Improper specimen labeling of biopsy samples is a serious problem that may be improved through quality improvement methods. Misidentification of samples can cause substantial harm to patients through diagnostic delays, administration of inappropriate treatments, and can result in a loss of trust in healthcare. Labeling errors of specimens occur at a rate of 1 to 50 per 1000 labels and laboratories with ongoing quality monitors for specimen identification are associated with lower labeling error rates. 2-Step verification has been used effectively to prevent medication errors and can be translated into the practice of radiology specimen labeling.

### Methods

Quality improvement meetings in the radiology department identified a reduced rate of labeling errors specifically in breast imaging, which utilized a 2-person verification on the labeling error rate. The department identified a reduced rate of labeling errors of specimens sent without patient ID labels, occurring at a rate of 35.5% (11/31). The ultrasound modality had the highest labeling errors at 46.8%, occurring in 54.9% (17/31) of the samples studied. Since the intervention was implemented, one mismatch patient identification labeling error occurred in ultrasound in Q1 of 2018, representing a severity rating of 5. Ultrasound had the highest frequency of specimen labeling errors with one occurring even after numerous interventions. Constraints on time and feelings of production pressure may contribute to process deviation, resulting in workflow shortcuts that increase the risk of errors. Mismatching specimen labels as well as samples not containing a patient identification label indicate a need for greater adherence for the 2-person verification process. More time is needed to assess the effectiveness of the modified workflow procedure as Poisson's test was not significant (c=1,k=2, 2833, P(X>=1)=.71).

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### References


### Conclusion

Quality improvement analysis as well as refinement of workflow procedures can help reduce labeling error rates and improve reliability of processes. Finding outliers within one’s institution can provide an excellent option for identifying best practices and disseminating those practices across service lines. As workflow can grow and merge, this will be both a challenge and opportunity for improvement. It is important to work with staff and other stakeholders to come up with innovative solutions that can be effectively implemented in the workplace. Additional interventions such as the application of bar code-based patient identification may be applied to radiology samples, as it has shown effectiveness in other areas of medicine. Understanding process constraints, empowering medical staff, and educating providers on the dangers of labeling errors will benefit patients and improve quality of care.