Patient Safety and Quality as Strategic Imperatives in Surgical Pathology

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No Relationships To Disclose

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Ethics?

*a branch of philosophy which seeks to address questions about morality; that is, about concepts like good and bad, right and wrong, justice, virtue, etc.*

www.wikipedia.org 16JAN10
Patient Safety and Quality as Strategic Imperatives in Surgical Pathology

Ethics?

knowing the difference between right and wrong and choosing to do what is right

http://business.lovetoknow.com/wiki/A_Definition_for_Business_Ethics

16JAN10
As a result of this presentation, participants who were paying attention will be able to:

- list metrics commonly used to assess safety and quality in surgical pathology,
- identify risks in their own practice, and
- list specific solutions for common challenges in safety and quality in surgical pathology.
Report of the Institute of Medicine (IOM) Committee on Quality of Health Care in America
November, 1999
“The goal of this report is to break the cycle of inaction. . . . Despite the cost pressures, liability constraints, resistance to change and other seemingly insurmountable barriers, it is simply not acceptable for patients to be harmed by the same health care system that is supposed to offer healing and comfort.”
To Err Is Human: Building a Safer Health System

The Problem?

- Betsy Lehman, health reporter for *Boston Globe*, died from overdose during chemotherapy
To Err Is Human: Building a Safer Health System

The Problem?

- Betsy Lehman, health reporter for *Boston Globe*, died from overdose during chemotherapy

- Willie King had the wrong leg amputated
Betsy Lehman, health reporter for *Boston Globe*, died from overdose during chemotherapy.

Willie King had the wrong leg amputated.

Ben Kolb, an 8-year-old, died from a medication error during “minor” surgery.
To Err Is Human: Building a Safer Health System

The Problem?

- 44,000 to 98,000 Americans die each year as a result of medical errors
• 44,000 to 98,000 Americans die each year as a result of medical errors

• medical errors exceed the number of deaths attributable to the 8th-leading cause of death
  – more than motor vehicle accidents (43,458), breast cancer (42,297), or AIDS (16,516)
To Err Is Human: Building a Safer Health System

The Problem?

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• total national costs = $17-$29 billion annually
but is surgical pathology a problem?
Five Chilling Real-Life Stories

“the surgeon called Kastrup into her office and confessed that the lymph nodes had never made it to the lab”
Family Sues Hospital That Lost Tumor Before Biopsy

CHICAGO (STNG) — A north suburban family says they will never know for certain if a tumor removed from a young woman two years ago was cancerous, since Children’s Memorial Hospital lost the tumor.

A negligence lawsuit filed this week in Cook County Circuit Court on behalf of Kara Morris of Highland Park says after having surgery in October of 2006 to remove a tumor encased in her thyroid, Children’s lost the tumor before performing a biopsy to determine if it was cancerous.

Kara was 16 years old at the time of the surgery, according to a release from the law firm of Levin and Perconti, which filed the lawsuit. A week after the surgery, when Kara and her family returned to the hospital to receive the biopsy results, the hospital told them that because they lost the sample, no biopsy could be performed and no determination could be made as to whether or not it was cancerous.

“We were in shock,” Kara’s mother, Charlene, said. “We could not believe that the hospital we trusted to care for our daughter lost the tumor removed from her body. The tumor held all of our answers, and without it, we will never know whether she has cancer. We brought this case against Children’s Memorial so that other families do not have to go through what we are facing.”

“A week after the surgery, when Kara and her family returned to the hospital to receive the biopsy results, the hospital told them that because they lost the sample, no biopsy could be performed and no determination could be made as to whether or not it was cancerous.”
“... the sample her diagnosis was based on had been contaminated with cancerous cells from another patient’s specimen”
U-M lab cancer mistake verdict upheld

Samples mislabeled; woman did not have breast cancer

BY AMY WHITESALL
News Staff Reporter

In 2003, a laboratory mix-up at the University of Michigan Hospitals caused Theresa Karwoski’s doctor to incorrectly diagnose her with breast cancer.

Karwoski went through a partial mastectomy, removal of seven lymph nodes, drugs and testing to fight a cancer she didn’t have.

In February, a jury awarded the 51-year-old Ann Arbor woman and her husband more than $3 million in damages in a lawsuit filed against the medical center. The verdict was upheld in the court of appeals by Washtenaw Circuit Judge Timothy P. Connors, who late last month ordered U-M to pay the Karwoskis’ attorney’s fees and interest.

