in CCHHS in several ways, including audit tool development, lab changes as a result of the QI process, and the implementation of a lab audit policy. The audit tool underwent major revisions, including editing, adding and deleting items, and clarifying text. It became more and more specific and directive with each revision. The current tool (see Appendix 7) is extremely detailed and guides the auditor through the process and through the lab, noting exactly where all required items are located. The tool poses specific questions pertaining to individual items. During the QI process, the lab itself became more audit-prepared: lists and notes were placed where the auditor will need them; extraneous equipment was removed from the space; and a broad discussion about proper use of the lab space was conducted. One unexpected outcome of the lab audit process was connecting with the Center for Health Training, a group that conducts studies of patient flow through clinics. CCHHS will be partnering with this organization to have a study carried out in 2011. Additionally, a lab tour at a partner health district will be conducted for lab process comparison. Both of these events will enhance the quality of services provided in the lab.

Ultimately, the QI process led to the development of a lab audit policy to be incorporated into routine clinic procedures and requiring that the internal audit be conducted on a quarterly basis (on the first Thursday of each quarter). The policy is as follows:

- The audit will be conducted the first Thursday of each quarter. If that Thursday is on a holiday, the audit will be done the following Thursday.
- Designated staff, one to two CCHHS clinic staff and one CCHHS non-clinic staff will conduct the audit.
- CCHHS clinic staff will conduct first and third audit of the year.
- Second and fourth audit of the year will be conducted by CCHHS non-clinic staff.
- Designated staff will use audit tool approved by clinic manager.
- Deficiencies, if found during the audit, need to be brought to the attention of the clinic manager, within five working days, after the audit is completed.
- Clinic manager or designee will develop plan to correct deficiencies.
- Deficiencies will be corrected prior to the next quarterly audit.
- Clinic manager will keep all audit records.
- Clinic manager will review audits during annual skills day with clinic staff.
- Audit tool will be reviewed and updated at least once a year.

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In this manner, a continuous audit cycle will maintain the success of the quality improvement process and will assure that the lab is always ready to succeed when external audits are conducted.

RESULTS, NEXT STEPS, AND ACCREDITATION

The CCHHS lab audit QI process yielded greater benefits than had been expected. Not only did the team successfully implement a new audit tool, process, and policy, but perhaps more importantly, the team learned a great deal about the QI process and realized its importance in continuous growth and improvement for the agency. At a final wrap-up meeting in November, QI team members were energized about taking on other QI projects identified in the self assessment and bringing in other staff members to learn the process and to be a part of QI processes organization-wide. New directions include discussions about how to formally build QI into routine operations, either with dedicated staff leading the charge or with all staff responsible for various pieces, or with a combination of the two. A new energy around QI has become quite apparent among staff involved with this particular QI project, and CCHHS plans to build on the success of this project to ignite more quality improvement projects in moving toward voluntary accreditation and create a culture of QI within the organization.

Regarding preparation for the accreditation process, being afforded the opportunity to be a beta test site has first and foremost opened the dialogue of accreditation at CCHHS. Initial discussions at the management team level have moved up to the members of our board of health. For CCHHS, in terms of accreditation, they have experienced a localized perfect storm. The first element was being accepted as a beta test site, the second element was the hiring of a new health officer, and the last element was the motivation of our board of health.

Being a beta test site offered the opportunity for both CCHHS and the health officer to engage the board of health in the importance of seeking national accreditation. With the open dialog, since being accepted as a beta test site, CCHHS has completed the National Public Health Performance Standards Program (NPHPSP) governance assessment and have begun the process of the NPHPSP community assessment. CCHHS looks forward to moving toward accreditation, particularly fueled by the QI lessons learned in this project.

LESSONS LEARNED

CCHHS has learned a great deal through the development of this QI process. For example, when choosing a QI project, it is important to drill down to small specific goals and actions; if a project is too broad, there will be great difficulties. In fact, part of the QI process for CCHHS was to hone the project to small steps that could be tackled easily. CCHHS found it very useful to conduct a root cause analysis and use the fishbone diagram to aid in visualization of the current process.

Second, it became clear that integrating quality improvement into the ongoing business of the health department is essential, whether or not an organization seeks accreditation, to improve the daily performance of the health department. For a health department seeking accreditation, it is important to have dedicated staff to lead the organization through the accreditation process and help instill QI into the institution. Likewise, it is essential in QI processes to have an assigned team to lead the initiative, and to pull in all key personnel who may influence or have input on the process. CCHHS found it extremely valuable to have the participation of staff directly involved in the functions being audited and staff from outside areas. Both groups offer different viewpoints, which is an asset to the process. Working through this QI process instilled in each team member an understanding of the PDCA cycle, and

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a realization that, with commitment, the process is feasible and that important, positive changes are attainable. Ongoing quality improvement is not only necessary, but possible as well.

Similarly, when attempting the self assessment for the first time, the organization must realize that this may be the first time that they are looking at themselves in this way, with a different set of eyes. When conducting the self assessment, it is important that an agency note that they do not meet the measure and then place it on a priority list of items that need to be developed, rather than trying to develop the documentation to meet the measure they are reviewing. It is the purpose of the self assessment to identify areas that are deficient, so that each can be addressed in time and with proper thought, planning, and care.

Support to hire a facilitator was invaluable to CCHHS, in that an “outsider’s” approach to organizing and guiding the process allowed the QI team to direct attention on the lab and the audit tool. Activities such as identifying “do well, do more, do less, change,” illustrating the current and future lab, analyzing a bone diagram, and discussing a fishbone depiction of issues all guided staff in accomplishing thorough assessment, creating a feasible approach, and staying on task and on focus. This was also useful in helping staff understand the PDCA process and in gaining some new approaches to future QI endeavors.

All the training and technical assistance that PHAB and NACCHO provided to the beta test sites was extremely valuable and helpful. These trainings provided a wealth of information and resources, so that CCHHS could conduct the self assessment and work through the QI initiative. The entire process has been very well structured and will lead CCHHS toward its goal of accreditation.

APPENDICES

[Appendix A: Storyboard](#)

[Additional Appendices:](#)

- Appendix B: 2007 (original) Audit Tool
- Appendix C: Process Illustration Examples
- Appendix D: Bone Diagram
- Appendix E: Fishbone Diagram
- Appendix F: Data Charts
- Appendix G: Final Audit Tool