Sedgwick County... working for you
Sedgwick County Health Department

Project Title: **Lab Test Reporting Accuracy**
SCHD Quality Improvement Training, 2010-2011
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PLAN
Identify an opportunity and Plan for Improvement

1. Getting Started

Lab personnel at the Sedgwick County Health Department had noticed for some time that the totals for Gonorrhea and Chlamydia (G&C) tests in the "Lab Tests Performed" report from KIPHS, the data management system, did not match. Since both tests are to be completed on the same specimen, the totals should be the same in any month or year-end reports. The data must be accurate for monthly reporting, CLIA certification, and reports to Kansas

2. Assemble The Team

The QI Project team consisted of lab, information technology, and data entry/encounter processing personnel. Each of these were input experts for one of the three possible areas where the cause might be located. These also represented some of the stakeholders. A timeline was established using a GANNT chart and general team member assignments were agreed upon.

AIM Statement

The totals of Gonorrhea tests performed as seen in the "Lab Tests Performed" report in KIPHS will match the totals for Chlamydia tests in the same report for each month from Jan. 2009 through Aug. 2010, as will the following months through Nov. 2010.
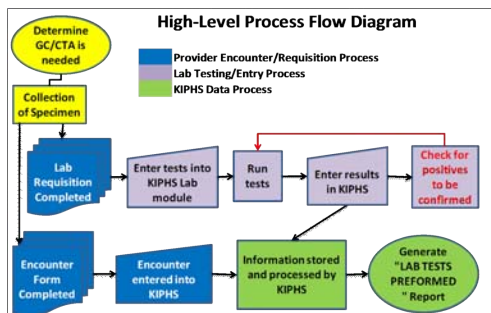
3. Examine the Current Approach

The total number of Gonorrhea tests performed did not match the total Chlamydia tests in 2009 or 2010. It was discovered that the problem was mainly in the early months of 2009. After the tests were run a second time after the end of the month, the 2010 totals matched.
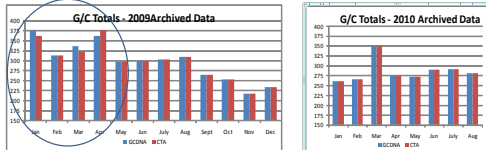

The problem appeared to be rooted in three possible processes:
a. Lab testing and reporting,
b. Numbers generation and reporting in the KIPHS data system itself,
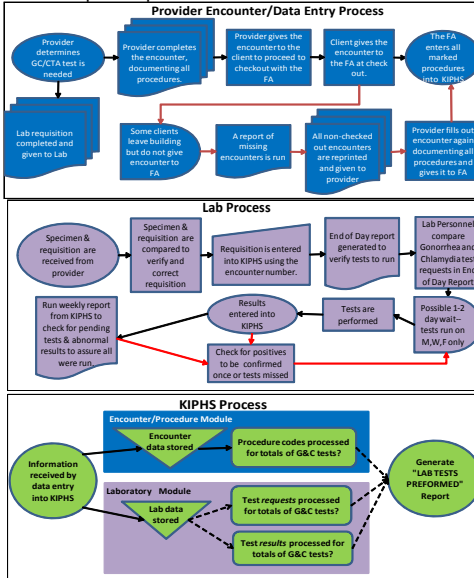c. Generation of encounter forms and data entry by provider and fiscal associates.

3. Examine the Current Approach (cont'd)

A Cause and Effect diagram was completed to determine possible causes within the three problem areas.
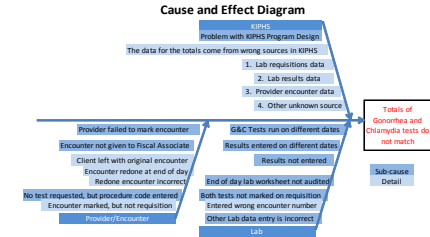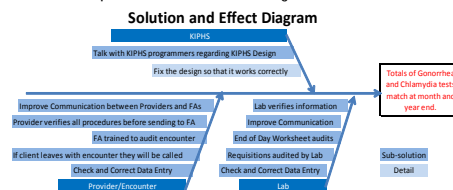

A low-level analysis of Process Flows were completed for each of the three possible problem areas.

