Curry Health Center
Assessment of Quality Improvement Program

Submitted by David Bell

ABSTRACT
Curry Health Center’s Quality Improvement (QI) Committee, which oversees Curry’s Medical Clinic Quality Improvement Program, met monthly during 2009-2010 to initiate focused quality of care studies. The committee, which included three physicians, two nurse practitioners, one registered nurse, one medical assistant, and one medical records staff member, analyzed performance and identified targets for improvement in the areas of clinical care, service, cost-effectiveness, efficiency, and over- and under-utilization.

Topics for clinical quality of care evaluations were determined by identifying frequent diagnoses in the patient population of Curry Health Center. Additionally, the QI committee attempted to identify topics for which there are evidence-based, agreed-upon standards for care. The following assessment evaluates quality of care in the areas of informed consent requirements; peer review; pharyngitis diagnosis and treatment; prescription refill processes; wait times in the urgent care clinic; and urinary tract infection diagnosis and treatment. Each study identified a performance goal and evaluated relevant data to determine proposed courses of action.

Background, assessment procedure, findings, and recommendations are listed separately for each evaluation.

Informed Consent Requirements
BACKGROUND
Patient safety requires Curry to obtain informed written consent before beginning a procedure as evidence of the patient’s full understanding of relevant risks and benefits. Many minor procedures are performed at Curry, including suturing of lacerations, incision and drainage of abscesses, removal of abnormal skin lesions, skin biopsy, and colposcopy. Previous evaluations of Curry Health Center’s compliance with informed consent requirements indicated that written consent was not always documented on the chart in advance of a procedure. As a response, Curry began electronic charting and conducted another evaluation to determine whether compliance had improved, setting 95 percent compliance as a performance goal.

ASSESSMENT PROCEDURE
The QI committee reviewed 30 charts, randomly selected from a pool of patients who had the above procedures, from April 1 through May 14, 2010.

FINDINGS
Not only has performance fallen short of the stated goal, it has deteriorated in all areas, except colposcopies, since the initial evaluation was completed. Although all charts indicated that patient consent was obtained, and referred to written consent, there was no documentation of this consent in the electronic health record, which suggests that the consent form may have been signed, but then perhaps not scanned into the record.

The following chart indicates the findings of the March 2008, fall 2008, and spring 2010 reviews:

<table>
<thead>
<tr>
<th>DATE OF MEASURE</th>
<th>MARCH 2008</th>
<th>FALL 2008</th>
<th>SPRING 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written consent on chart</td>
<td>85%</td>
<td>95%</td>
<td>73%</td>
</tr>
</tbody>
</table>

The following chart provides findings of the 2010 review in greater detail:

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>WRITTEN CONSENT</th>
<th>PATIENT SIGNATURE</th>
<th>CLINICIAN SIGNATURE</th>
<th>RISKS AND BENEFITS DISCUSSED</th>
<th>ALTERNATIVES DISCUSSED</th>
</tr>
</thead>
</table>
RECOMMENDATIONS
The QI committee plans to develop a new process in the fall of 2010 to ensure that written consent is obtained, and that this consent is captured in the electronic record. This new process will be evaluated during late fall 2010.

Peer Review
BACKGROUND
The QI committee conducted a general assessment of the unit’s peer review activities.

ASSESSMENT PROCEDURE
Medical Records staff assessed completeness of documentation, use of abbreviations, and coding accuracy in peer reviews. The next stage in the assessment process is to have medical clinicians conduct peer reviews for content and appropriateness of care. The peer review results will be shared with the individuals being reviewed, and incorporated into their recredentialing process.

FINDINGS
The QI committee found evidence of a lack of standardization in the use of abbreviations. The problem emerged as a result of the transition from dictation to electronic charting.

RECOMMENDATIONS
To address the lack of standardization in abbreviation use, the QI committee made the decision to incorporate medical records staff in the charting review process.

