

2014 Gage Awards

Reference #	7492069
Status	Complete
Name of hospital or health system	Parkland Health & Hospital System
Name of project	Improvement in the hospital Employee Surveillance
CEO name	Bob Smith
CEO approval	Check here to confirm that your CEO approves of this project being submitted for a 2014 Gage Award
Submitter name (first and last)	Katherine Yoder
Submitter title	VP Government Relations
Submitter email	katherine.yoder@phhs.org
Submitter phone	214-590-0122
Project contact person's name (First and Last)	Angelique Ramirez
Project contact title	Medical Director Occupational Health Services
Project contact email	ANGELIQUE.RAMIREZ@phhs.org
Project contact phone	214-590-4842
Within which of the two categories does your application best align?	Population Health

<p>1. Provide a brief description of the project. (This section should resemble an abstract for a poster presentation or an abstract for a peer reviewed journal. Include an objective, data sources, study design, findings, and conclusions.)</p>	<p>Objective - This project was initiated in December 2012 with the capture of current employee TB surveillance rates. This metric was not one that had been previously measured, monitored, or reported on within the institution. Because it had not been previously monitored, initial efforts were devoted to creating an operational definition for this metric utilizing the employee health database and documentation practices of the time. It was determined that compliance rate with employees having had a TB test within the past 12 months was 50%. Shortly thereafter a faculty member who had been actively involved with patient care was diagnosed with active tuberculosis. This incident combined with our recently acquired knowledge of compliance rates along with Infection Prevention Committee's annual request for conversion rates created the motivation for this project.</p> <p>By CDC standards Parkland is considered a high risk hospital for tuberculosis with 69 cases of culture positive patients admitted in CY 2012. As a result of their employment in a high risk hospital, Parkland employees are at risk for developing either tuberculosis infection or tuberculosis disease with risk of transmission to patients or coworkers. In 2013, in addition to the faculty member, Parkland had a respiratory therapist and a parking valet attendant develop active tuberculosis disease presumably as a result of occupational exposure. Healthcare workers are a population of concern because not only do they represent a risk to themselves but to patients; of note, tuberculosis in the employed population is particularly concerning because healthy, immunocompetent individuals will often have minimal symptoms and yet be contagious. As a result healthcare worker surveillance is particularly important for the protection of both employees and patients.</p> <p>The goal of this project was to ensure that we had an effective employee TB surveillance program that minimized risk to our employee population of 10,000 as well as to our patient population.</p> <p>Data Sources – TB test results in employee health database</p> <p>Design – Three major initiatives were implemented over the course of the project: transition to birth month testing, transition from skin test to QuantiFeron, and the development of management reports. PDSA methodology was used throughout with the primary metric being compliance with TB testing rate.</p> <p>Findings – An increase in TB testing compliance rate from 50% to 99%. A decrease in the volume of TB conversions.</p> <p>Conclusions – A comprehensive TB screening program with ongoing analysis of conversion results can result in measurable decrease of TB transmission within the employee population.</p>
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2. Describe the methods use in this project. Include where, why, and how the project was accomplished.

From an internal review of current practices and an extensive review of best practices, the Occupational Health Services team developed a comprehensive TB program with three major interventions:

1)Transition to birth month testing – every employee is considered “due” for their TB test the first day of their birth month and noncompliant after the last day of the month. Standardizing test to birth month accomplished multiple goals:
a. Every employee knows his/her birth month
b. Simplifying from the potential of 365 different due dates for annual screening to only 12 different due dates a year allowed the OHS team to send out automated reminders as well as allow the creation of reports
c. By randomly distributing screening due dates of employees who work in any one location throughout the year ongoing screening of all areas of the hospital is occurring allowing us to identify potential system problems real time

2)Transition from TB skin test to QuantiFeron (a blood test) as the primary TB test – this transition gave us distinct advantages:

- One visit per employee – a major advantage for hospital employees and managers of employees who work at the bedside; any time away impacts direct patient care. Also a major advantage for the Occupational Health clinicians. With the significant increase in compliance a doubling of the number of employees who visited the employee health clinic monthly occurred; because of the change to QuantiFeron there was no overall increase of visits due to the TB testing program.

- A more specific test for employees. Many foreign born employees have received BCG vaccine which causes a false positive skin test. These employees were effectively removed from the TB screening program because the test we were using was not effective in them. From small sample analysis we knew that one third of hospital employees were past positive, many of them due to BCG vaccine.

3)Reports – a standardized suite of reports were created for management and a partnership with HR Employment Experience was developed so that HR Business Partners could work with the managers to understand the expectations, reports, and facilitate compliance

- a. First of the month – report to managers of which employees are due for TB testing

- b. Mid month – report to managers of which employees are still not compliant

- c. End of the month – report to managers of noncompliant employees

Metrics were tracked throughout the project by the team including the overall TB testing compliance rate as well as the number of noncompliant employees per month. In addition, feedback from employees, managers, and the HR Business Partners was continually reviewed. Plan, Do, Study, Act model was used throughout the project to improve the compliance rate.

