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Increasing Ultrasound-Guided Thyroid Biopsy Yield

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Background

- Thyroid nodules are a very common ultrasound finding
 - Prevalence of up to 68%
 - 5-15% of these are malignant and many require biopsy by fine needle aspiration (FNA)
- Rate of inadequate biopsy varies widely despite ultrasound guidance (59.3%-99.6%)
- Two modifiable factors are consistently identified which improve thyroid biopsy yield
 - Operator experience
 - Cytopathology involvement
- Obtaining adequate biopsies can impact patient care
 - Eliminate need for additional invasive procedures
 - Eliminate need for follow up imaging
 - Decrease anxiety associated with an indeterminate biopsy result

Objectives

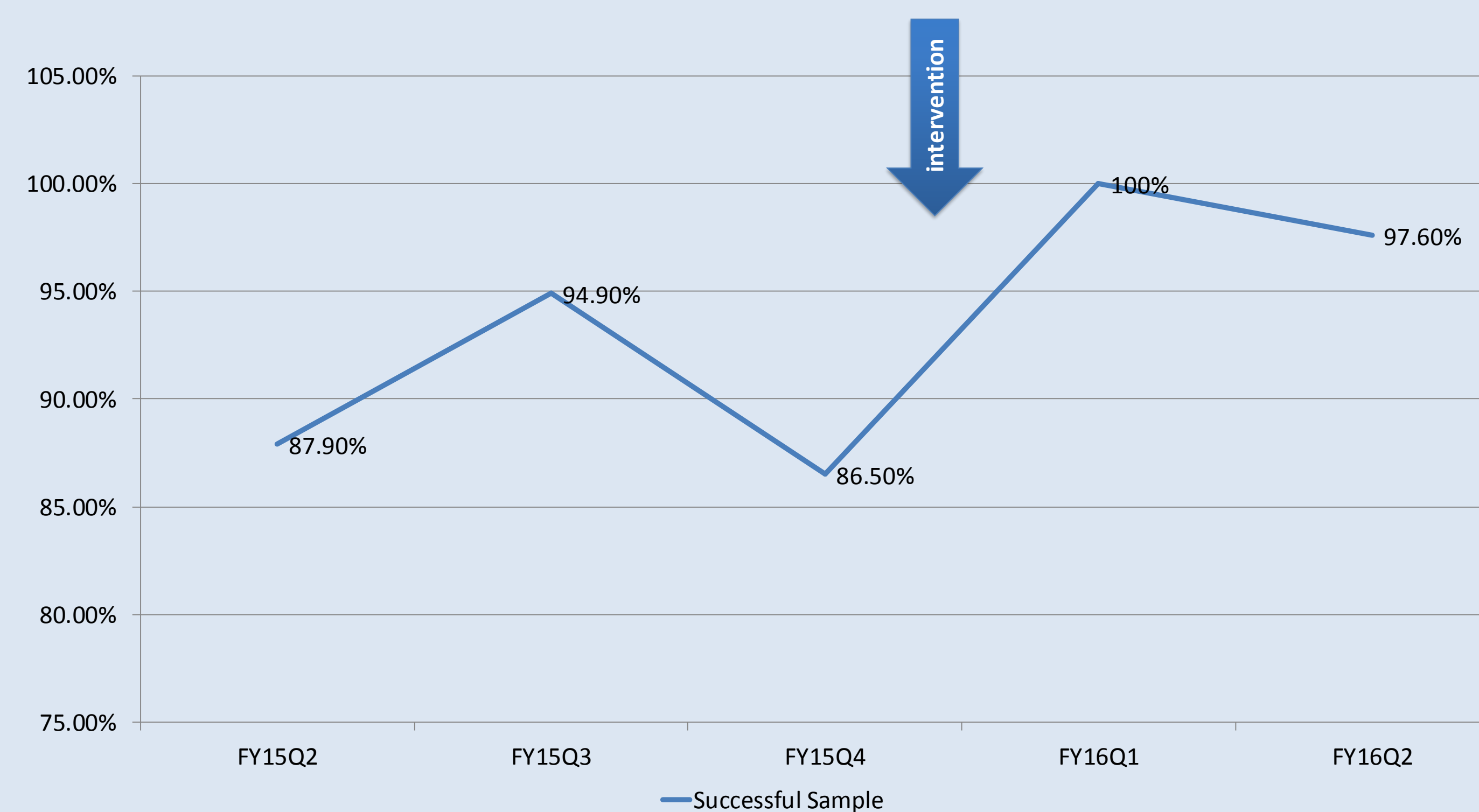
- Conduct Plan-Do-Study-Act (PDSA) performance improvement project to improve thyroid biopsy yield
- Short-term → reduce unsuccessful biopsies by 50%
- Long-term → eliminate unsuccessful biopsies

