

# Preventing Specimen Labeling Errors With Transformational Nursing Leadership & Technology

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## Problem Statement

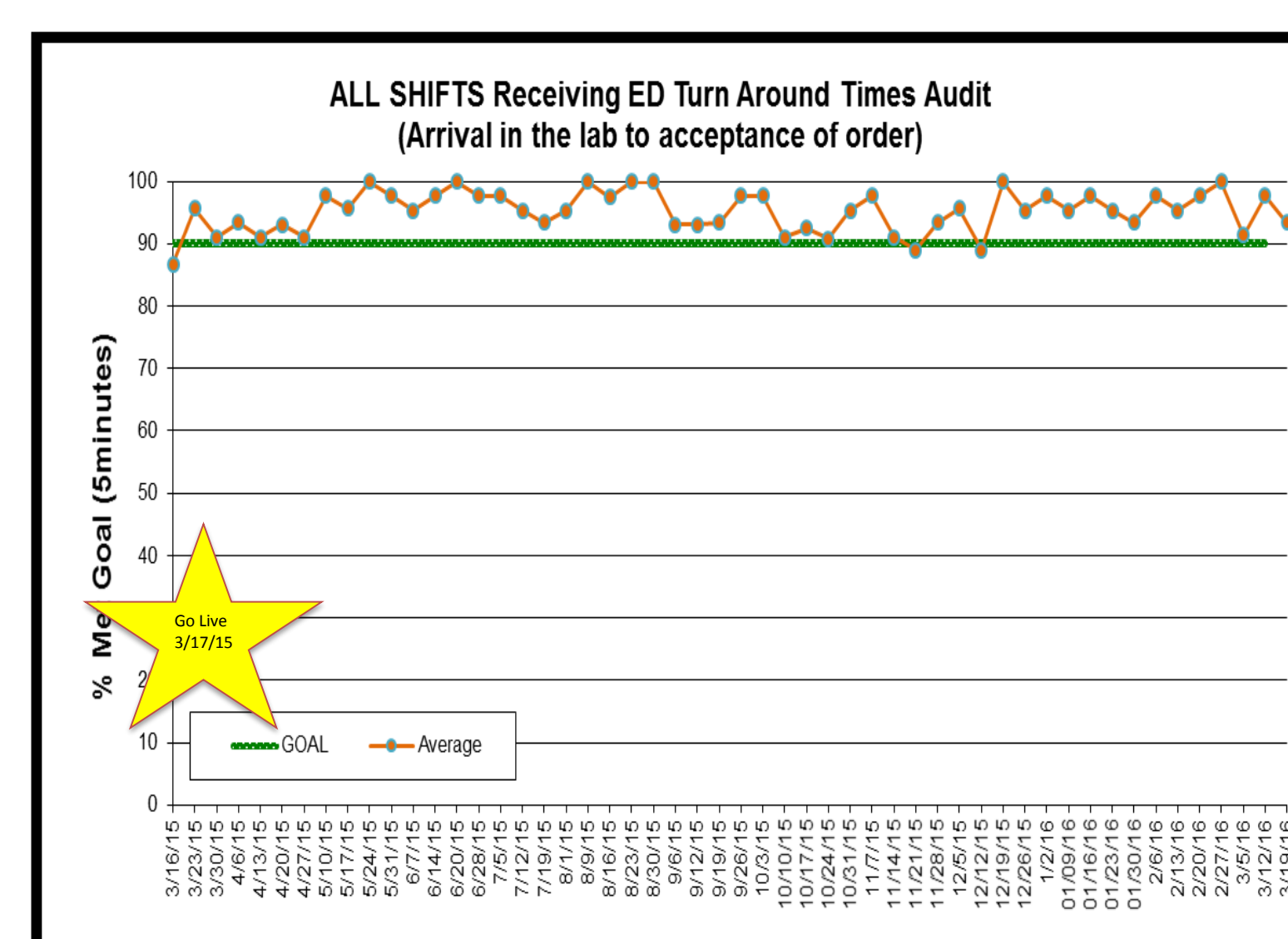
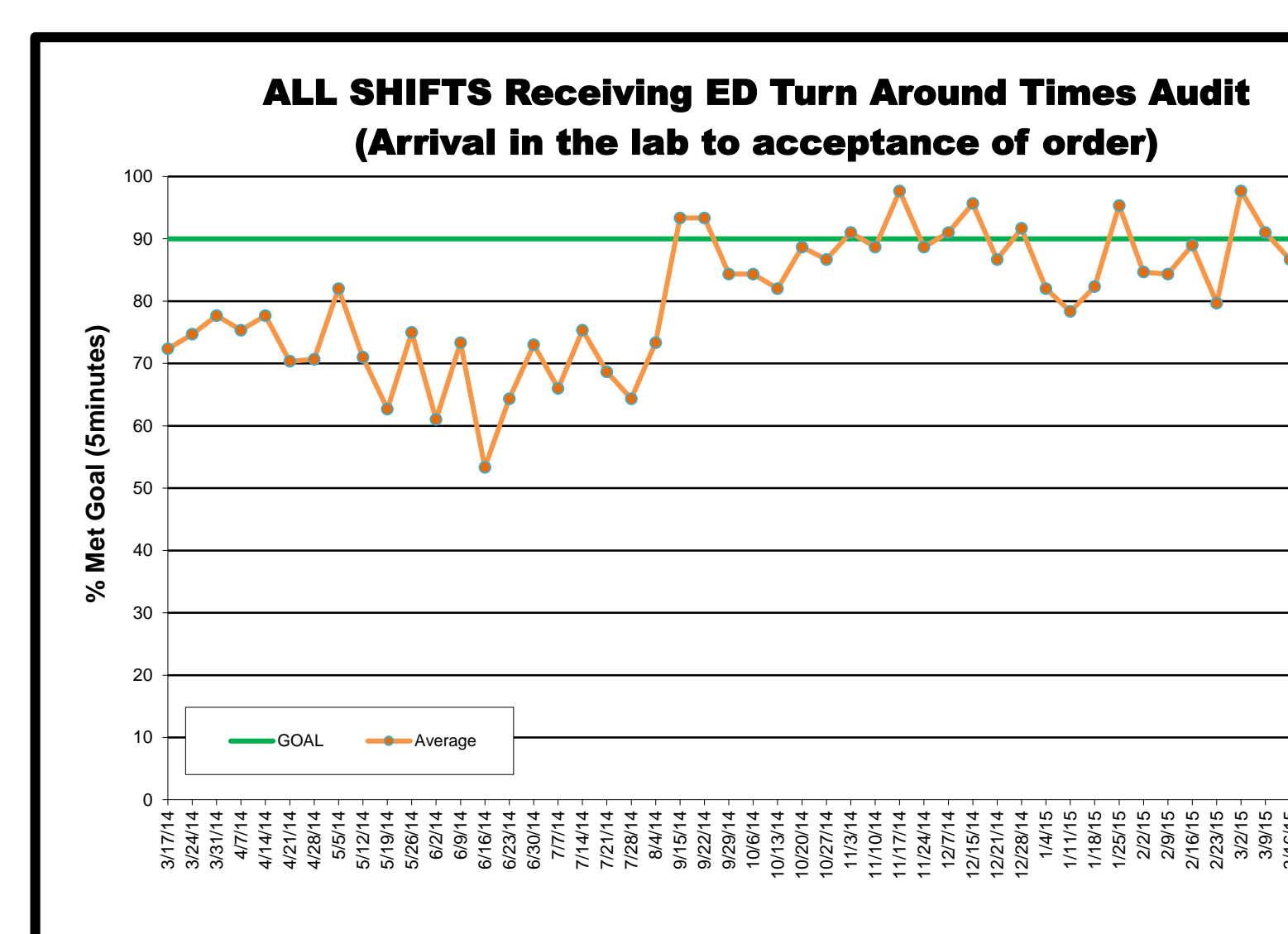