<p>3. Describe the results of the project. What data was used to support improvement results?</p>	<p>Project compliance rate increased from 50% to 99% in first six months and it has sustained. TB test compliance is defined as an employee who had a TB test within the past 12 months.</p> <p>Also tracked is the number of employees noncompliant with birth month testing. This number decreased from 250 employees in March 2013 to 34 in November 2013. (These employees are subject to corrective action and the HR will work with managers to investigate the reasons for noncompliance.)</p> <p>A conversion is defined by the Centers for Disease Control (CDC) as an employee who was previously negative but is now positive on TB testing. Analysis of conversion results showed an initial increase in conversion volumes attributed to the increased number of employees being tested as well as to capture of conversions that occurred in past years. A cluster is defined by the CDC as two or more conversions occurring in a three month period in the same location or role. Each cluster identified triggered a review process which included partnering with Infection Prevention, Occupational Health, and the operational area involved to identify if there were system issues leading to the conversions. During the past year, clusters were identified in the areas:</p> <ul style="list-style-type: none"> - OR – this was a surprise to the team since the OR did not see a high volume of tuberculosis patients. It was the largest cluster with 8 conversions identified. An in depth review process revealed that the OR did not appropriate HEPA filters in place to prevent transmission of airborne infection. These filters were put in place by Engineering immediately. Since then we have not had conversions in the OR area. This intervention protected both employees and patients. - Sitters – this group of employees had four conversions. Sitters remain with patients for prolonged periods of time in a confined space. In the review process it was identified that due to increased need many nonclinical employees who had not been fit tested were being used as sitters. (Fit testing is a procedure to determine that an employee can adequately be protected from airborne transmission of an infection; it includes determining type and size of mask for an individual employee; it is required annually.) As a result of these findings nonclinical staff are no longer assigned to observe patients in isolation. -Transporters – this group had three conversions. The review identified that these employees were not routinely being fit tested. Fit testing procedures were changed to encompass any employee who had need to enter an isolation room not just clinical employees. This procedure change resulted in fit testing of environmental service workers who cleaned isolation rooms, clinical engineering staff, personnel who deliver food trays, and police officers.
<p>3A. Attachment, if applicable (Only graphically displayed data such as charts will be accepted. Data should include baseline and improvement data)</p>	<p>TBTestChartFY2013.doc (85k)</p>

4. Describe what happened as a result of the project. Was the improvement related to the intervention? Can the project be duplicated by other organizations?

As a result of this project compliance with TB surveillance improved and has been sustained. More importantly, due to having high compliance rates the TB test results were then able to be analyzed to improve care for both employees and patients with a resulting decrease in employee conversion rate. More intangible results include an increased awareness of TB and risk of TB amongst our employee population and an appreciation that that risk is being taken seriously.

Though the incidence of tuberculosis is decreasing nationally it remains high in certain populations (the foreign born, the homeless) which are populations that essential hospitals serve. In these institutions, effective employee TB surveillance is critical not just for the protection of the employees but also for the protection of patients. Yet, compliance with TB surveillance is a metric that is not even monitored in many cases. Granted, it's unlikely that many institutions will have a compliance rate as poor as ours was initially; it's just as unlikely though that many institutions will have a compliance rate as high as our current rate is unless it's being monitored. Too often, employee care is not managed with the same principles of reliability, quality, and safety as is patient care. If the goal of employee surveillance is considered (minimize risk to individual employee, monitor risk to employee population as whole) then it's clearly deserving of the same level of commitment as patient care.

A critical component of this project was the transition to use of an IGRA as the TB screening test of choice. Again, this transition was worthwhile in our case because of the large number of employees who are foreign born and who had previously received BCG (a vaccine that makes the skin test meaningless). Many essential hospitals also have a large rate of foreign born employees for whom an IGRA is a more meaningful screening test. The cost effectiveness of this test can only be addressed from a whole system perspective that considers employee time as well as the cost of the test as well as the the number of employees for whom the skin test is not an effective test.

As with most improvement work other opportunities were identified in the course of this project and are now the subjects of their own projects. One such opportunity was the medical staff. Mandatory health requirements including vaccinations and TB surveillance were adopted as part of credentialing requirements and are now being monitored by the Occupational Health department on behalf of the Credentials Committee. Another opportunity is exploring the role of the TB blood test in the management of the patient population and the advantages that it has over the skin test for clinical management.

<p>5. Describe how patients, families, and if appropriate, community was included in the work.</p>	<p>For this project the patients were our individual employees and the community was our employee population. We did not work directly with employees for this project but we did have plenty of feedback from the employees throughout the project – this feedback was utilized on an ongoing way to improve services. Specific changes that were implemented as a result of this feedback:</p> <ul style="list-style-type: none"> - Development of an FAQ that explained the new testing program and the differences with the new TB test from the skin test - Partnership with the lead nurses in our off campus clinics to provide TB screening services to off campus employees to prevent their having to travel to the main campus - Implementation of early morning hours to accommodate night shift employees - Use of a new employee health record system that includes an employee portal so that employees can access their TB test results - Implementation of a direct observed treatment regimen of 12 weeks of INH/rifapentine for new converters (as opposed to 9 month INH therapy) - Partnership with Employee Physician office to provide treatment options for those employees identified as past positive
<p>Last Update</p>	<p>2013-12-15 20:18:54</p>
<p>Start Time</p>	<p>2013-12-15 19:04:39</p>
<p>Finish Time</p>	<p>2013-12-15 20:18:54</p>