Data Driven Science

Improving turnaround time from collection to receipt

Dorothy Baynham | Manager, Special Microbiology | April 2019
## Benchmark Goal

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Benchmark</th>
<th>Performance Target</th>
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<tbody>
<tr>
<td>Promote rapid delivery of specimens to the laboratory</td>
<td>Receipt within 1 day of specimen collection</td>
<td>≥67% of specimens received within 1 day</td>
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</tbody>
</table>
2014

- Tennessee was still using the U.S. Postal Service for primary delivery of samples
  - 34% of specimens were received within one (1) calendar day
  - No way of tracking specimen for the health departments or the laboratory
• April 2015
  – Statewide courier was implemented primarily for Newborn Screening samples
    • Included pick-up of specimens at all major health departments throughout the state
    • Rural health departments call by 4:00pm for an evening pick-up
    • Specimens had to be placed in a lockbox by 5:00pm
  – Monday – Friday pick-up with delivery to the state lab by 7:00am Tuesday – Saturday
Did our TAT improve?

- Not the significant improvement we had hoped for
- Courier service was only used for part of the year (April – December)
  - That had to be the problem!
2016

- A full year of the courier system
- Still not what we hoped for
- Time to figure out the real issue
  - Time for a QA study!

% of Specimens Received within 24 Hours

<table>
<thead>
<tr>
<th>Year</th>
<th>% of Specimens Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>34</td>
</tr>
<tr>
<td>2015</td>
<td>35</td>
</tr>
<tr>
<td>2016</td>
<td>44</td>
</tr>
</tbody>
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Finding the issue

- February 2017: Special Microbiology initiated a QA study to determine if health departments were batching specimens
  - **Working definition of batching:** Three (3) or more specimens collected from the same patient on ≥3 separate days all received in the laboratory on the same day by the courier
  - **Note:** specimens collected over the weekend were not considered batched unless they were not received on the following scheduled courier deliver day
  - Study sample: One (1) month of specimen receipts
February 2017 QA study findings

- 60 specimens were flagged as batched
  - Represented specimens on 15 patients
- 75% of all batched specimens were from two (2) county health departments

![Pie chart showing specimen distribution by county and region]
Action steps taken

• We told on them

• Reported our findings to the state TB Elimination Program
  – Information was shared with statewide regional TB programs on statewide monthly calls
  – Regional nursing supervisors also received information
  – State TB Elimination Program worked directly with largest “offenders”
Six (6) month follow-up

• June 2017:
  – QA study was done mimicking the February 2017 study
  – Same working definitions
  – One (1) month of specimen receipts
June 2017 QA study findings

- 21 specimens were flagged as batched
  - Represented specimens on 7 patients
- 65% decrease in the occurrence by county and amount of specimens batched

![Graph showing % of specimens batched by Region/County Health Department for February 2017 and June 2017.]

- County A
- County B
- County C
- County D
- Region A
- County E
Improvement in TAT

- **2017:** 58% of specimens received with 24 hours of collection
  - 31.8% improvement from 2016
What next?

• Monitor metric annually
• Provide findings to state TB Elimination Program
• Planned revision of batched:
  – Two (2) consecutive specimens received in one (1) day on the same patient
Questions

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