

## Patient Safety: Demand for Change in Anatomic Pathology

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Today, more than ever, health care providers are facing increased demands to control costs and address patient safety issues. One attractive area for all medical specialties is to reduce errors. Published data indicate that laboratory services, while consuming about 10% of the health care budget, drive 60-70% of health care decisions.<sup>1</sup> In no area is this more apparent than Anatomic Pathology, where patients experience surgery, radiation, chemotherapeutic and other treatments – all critically dependent on the accuracy of pathologic diagnosis.

An April 2009 article in the American Journal of Clinical Pathology by Zarbo et al at Henry Ford Hos-

pital in Detroit<sup>2</sup> showed a dramatic reduction in anatomic pathology errors (62% reduction in misidentified cases and 95% reduction in slide misidentification) after implementing a bar code labeling system throughout their work process. Our own experience is much the same. Applying grocery store technology is not as glamorous as delivering a chemotherapeutic agent directly to its target by monoclonal antibody, but it has substantially improved patient care.

In 2007, as we planned the opening of our new centralized anatomic pathology laboratory, we identified two common sources of errors:

- Transcription errors associated with typing or hand writing

numbers or patient identifying information from one media to another.

- Paperwork and specimen/slide mismatches

With an opportunity to create a laboratory from scratch, we committed ourselves to finding ways to eliminate or substantially reduce hand labeling or transfer of case numbers using careful and complete use of bar codes and to digitize paper records and attach them at first point of contact to each case record.

We use bar codes to track specimens from the time they are picked up by our couriers and to register their arrival at the local laboratory. The FedEx style of tracking assures that we know what we pick up from each client, and where specimens are throughout our system. Bar codes are placed on the client's counter top and on the CellNetix provided requisitions. When received in the laboratory, staff, handling one specimen at a time, print and apply 2D (two dimensional) bar code labels, and all accompanying documents are digitally scanned into the specimen LIS record. No further manual entry of accession codes is required and the paper documentation is available to all staff working on the patient specimens.

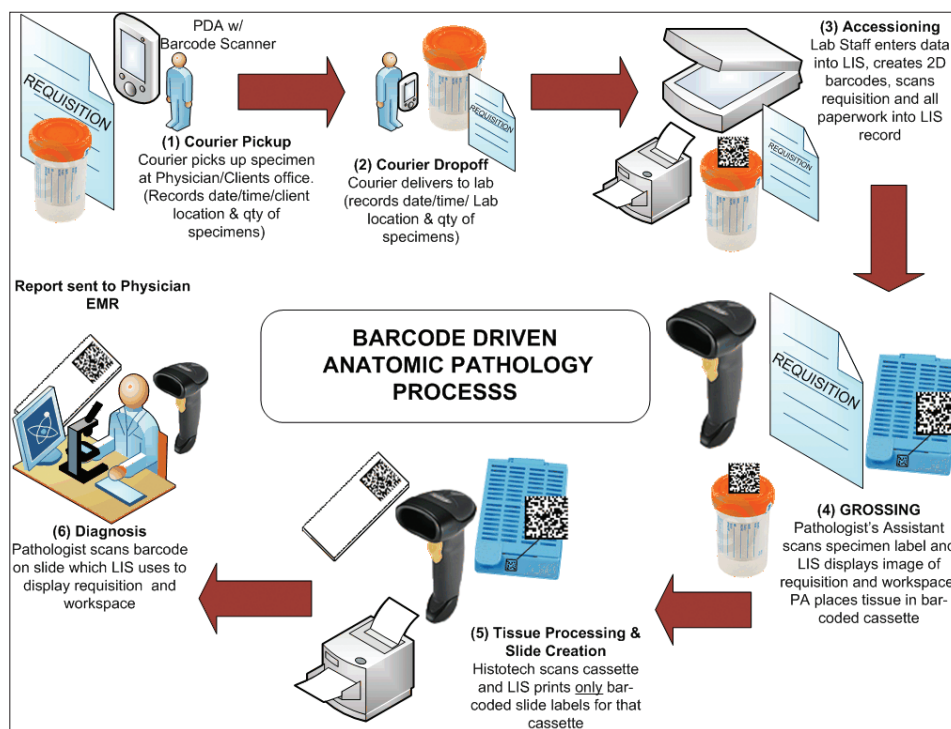
Pathologists receiving the slide trays no longer have stacks of paper work accompanying the slides. They scan a slide from the case and the LIS displays the image of the requisition (and any other accompanying paper work) on one half of the work screen with the pathologist report template on the other half. It speeds the process and reduces the opportunity for error.

Patients are not the only beneficiaries of quality improvement. Cell-Netix has seen its malpractice rates drop 5-10% because our insurer recognizes the improved quality. David B. Troxel M.D., Medical Director of The Doctors Company, reports that from 1995 through 2003, of 722 reviewed pathology claims across all its insured clients, 70% showed repetitive patterns suggestive of systematic errors. Of claims, 65% centered on certain high-risk diagnostic challenges in breast, melanoma, lymphoma and system errors.<sup>3</sup> Active efforts to identify and eliminate systematic errors and provide sub-specialty support in these areas make a difference. Combining the anatomic pathology and cytology work volumes from multiple hospitals and communities has allowed us to perform more

esoteric testing in a centralized laboratory where we control the turnaround time, methods, and qualifications of those performing the work. A large immunohistochemistry (IHC) menu, flow cytometry, molecular diagnostics and fluorescent in situ hybridization (FISH) capability reduces turnaround time and provides faster diagnoses to our clients, shorter hospital stays and more rapid treatments. Hospital clients have realized reduced costs for technical services and improved satisfaction of their surgeons and oncologists. Shorter length of stays result in cost savings for hospitals.

to our physician colleagues. Primary responsibility for recognition, funding and early adoption of innovative patient care improvements continues to rest with physicians and administrators responsible for the departments and services they provide. The tools and resources are available to dramatically reduce error in anatomic pathology while staying abreast of rapidly changing diagnostic approaches in the medical world. Professional leadership demands early, voluntary adoption of new tools to improve patient care without waiting for regulatory demands.

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References:

1. Forsman RW, Why is the laboratory an after thought for managed care organizations? Clinical Chemistry. May 1996;42:813-6.
2. Zarbo RJ, Tuthill JM, D'Angelo R, Varney R, Mahar B, Neuman C, Ormsby A. Reduction of Surgical Pathology In-Process Misidentification Defects by Bar Code-Specified Work Process Standardization. American Journal of Clinical Pathology. 2009 131:468-477.
3. Troxel DB, Error in Surgical Pathology: A Malpractice Insurer's Perspective. Presentation Nov. 7, 2007.

Reviewing practices across multiple institutions has allowed us to identify and adopt best practices. Standardizing our procedures reduces errors and makes us more efficient. Regular review of utilization reduces cost and improves the speed of reporting final diagnoses

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