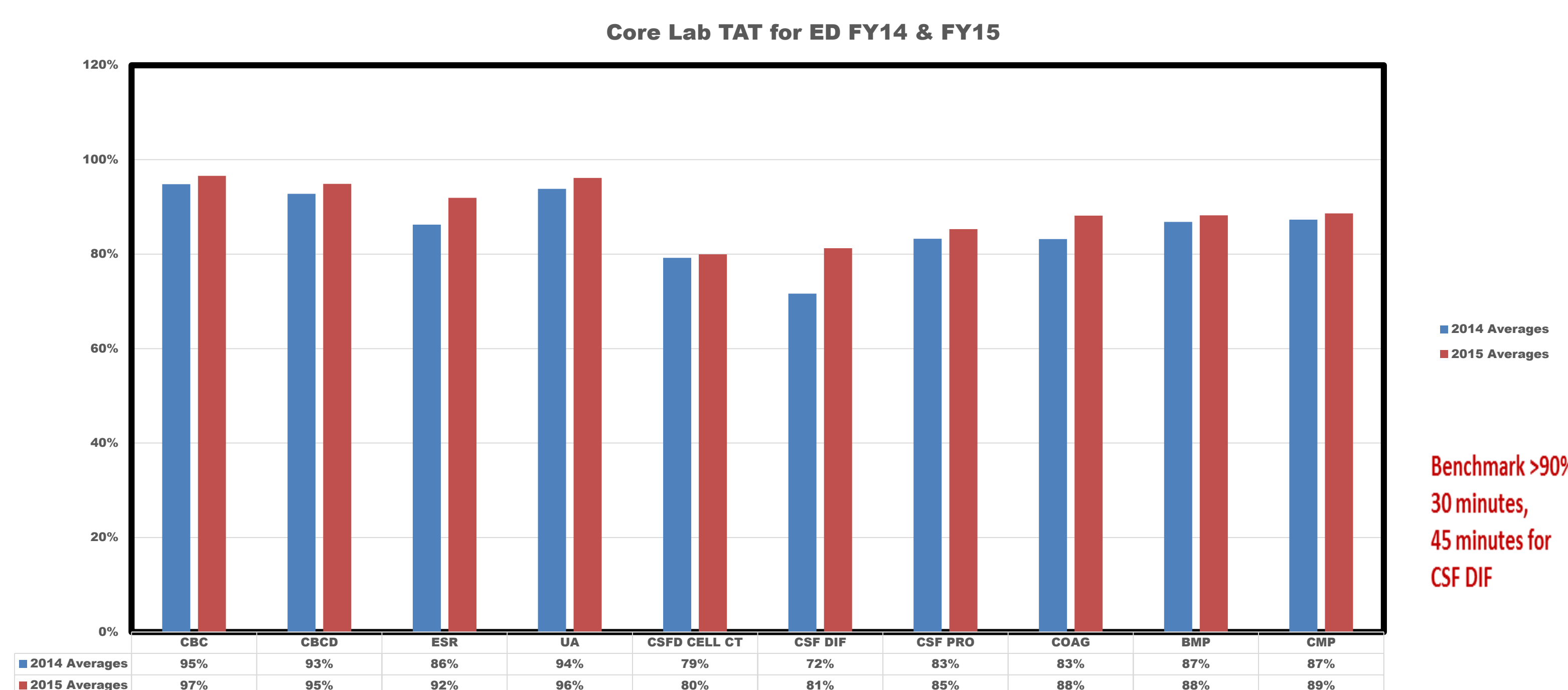
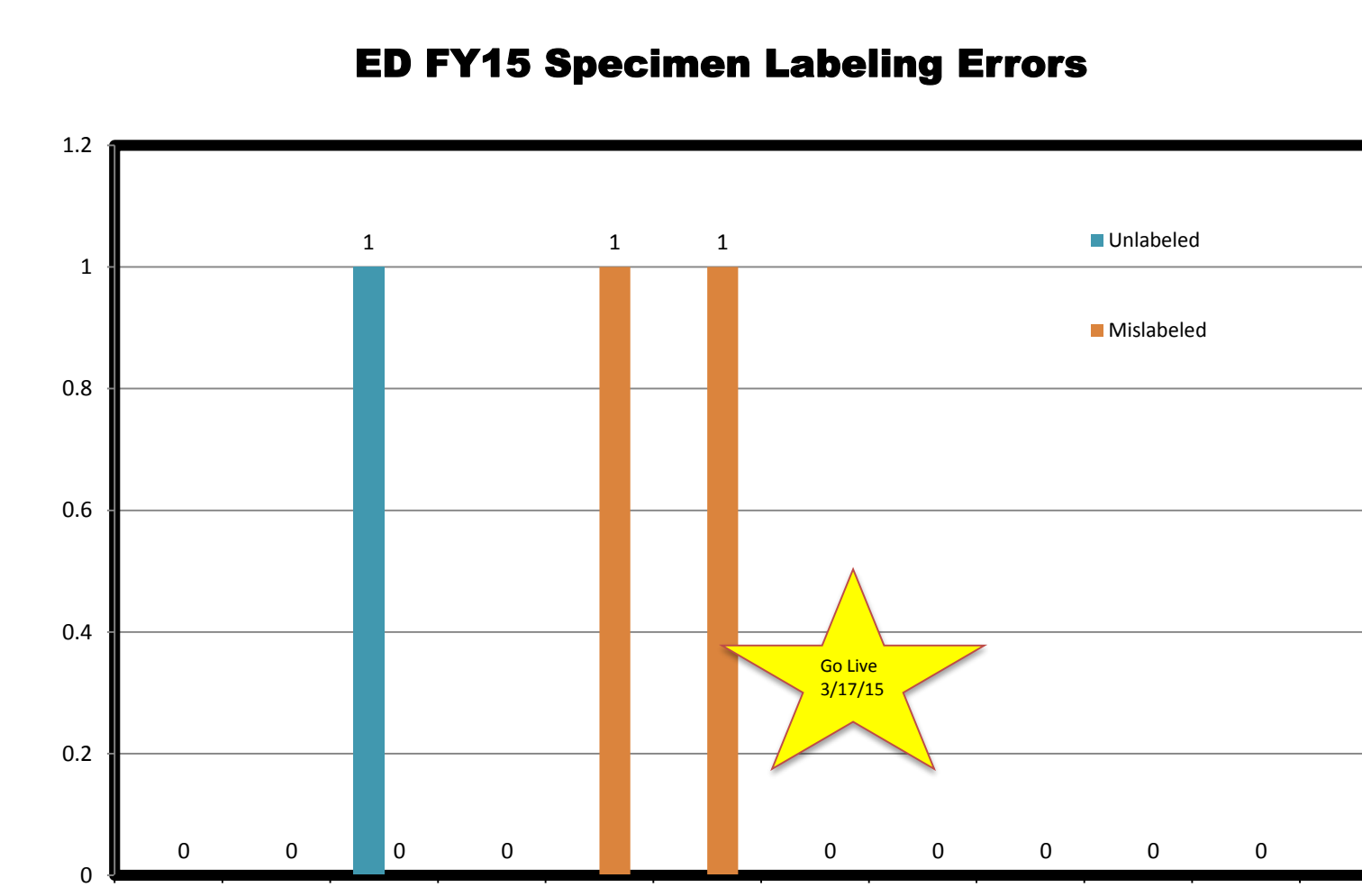
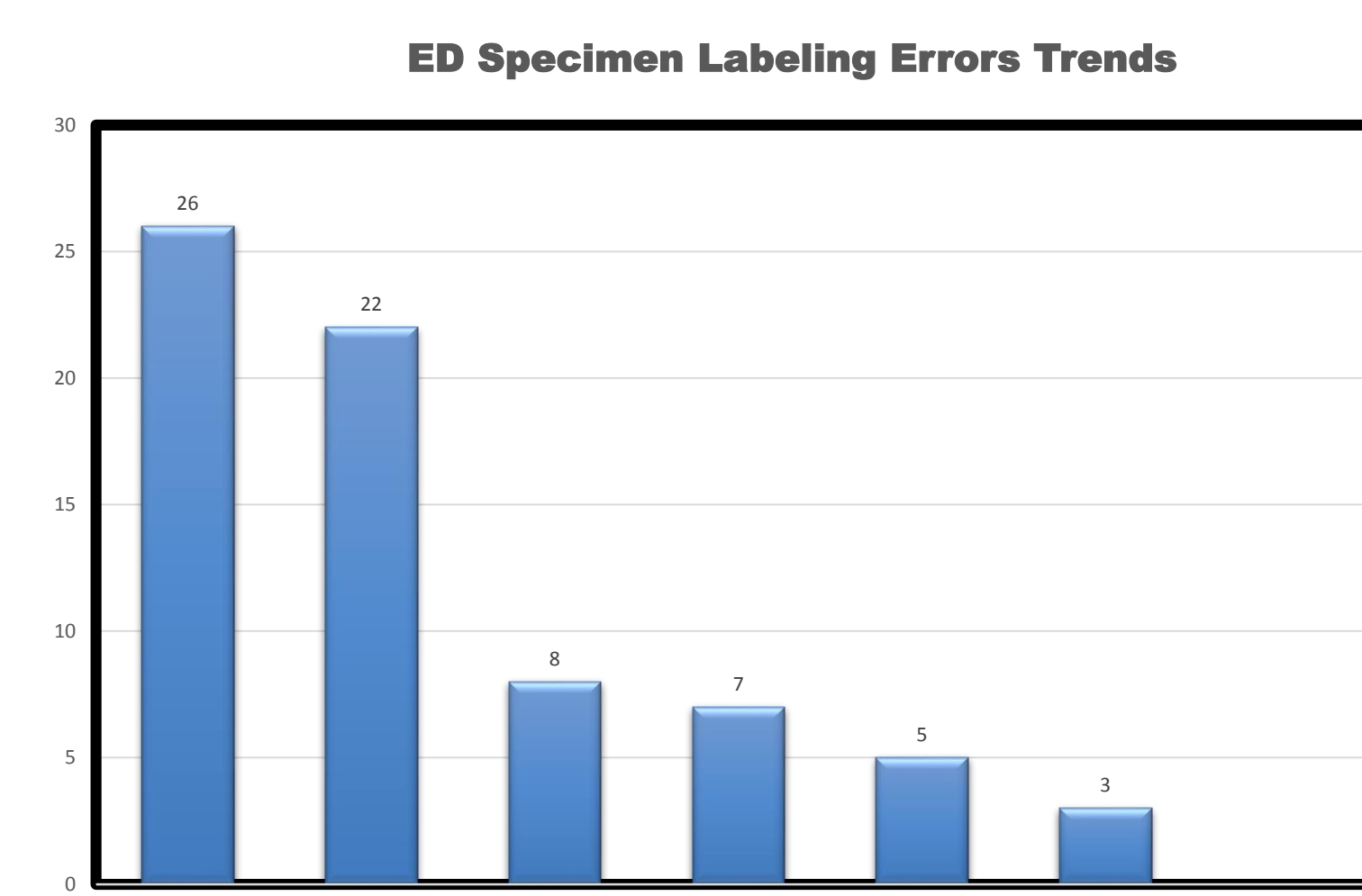
The potential consequences of misidentified laboratory specimens span from a near miss to severe patient injury or death. The occurrence rate of Wrong Blood in Tube (WBIT) has been reported as 1:1986 specimens (Stubbs, Bundy, & Van Buskirk, 2012). High acuity and busy clinical areas such as the emergency department (ED) are at even higher risk for having such errors; Wagar et al (2008) report a tenfold increase in specimen labeling errors in the ED, from 0.92 errors in every 1,000 specimens in the general hospital care setting, to 9.2/1,000 in the ED. The pediatric ED requires even higher vigilance given the narrow margin for error in this high risk population and high acuity environment, where clinical lab results can direct diagnosis, treatment, as well as patient disposition. A review of the literature suggests use of barcoding technology can markedly reduce misidentification and specimen mislabeling errors.