$3 million in damages . . . attorney’s fees and interest.”

The next month, Dr. Alfred Chang, U-M surgical oncology chief, removed seven lymph nodes and took tissue from the breast and the area around the lymph nodes, Garris said. When the pathology report on the tissue that was removed failed to show any cancer Karwoski went through nuclear medicine and radiological tests to look for the cancer.

Karwoski pushed for answers, and in July 2003 UMHS cytopathology director Dr. Claire Michael discovered the labeling mistake, Garris said.

Today, because of the surgery, Karwoski has a permanent condition called lymphedema, a swelling of her left arm and chest that requires physical therapy and periodic draining of fluid, Garris said.

The attorney said Karwoski ended up losing her job and sued U-M for both malpractice and negligence, he said.

“(Karwoski) didn’t want to go through a trial,” Garris said. “That was very traumatic to her, but she felt the jury paid great attention throughout the trial and made a just decision.”

“From the start we acknowledged our error to Ms. Karwoski and apologized sincerely for it,” Michels said. “This error has never occurred before, and we took extraordinary measures to ensure it never would again.”

In April 2003, Karwoski went through a procedure to have fluid and cells drawn from her left breast and submitted for testing because of a thickening in that breast. But, according to Garris, the lab clerk processing the sample put the wrong number on the slide, and Karwoski’s sample was mixed up with that of a male patient who did have cancer. It is unclear what happened to that patient.
and safety is not the only problem!
Patient safety was the tip of the iceberg . . .

This is the rest of the iceberg.”

William Richardson, Chair
“Between the health care we have and the care we could have lies not just a gap, but a chasm. . . . As the patient safety report was a call for action to make care safer, this report is a call for action to improve the American health care delivery system as a whole, in all its quality dimensions, for all Americans.”
“If we want safer, higher-quality care, we will need to have redesigned systems of care, including the use of information technology to support clinical and administrative processes.”
Institute of Medicine (IOM)
Quality of Health Care in America Committee

**Types of Error**

**active** errors — occur at the level of the frontline operator

modified from Woods *et al.* *Behind Human Error: Cognitive Systems, Computers and Hindsight.* Crew Systems Ergonomic Information and Analysis Center, WPAFB, Dayton, OH.
Types of Error

**active** errors — occur at the level of the frontline operator

**latent** errors — tend to be removed from the direct control of the operator (*e.g.* poor design, poorly structured organizations, etc.)
Institute of Medicine (IOM)
Quality of Health Care in America Committee

Types of Error

**active** errors — occur at the level of the frontline operator

**latent** errors — tend to be removed from direct control of the operator (e.g. poor design, poorly structured organizations, etc.)

the “blunt end” of complex health care system

modified from Woods *et al.* *Behind Human Error: Cognitive Systems, Computers and Hindsight.* Crew Systems Ergonomic Information and Analysis Center, WPAFB, Dayton, OH.
Errors in Medicine
Application to Surgical Pathology*

Diagnostic
✓ Error or delay in diagnosis
✓ Failure to employ indicated tests
✓ Use of outmoded tests or therapy
✓ Failure to act on results of monitoring or testing

Treatment

Preventive

Other
✓ Failure of communication

Every system is perfectly designed to achieve exactly the results it gets.

Don Berwick’s “Central Law of Improvement”
pre-analytical

- acquisition
- transportation
- receiving
- accessioning
- grossing
- embedding
- cutting
- processing
- embedding
- case assembly
- staining

analytical

- microscopy
- report generation

post-analytical

- report delivery
- clinical decision/action
Error
preventable misdiagnosis
that results, or has the potential to result, in patient harm
## Errors in Surgical Pathology

**Troxel Am J Surg Pathol 2004***

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>&quot;operational errors&quot;</td>
<td>4 (1.8%)</td>
<td>22 (8%)</td>
</tr>
<tr>
<td>specimen/patient misidentification</td>
<td>4</td>
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</table>

*data based on pathology claims reported to The Doctors Company, physician-owned professional liability insurance company (Napa, CA)*
pre-analytical

acquisition

transportation

receiving

accessioning

pre-analytical phase errors
Error Rates in Surgical Pathology
Specimen Identification and Accessioning Defects*