Pharyngitis
BACKGROUND
The purpose of this assessment was to evaluate Curry Health Center’s diagnosis and treatment of pharyngitis; specifically, the assessment was intended to determine whether Curry was overprescribing antibiotics for viral illness, and using laboratory tests such as streptococcal screens and streptococcal cultures inappropriately. Inappropriate use of these tests would result in care that was not cost-effective, as upper respiratory infections and pharyngitis are high-volume diagnoses for Curry. The QI committee hoped to find that Curry appropriately utilized laboratory testing and prescribed antibiotics in 90 percent of cases. This assessment is the first assessment on this topic, and will be used to establish a baseline for care delivery standards, as well as identify targets for improvement.

ASSESSMENT PROCEDURE
The QI committee used evidence-based standards to assess Curry’s performance, and collected data from spring 2009 charts through a random manual chart review. Students from the Skaggs School of Pharmacy assisted with the data collection. The collection team found 373 charts with a diagnosis of pharyngitis, and 254 charts with a diagnosis of streptococcal pharyngitis. Centor criteria were used to guide data collection. Centor criteria, which are commonly used to diagnose streptococcal infection, evaluate patients according to four criteria: a history of fever; tonsillar exudates; tender anterior cervical adenopathy; and an absence of a cough. One point is added for each positive criterion.

FINDINGS
Overall performance did not meet the QI committee’s 90 percent compliance goal for appropriate screening; results indicate that Centor criteria were followed for streptococcal screening only 78 percent of the time. Antibiotics were
prescribed without a bacterial diagnosis of streptococcal infection 14 percent of the time, exceeding the goal of a 10 percent prescription rate. Streptococcal cultures were performed 14 percent of the time when the screen was negative. The following chart provides detailed data.

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>GOAL</th>
<th>COMBINED N = 63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strep screen with fewer than 2 Centor criteria</td>
<td>Less than 10%</td>
<td>22% (N=14)</td>
</tr>
<tr>
<td>Strep culture done</td>
<td>Less than 10%</td>
<td>14% (N=9)</td>
</tr>
<tr>
<td>Antibiotics with negative strep screen</td>
<td>Less than 10%</td>
<td>14% (N=9)</td>
</tr>
</tbody>
</table>

**RECOMMENDATIONS**
The QI committee has distributed results of the study to Curry Health Center’s governing body and appropriate clinicians, and created a template in the electronic medical records referencing the Centor criteria. The QI committee plans to educate all clinicians regarding the findings, and will also conduct a restudy during fall 2010.

*Prescription Refill Process*

**BACKGROUND**
During a 2008 study, the QI committee found that the process through which providers responded to telephone requests for prescription refills was inefficient and did not provide timely service to students. The goals of the study were to improve turnaround time; communication to the student; and documentation of the medication, including dose, quantity, and instructions for use. An initial assessment was conducted in 2008 to determine whether conversion to an electronic health record improved efficiency; subsequent measures were taken in 2009 and 2010 to determine whether the pharmacy had maintained its goals.

**ASSESSMENT PROCEDURE**
To evaluate the efficacy of the electronic record, the QI committee randomly selected 30 charts, from patients of both physicians and nurse practitioners, for which there was a refill request between March and May 2010.

**FINDINGS**
The QI committee established three goals: 80 percent of prescriptions would be refilled on the same day; 95 percent of prescription refill requests would have student communication recorded; and 100 percent of requests would have documentation regarding the specifics of the refill order. These goals were met after the initial process changes were made during fall 2008. However, the pharmacy did not meet these goals during the 2009 and 2010 assessments, with the exception of the 2009 assessment of documentation.