## Approach

The Emergency Department in this leading pediatric level one trauma center was identified as the location for the pilot of the positive patient identification specimen labeling project through barcoding technology. The project involved incorporating specimen management barcoded labeling application (SBML) within the EMR, and embedding a "hot button" within the EMR that would allow the bedside clinician to launch the specimen collection application within the patient's record. The same barcode scanners currently used in medication administration were employed, and lab specimen label printers were installed in every patient room. True innovation is achieved when end-users are able to launch one application within another application. The single login saves time, eliminates unnecessary steps, and provides ease of use. Additional time is saved in that specimens are labeled with accession numbers printed on the label at the point of collection, thus eliminating the need for the specimens to be relabeled once received in the lab. An interdisciplinary team consisting of nurses, and LIS and IM analysts, developed a comprehensive project and communication plan to optimize the integration of two healthcare technology systems and two departmental systems for process and outcomes success.

## Outcomes

Successful implementation of the SMBL project occurred on March 17, 2015, and had a significant early positive impact on the workflows of both bedside clinicians and lab technicians. Most end users report significantly improved workflow efficiency as a result of the eliminations of several steps in workflows. No specimen labeling errors have occurred since going live; and a marked improvement of laboratory result turnaround of 5 to 10 percent is noted.



## Conclusion

This project contributes to the elimination of nursing and lab rework, unnecessary process steps and documentation, specimen redraws due to incomplete information or WBIT, improved specimen quality, and improved disposition of patients and ED bed utilization due to the decreased processing time and turnaround time to resulting.

## Lessons Learned

- ❖ A strong partnership between Nursing Expertise and LIS Expertise was essential in leading a successful project implementation
- ❖ Strong Executive and Departmental Leadership support
- ❖ An Organizational and Departmental Culture that places a high value on patient safety
- ❖ Detailed Workflow Planning
- ❖ End user involvement throughout development and testing
- ❖ Diligent equipment testing
- ❖ Maintain detailed and accurate project documentation
- ❖ Maintain an Issues Tracker including steps taken to resolve issues
- ❖ Evaluate the need to update Dependent Applications prior to implementation
- ❖ Evaluate for potential Network & Server Issues
- ❖ Frequent and thorough communication to stakeholders throughout all stages of the project

## Next Steps

After this successful SMBL pilot program in the ED, evaluation for a roll out to the inpatient departments will begin.

## References

- Stubbs, J.R., Bundy, K.L., van Buskirk, C.N. (2012). Preventing transfusion reactions. In: Popovsky, M.A., editor. *Transfusion Reactions*. 4th ed. Bethesda (MD): AABB; 597-647.
- The Leadership Imperative: TIGER's Recommendations for Integrating Technology to Transform Practice and Education (2014)
- Wagar, E.A., Stankovic, A.K., Raab, S., et al. (2008). Specimen labeling errors: a Q-Probes analysis of 147 clinical laboratories. *Arch Pathol Lab Med.*; 132:1617-1622.