1993

417 participants (393 USA)
surgical tissue cases

4,000 sequential accessions
all cases received in 4 months
400 deficiencies

Error Rates in Surgical Pathology
Specimen Identification and Accessioning Defects*

60,042 (6.0%) deficiencies

Error Rates in Surgical Pathology
Specimen Information Defects*

![Error Rate Graph](image)

52,607 specimen information defects

Error Rates in Surgical Pathology
Specimen Identification Defects*

6,577 ID defects in 4,827 specimens

Error Rates in Surgical Pathology
Surgical Specimen Identification Errors*

• prospective cohort study (Johns Hopkins)

• outpatient clinic + hospital ORs

• all patients for whom surgical specimen was sent to pathology (OCT04-APR05)

• **ID error** = specimen requisition and specimen label mismatch

*from Makary et al. Surgery 2007; 141: 450-5.
## Error Rates in Surgical Pathology

**Surgical Specimen Identification Errors**

*from Makary et al. Surgery 2007; 141: 450-5.*

### 91/21,351 specimens with ID error (rate = 4.3/1,000)

<table>
<thead>
<tr>
<th></th>
<th>Events</th>
<th>% of specimens</th>
<th>Rate (per 1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR specimens</td>
<td>38</td>
<td>0.4%</td>
<td>3.7</td>
</tr>
<tr>
<td>(10,354)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic specimens</td>
<td>53</td>
<td>0.5%</td>
<td>4.8</td>
</tr>
<tr>
<td>(10,997)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Error Rates in Surgical Pathology
Surgical Specimen Identification Errors*

*from Makary et al. Surgery 2007; 141: 450-5.
## Error Rates in Surgical Pathology
### Surgical Specimen Identification Errors*

<table>
<thead>
<tr>
<th>Error type</th>
<th>Clinic</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events (%)</td>
<td>Rate (/1000)</td>
</tr>
<tr>
<td>Not labeled</td>
<td>6 (11.3)</td>
<td>0.55</td>
</tr>
<tr>
<td>Empty container</td>
<td>11 (20.8)</td>
<td>1.00</td>
</tr>
<tr>
<td>Incorrect laterality</td>
<td>11 (20.8)</td>
<td>1.00</td>
</tr>
<tr>
<td>Incorrect site</td>
<td>9 (17.0)</td>
<td>0.82</td>
</tr>
<tr>
<td>Incorrect patient</td>
<td>7 (13.2)</td>
<td>0.64</td>
</tr>
<tr>
<td>No patient name</td>
<td>3 (5.7)</td>
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## Error Rates in Surgical Pathology

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<td>6 (11.3)</td>
<td>0.55</td>
<td>12 (31.6)</td>
<td>1.16</td>
</tr>
<tr>
<td>Empty container</td>
<td>11 (20.8)</td>
<td>1.00</td>
<td>5 (13.2)</td>
<td>0.48</td>
</tr>
<tr>
<td>Incorrect laterality</td>
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<td>0.48</td>
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<td>0.64</td>
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<td>0.38</td>
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<tr>
<td>No patient name</td>
<td>3 (5.7)</td>
<td>0.27</td>
<td>6 (15.8)</td>
<td>0.58</td>
</tr>
<tr>
<td>No tissue site</td>
<td>6 (11.3)</td>
<td>0.55</td>
<td>1 (2.6)</td>
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#### Surgical Specimen Identification Errors*

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As a result of this presentation, participants who were paying attention will be able to:

- list metrics commonly used to assess safety and quality in surgical pathology,
- identify risks in their own practice, and
- list specific solutions for common challenges in safety and quality in surgical pathology.
Factors Associated with High Performance in Quality and Safety in Academic Medical Centers

†Keroack et al. Acad Med 2007; 82: 1178
Factors Associated with High Performance in Quality and Safety in Academic Medical Centers†

- leaders articulate that patient care comes first
- leaders are dissatisfied with the current state of quality & safety

- **service excellence** is added to the focus on quality & safety
- service, quality, & safety are seen as a source of competitive advantage

†Keroack et al. Acad Med 2007; 82: 1178
“Leaders used a focus on service excellence to unify their institutions behind the patients first mission.”

“Leaders either found this patients first point of view not to be in conflict with excellence in other missions or expressed the opinion that the enterprise had achieved a balance among the missions.”