The following chart provides a comparison of the initial assessment and the 2009 and 2010 follow-up assessments:

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>GOAL</th>
<th>PRE 10/08</th>
<th>POST 11/08</th>
<th>REMEASURE #1 (MARCH 2009)</th>
<th>REMEASURE #2 (SPRING 2010)</th>
<th>DIFFERENCE FROM GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnaround time (expressed as a percentage of same day refills)</td>
<td>80%</td>
<td>53%</td>
<td>81%</td>
<td>79%</td>
<td>73%</td>
<td>7%</td>
</tr>
<tr>
<td>Documentation</td>
<td>100%</td>
<td>90%</td>
<td>99%</td>
<td>100%</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Communication</td>
<td>95%</td>
<td>41%</td>
<td>96%</td>
<td>86%</td>
<td>70%</td>
<td>22%</td>
</tr>
</tbody>
</table>

The 2010 assessment results are provided in more detail below:
Turnaround time
Same day: 73% (22/30)
One day: 20% (6/30)
Two day: 7% (2/30)
Documentation
93% (28/30)
Communication
70% (21/30)

RECOMMENDATIONS
The QI committee will present these results at the fall 2010 medical staff orientation, and will conduct another follow-up assessment mid-way through the semester. Documentation of communication will be the focus of this review.

Urgent Care Wait Time

BACKGROUND
The Urgent Care clinic accounts for almost 50 percent of student visits to Curry Health Center. The QI committee conducted an assessment to determine the best way to spread patient volume throughout the day, which would both reduce patient wait times and mitigate stress for the medical staff.

ASSESSMENT PROCEDURE
The QI committee measured the proportion of patients seen in the Urgent Care clinic between 10 a.m. and 2 p.m. In addition, the committee also determined the number of students waiting to be seen during the noon hour who had to wait for more than an hour. As a proxy for wait time, the committee used the interval between check-in time and the time the patient was placed in a time slot for a provider (this method could have underestimated patient wait time). A Monday was selected at random to establish baseline information regarding when patients were seen, the distribution of available providers, and the alignment of clinician supply and patient demand.

In light of the results, the QI committee instituted a new process for seeing patients in Urgent Care, and conducted a reassessment after a trial period.

FINDINGS
The QI committee established the goal that no patient’s wait time would be longer than one hour, and that the proportion of patient visits would not exceed the proportion of clinician availability for the same time period. For instance, because 37.5 percent of the clinical staff is available between 10 a.m. and 2 p.m., only 37.5 percent of patient visits (or less) should take place during that time.

The initial analysis indicated that 41 percent of the patients in the Urgent Care clinic were seen between 10 a.m. and 2 p.m., while only 37.5 percent of the clinical staff was available during that time. Three patients waited for over an hour, with the longest wait almost two hours (1 hour and 51 minutes). This baseline data therefore showed that the Urgent Care did not meet the established goals.

The following chart provides an analysis of the baseline data:

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>GOAL</th>
<th>PRE 3/1/10</th>
<th>POST 4/5/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waits exceeding one hour (#)</td>
<td>none</td>
<td>3 (longest 1 hour, 51 minutes)</td>
<td>1 (1 hour, 15 minutes)</td>
</tr>
<tr>
<td>% of visits mid-day</td>
<td>37.5% or less</td>
<td>41% (24/58)</td>
<td>32% (19/60)</td>
</tr>
</tbody>
</table>

The follow-up assessment, conducted after the trial period implementing the revised procedures, indicated that the proportion of patients seen between 10 a.m. and 2 p.m. was reduced from 41 percent to 32 percent, which better aligned with the number of clinicians available during this time period. One person had to wait for over an hour (1 hour and 15 minutes), compared with three waits longer than an hour in the initial assessment. However, despite these improvements, neither of these results met the set goals.
RECOMMENDATIONS
Starting April 5, 2010, Urgent Care staff implemented a new process to better accommodate patients. The QI committee noted that the majority of walk-in patients called first, and that the number of patients seen each day in Urgent Care was generally less than the number of 20-minute appointment slots assigned to Urgent Care’s clinicians. Consequently, Urgent Care staff made the following changes:

- All-day Urgent Care doctors were reserved for walk-in patients only.
- All-day Urgent Care nurse practitioners met with patients through the following procedure:
  - “Appointed” Urgent Care patients (patients who called in and were given an appointment slot) were seen in twenty-minute increments from 8 a.m. to 11 a.m., and then again from 3 p.m. through the end of the day (on the same day, unless the patient called in during the previous night, or the appointment was for follow-up).
  - “Walk-in” Urgent Care patients were seen from 11 a.m. to 3 p.m.
  - Afternoon Urgent Care doctors saw walk-in patients from 1 p.m. to 2 p.m., and appointed patients from 2 p.m. through the end of the day.
  - All doctors and nurse practitioners not on Urgent Care duty had an Urgent Care slot for their last time slot of the morning and for their first time slot of the afternoon.
  - The triage nurse assigned walk-in patients to providers, using acuity to determine who would be seen first.
  - Appointments were only scheduled on the current date and not ahead of time; as an exception, however, the inpatient nurse could, the night before, appoint a patient to an Urgent Care provider within the designated appointment times for follow-up.
  - Appointments were scheduled in 20-minute increments regardless of visit reason.
  - When scheduling, the reason type was always listed as “Urgent Care,” with the actual visit reason documented in the “note” section.
  - The “appointed” Urgent Care patients checked-in and were treated in the same manner as a regular scheduled patient: the patient’s chart was placed directly in the slot of the provider they had been scheduled with, and the patient was triaged and roomed by the provider’s medical assistant. This change was intended to alleviate the load on the triage nurse.

Urgent Care staff plan to continue implementing these changes, making adjustments as needed. Staff responses to the changes have been positive, with staff and students registering fewer complaints, and students indicating a greater appreciation for clinic services.

*Urinary Tract Infection Diagnosis and Treatment*

**BACKGROUND**
Urinary tract infection is a common diagnosis for Curry Health Center, with common symptoms being those related to dysuria. The QI committee undertook an assessment to improve the efficiency of urinary tract infection diagnosis and treatment; specifically, the committee set out to determine whether clinicians overused urine cultures in the evaluation of urinary tract symptoms and suspected cystitis, and to determine whether first-line therapies such as trimethoprim/sulfamethoxazole (TMP/SMX) were always recommended.

**ASSESSMENT PROCEDURE**
The QI committee established the goal that less than 10 percent of patients would have a urine culture ordered, and 90 percent of patients would receive appropriate first-line medication therapy.

To assess whether Curry clinicians met this goal, the QI committee conducted chart reviews of women presenting with symptoms of cystitis during spring 2009, analyzing laboratory use and prescribing habits. The QI committee selected 43 charts at random, from patients who were seen during the day or evening, and were seen by registered nurses, advanced practice registered nurses, or physicians.

**FINDINGS**
The data analysis revealed that the suspected problem does exist, and that there is a need for further education regarding appropriate laboratory use and antibiotic choice. Currently, 30.6 percent of cystitis diagnoses involve urine cultures, exceeding the goal of 10 percent. In addition, only 38.9 percent of cystitis diagnoses are started on TMP/SMX, which
falls far short of the goal of 90 percent. The review revealed that ciproflaxin was prescribed in 47.2 percent of the cases, potentially contributing to the development of antibacterial resistance.

The following chart provides detailed results.

<table>
<thead>
<tr>
<th>PERFORMANCE MEASURE</th>
<th>GOAL</th>
<th>SPRING 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab culture ordered</td>
<td>10% or less</td>
<td>30.6%</td>
</tr>
<tr>
<td>Appropriate first line antibiotics</td>
<td>90% or greater</td>
<td>38.9%</td>
</tr>
<tr>
<td>(TMP/SMX)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RECOMMENDATIONS**  
The QI committee educated nurses (both registered nurses and advanced practice registered nurses) and physicians regarding the study outcomes and preferred procedures, and will conduct the study again during fall 2010.