It is important to note that KIPHS includes separate modules for lab data and procedure activity data.

4. Identify Potential Solutions

We also completed a Solution and Effect Diagram.

4. Identify Potential Solutions (cont'd)

The exercises above helped us reach 3 conclusions which gave us direction:
a. The Lab process has the most controls in place so it is not a likely problem area.
b. The Provider/Encounter process is the most complicated and time intensive to research.
c. The simplest course is to address the KIPHS process about program design before going further.

5. Develop an Improvement Theory

Prediction: If the data used to populate the totals for Gonorrhea and Chlamydia tests within the "Lab Tests Performed" report are being pulled from the correct sources within the KIPHS system, then the totals for the two tests will match for particular months and year totals.

DO
Test the Theory for Improvement

6. Test the Theory

The developers of KIPHS were contacted to learn how the numbers were generated for the G&C totals in the "Lab Tests Performed" report. It was discovered that KIPHS was pulling the data from two different sources – test request date and test completed date - which do not necessarily match. KIPHS redesigned the software in September 2010 to pull the numbers from the correct source – the test request date (which matches the encounter date).

The "Lab Tests Performed" report for G&C tests was run for 2009 through August 2010 after the redesign was complete. It was also checked for matching totals monthly from September through November 2010 to make sure the totals continued to match.

Study
Use Data to Study Results of the Test

### 7. Study the Results

The "Lab Tests Performed" report had been run before the changes were made to the software. Immediately following the changes in September 2010, the report was run again for the same periods (Jan.-Dec. 2009 and Jan-Aug 2010). It was found that the changes made in KIPHS corrected the problem going back to January 2009. The tests results now match in every month during these periods.
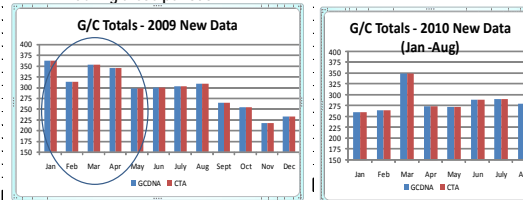
7. Study the Results (cont'd)

The September through November reports seem to indicate that the improvement held, except for the presence of one test in September:
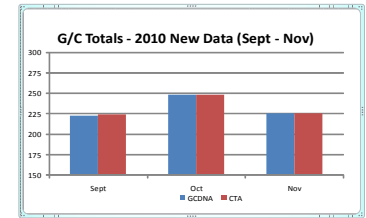
ACT
Standardize the Improvement and Establish Future Plans

8. Standardize the Improvement or Develop a New Theory

The original improvement theory was proven incorrect since the totals did not match in September after we corrected KIPHS.

However, when the correction was made in the design of KIPHS the totals of G&C tests matched in every month in which they had not previously matched. This indicates that an improvement was made to the system.

This particular improvement was standardized by redesign of KIPHS.

However, the September report showed that G&C totals did not match by one test. The discrepancy in the September test report indicates
--A different problem was at work in September not related to the KIPHS redesign.
--Investigation showed that the lab completed a Chlamydia but no Gonorrhea test on one person's specimen, and that the test had not been requested on the requisition.
--The lab's system of checks and balances may need to be further examined, but one error out of 2,000-3,000 tests a year may not require quality improvement action.

9. Establish Future Plans

A. Establish a method with KIPHS to correct lab data inside the lab module after data has already been entered.
B. Create an option for a more detailed "Lab Tests Performed" report to show which clients did not receive both tests.
C. Develop a system to cross-check between the encounter form and the lab test requisition form.
D. Analyze the provider/encounter/data entry system for quality improvement to make it a viable way to validate the lab totals.