†Keroack et al. Acad Med 2007; 82: 1178
Factors Associated with High Performance in Quality and Safety in Academic Medical Centers†

“comparison institutions experienced unresolved conflicts among the missions of patient care, teaching, and research.”

“Leaders at the comparison sites were typically satisfied with the current state of quality and safety . . . in spite of signals from more detailed data sources that quality or safety problems persisted.”

†Keroack et al. Acad Med 2007; 82: 1178
**Designing for Safety in Surgical Pathology**

**Countermeasures for Pre-Analytical Errors**

<table>
<thead>
<tr>
<th>associated with lower rates of defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower numbers (&lt;15,000) of accessioned cases</td>
</tr>
<tr>
<td><strong>formal plan for error detection</strong> in specimen identification and accessioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>associated with higher rates of defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>specimen &amp; requisition in unique second container</td>
</tr>
<tr>
<td>specimen container labeled with only 1 identifier</td>
</tr>
</tbody>
</table>

*from Nakhleh et al. Arch Pathol Lab Med 1996; 120: 227-33.*
Designing for Safety in Surgical Pathology
Countermeasures for Pre-Analytical Errors

The Henry Ford Production System
Measures of Process Defects and Waste in Surgical Pathology as a Basis for Quality Improvement Initiatives


Visual data display poster showing data entries by pathologists that captured detail on misidentifications arising in the surgical pathology process.
Designing for Safety in Surgical Pathology
Countermeasures for Pre-Analytical Errors

computer-assisted bar-coding/RFID

Figure 2. Frequency of mislabeled specimens, September 2003 to August 2006.

Designing for Safety in Surgical Pathology
Countermeasures for Pre-Analytical Errors

computer-assisted bar-coding/RFID

Designing for Safety in Surgical Pathology
Countermeasures for Pre-Analytical Errors

- formal written plan for error detection and problem resolution
- application of Lean principles and tools
- provider order entry
- electronic positive patient identification
- software solutions that maintain fidelity of patient ID across key handoffs
surgical pathology is a team activity!
Error Rates in Surgical Pathology
Amended Reports as a Measure of Diagnostic Error*

Amended Report Frequency (per 1,000 cases) by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.8</td>
<td>2.6</td>
<td>3.4</td>
<td>4.8</td>
</tr>
</tbody>
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*from Meier et al. Am J Clin Pathol 2008; 130: 238-46
### Errors in Surgical Pathology

**Troxe Am J Surg Pathol 2004**

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<td>3</td>
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<td>3</td>
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*Data based on pathology claims reported to The Doctors Company, physician-owned professional liability insurance company (Napa, CA)*
Extraneous Tissues ("floaters")

Medical Errors – “Very Important” Causes

- insufficient time spent with patients
  - MDs: 37%
  - Public: 72%

- overwork, stress, fatigue
  - MDs: 50%
  - Public: 70%

- failure to work together or communicate as team
  - MDs: 39%
  - Public: 67%

- understaffing of nurses
  - MDs: 53%
  - Public: 65%

- complexity of care
  - MDs: 38%
  - Public: 62%
Donor Mix-Up Leaves Girl, 17, Fighting for Life

ABSTRACT - Jessica Santillan, 17, is in critical condition on life support at Duke University Hospital after mistakenly being given heart and lung transplant from donor with incompatible bloodtype; her body rejected organs and doctors see little chance of survival without another transplant, which is unlikely given shortage of organs; Duke accepts responsibility for tragic error in giving organs from donor with Type A blood to Santillan, who has Type O; will now require additional checking of blood types; Santillan family moved from Mexico three years ago in hopes of treatment for girl's cardiomyopathy.

by Denise Grady
“In Jessica’s case, the cause of death was the single most common error cited in high-risk professions from aviation to medicine: the failure to share key pieces of communication.”
“This is what Carolyn Clancy, the new director of the Agency for Healthcare Research and Quality . . . thinks of every morning when she gets her coffee. ‘It occurs to me that there’s more double checking and systematic avoidance of mistakes at Starbucks than at most health care institutions.”"
## Designing for Safety in Health Care