Methods and Materials

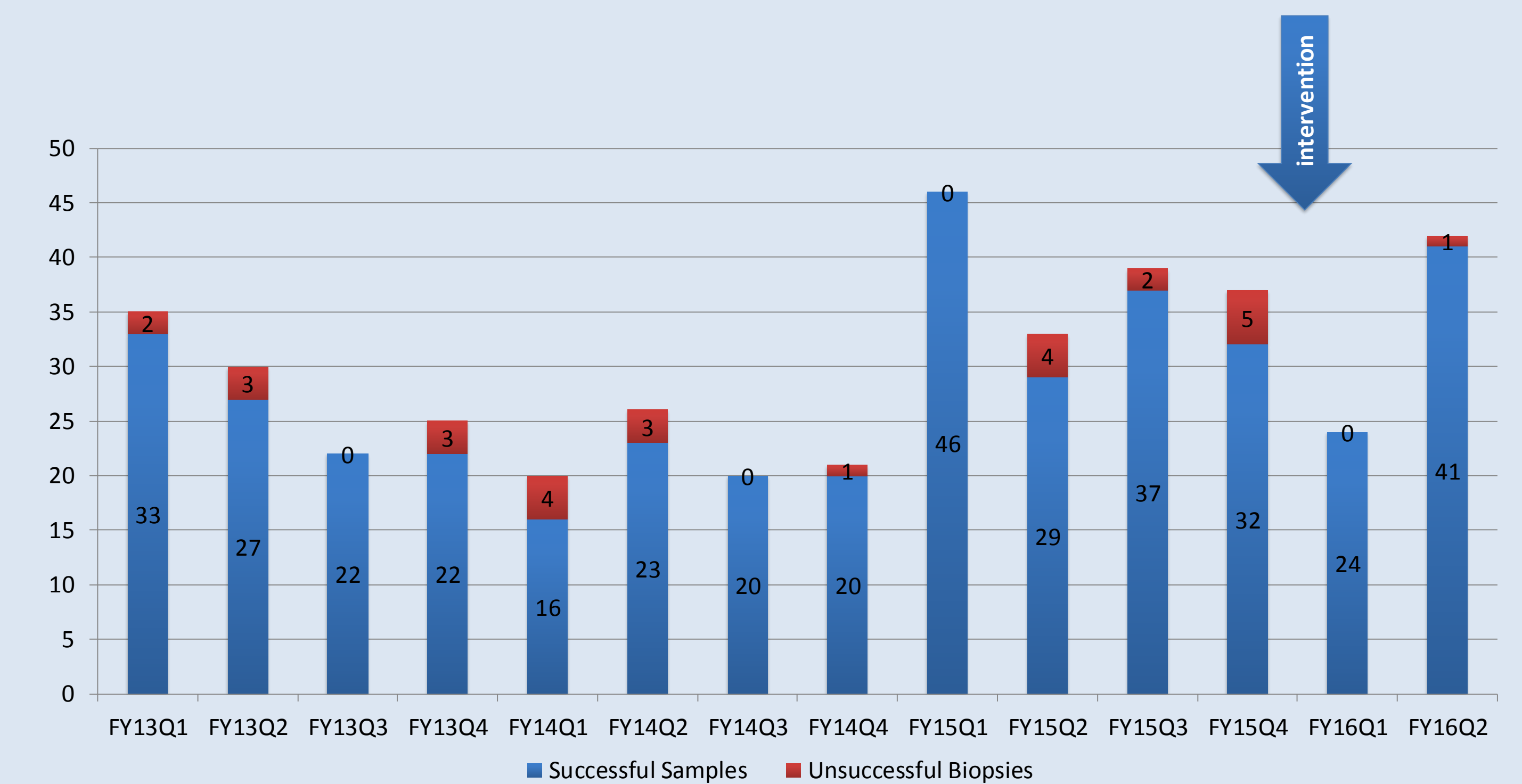
- Unsuccessful biopsies reviewed for underlying causal factors
- 2 major factors → 1) lack of cytology availability and 2) operator variability
- Schedule adjusted to accommodate all patients into thyroid clinic conducted by single subspecialist
- Coordination with TJUH pathology department to provide tele-cytopathology services for review of all ultrasound guided thyroid biopsies.
- Resident team member collects and analyzes inadequate thyroid biopsies for future improvement events (PDSA)

Results

- In the first two quarters of FY 2016 there were 1 and 0 inadequate biopsies, respectively (100%, 97.6%)
- Fallout → unexpected lack of tele-cytopathology



Graph 1. Thyroid Biopsy Successful Sample Rate.



Graph 2. MHD Thyroid Biopsy Volume.

Significance/Lessons Learned

- In the first two quarters since quality improvement measures have been implemented there has been improvement in the the rate of successful biopsies
- Leveraging provider experience can provide improved care patient care
- Standardizing the approach improves team performance
 - Support staff better understand their role with less variability on the part of the proceduralist
- Inter-disciplinary collaboration and technology leveraging allow involvement of cytopathology increases adequate biopsy yield

Future Direction

- Continue to analyze adequate biopsy rates to verify improvement (PDSA)
- Periodically review fallouts to identify common cause to implement future improvements (PDSA)