### AHRQ Survey on Patient Safety Culture: 2008 Report

**Patient Safety Culture Composites**

<table>
<thead>
<tr>
<th>Composites</th>
<th>Average % Positive Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teamwork Within Units</td>
<td>79%</td>
</tr>
<tr>
<td>2. Supervisor/Manager Expectations &amp; Actions Promoting Patient Safety</td>
<td>75%</td>
</tr>
<tr>
<td>3. Management Support for Patient Safety</td>
<td></td>
</tr>
<tr>
<td>4. Organizational Learning–Continuous Improvement</td>
<td></td>
</tr>
<tr>
<td>5. Overall Perceptions of Patient Safety</td>
<td></td>
</tr>
<tr>
<td>6. Feedback &amp; Communication About Error</td>
<td></td>
</tr>
<tr>
<td>7. Communication Openness</td>
<td></td>
</tr>
<tr>
<td>8. Frequency of Events Reported</td>
<td></td>
</tr>
<tr>
<td>9. Teamwork Across Units</td>
<td></td>
</tr>
<tr>
<td>10. Staffing</td>
<td></td>
</tr>
<tr>
<td>11. Handoffs &amp; Transitions</td>
<td></td>
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<tr>
<td>12. Nonpunitive Response to Error</td>
<td></td>
</tr>
</tbody>
</table>

**AP Service Teams Calendar**

**April 2008**

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td></td>
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<td></td>
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</table>

*web-based service team calendars*
Designing for Safety in Health Care

Staff are afraid to ask questions when something does not seem right.

Staff feel free to question the decisions or actions of those with more authority.

Staff will freely speak up if they see something that may negatively affect patient care.
Staff feel like their mistakes are held against them.

When an event is reported, it feels like the person is being written up, not the problem.

Staff worry that mistakes they make are kept in their personnel file.
Error Rates in Surgical Pathology
Diagnostic Disagreement as a Measure of Error

Prospective/Blinded Re-Review
(Significant errors – 0.3%-1.2%)

<table>
<thead>
<tr>
<th>Study</th>
<th>Total disagreements</th>
<th>Significant errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehead et al 1984</td>
<td>1.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Safrin and Bark 1993</td>
<td>0.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Lind et al. 1995</td>
<td>1.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Weydert et al 2005</td>
<td>0.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Renshaw and Gould 2006</td>
<td>0.8%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
Error Rates in Surgical Pathology
Diagnostic Disagreement as a Measure of Error

Interinstitutional Re-Review ("consults")
(Significant errors – 1.4%-5.8%)

- Total disagreements
- Significant errors

Abt et al 1995: 5.8%
Kronz et al 1999: 1.4%
Weir et al 2003: 3.7%
Tsung 2004: 3.8%
Error Rates in Surgical Pathology
Diagnostic Disagreement as a Measure of Error

Retrospective Re-Review
(Significant errors – 0.4%-3.2%)

- Total disagreements
- Significant errors

5% random review

Whitehead et al 1986
Ramsay et al 1992
Raab et al 2005
Raab et al 2008
Raab et al 2008

Focused subspecialty based review

1.2%
3.2%
0.4%
1.0%
2.1%
0.0%
4.0%
8.0%
12.0%
Error Rates in Surgical Pathology
Measuring Frequency of Diagnostic Discordance

Renshaw & Gould.
Am J Clin Pathol 2005

Raab et al.
Arch Pathol Lab Med 2005
Error Rates in Anatomic Pathology

- Patient and/or clinician generated (18): 33%
  - No. of Errors: 2
  - No. with follow-up: 6

- Pathologist generated (55): 57%
  - No. of Errors: 8
  - No. with follow-up: 14

- Incoming (35): 79%
  - No. of Errors: 15
  - No. with follow-up: 19
“. . . diagnostic disagreement is not the same as error.”

Designing for Safety in Surgical Pathology
Countermeasures for Analytical Errors

Anticipate the predictable

Designing for Safety in Surgical Pathology
Countermeasures for Analytical Errors

Measure real-time diagnostic trends*

*data idealized and not drawn from actual cases or pathologists
Designing for Safety in Surgical Pathology
Countermeasures for Analytical Errors

- formal written plan for error detection and problem resolution
- application of Lean principles and tools
- electronic positive patient identification at multiple fiduciary tracking points
- aspire to a culture of safety communication across authority gradients error reporting
Designing for Safety in Surgical Pathology
Countermeasures for Analytical Errors

• forced functions predicated on specific QA initiatives (selected prospective re-review)
• real-time monitoring of diagnostic trends
• delivery of “just-in-time” case specific content
• commitment to service
## Customer Satisfaction in AP

### Median for Excellent/Good Ratings for Each Service Category

<table>
<thead>
<tr>
<th>Service Category</th>
<th>50th percentile (median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of professional interaction</td>
<td>96.3</td>
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<td>Notification of significant abnormal results</td>
<td>86.3</td>
</tr>
<tr>
<td>Timeliness of reporting</td>
<td>79.8</td>
</tr>
</tbody>
</table>
post-analytical phase errors

report delivery

post-analytical

clinical decision/action
“Contrary to our original hypothesis, our modified anatomic pathology report formats reduced comprehension when compared to our hospital system’s standard report.

... The problem of report comprehension warrants exploration.”
Pathology Reports as Communication Tools

6 reports/3 formats questionnaire (each case) (yes, no, not stated)

Fig 1. Original report format.

YALE - NEW HAVEN HOSPITAL
ANATOMIC PATHOLOGY REPORT

Patient: ___________________________ Service: UROLOGY DEPT (YNHH)
Hospital # 1234567 Path # S94-12345
Birthdate: 02/08/28 (Age: 66) Physician: 
Sex: M Accessioned on 08/30/94 UROLOGY 321 YPB
Reported on 09/01/94

Clinical Diagnosis and History:
CLINICAL IMPRESSION: PATIENT WITH BLADDER TUMOR AND PROSTATIC NODULE.

Tissue Source:
Part 1: TUR TUMOR TRIGONE BLADDER
Part 2: TUR BASE BLADDER
Part 3: BIOPSY LEFT BASE PROSTATE ...

DIAGNOSIS: __________________________________________________
1) BLADDER, TRIGONE, TRANURETHRAL RESECTION:
   - TRANSITIONAL CELL CARCINOMA, MODERATELY TO POORLY DIFFERENTIATED, GRADE III/IV
   - THE PATTERN OF GROWTH IS NODULAR AND PAPILLARY ...
2) BLADDER, BASE, TRANURETHRAL RESECTION:
   - TRANSITIONAL CELL CARCINOMA, POORLY DIFFERENTIATED, GRADE IV/IV ...

Fig 2. New report format.

YALE PATHOLOGY DEPARTMENT
ANATOMIC PATHOLOGY REPORT

Patient: ___________________________ Service: UROLOGY DEPT (YNHH)
Hospital # 1234567 Path # S94-12345
Birthdate: 02/08/28 (Age: 66) Physician: 
Sex: M Accessioned on 08/30/94 UROLOGY 321 YPB
Reported on 09/01/94

Diagnosis:
1) Bladder, Trigone, Transurethral Resection:
   - Transitional Cell Carcinoma, Moderately To Poorly Differentiated, Grade III/IV
   - The Pattern Of Growth Is Nodular And Papillary ...
2) Bladder, Base, Transurethral Resection:
   - Transitional Cell Carcinoma, Poorly Differentiated, Grade IV/IV ...

Fig 3. Modernized report format.

Fig 1. Original report format.

Fig 2. New report format.

Fig 3. Modernized report format.
### Discordance Rates (%) by Report Format and Clinical Experience

<table>
<thead>
<tr>
<th></th>
<th>Original</th>
<th>Modernized</th>
<th>New</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending (n=15)</td>
<td>18</td>
<td>24</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>Housestaff (n=11)</td>
<td>26</td>
<td>32</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>Student (n=9)</td>
<td>33</td>
<td>28</td>
<td>48</td>
<td>37</td>
</tr>
<tr>
<td>All (n=34)</td>
<td>24</td>
<td>28</td>
<td>37</td>
<td>30</td>
</tr>
</tbody>
</table>
“Unfortunately, we found no reliable correlation between discordance and uncertainty.”
• diagnostic headlines to emphasize key points
• maintenance of layout continuity
• optimized information density
• reduction of “clutter”
• minimize corruption of formatting with report transmission
Pathology Reports as Communication Tools
Valenstein P. Arch Pathol Lab Med 2008; 132: 84

A

A. PROSTATE, RIGHT BASE: ATROPHY AND CHRONIC INFLAMMATION. NO NEOPLASM IDENTIFIED.
B. PROSTATE, RIGHT MID: ACUTE AND CHRONIC INFLAMMATION. NO NEOPLASM IDENTIFIED.
C. PROSTATE, RIGHT APEX: ATROPHY. NO NEOPLASM IDENTIFIED.
D. PROSTATE, LEFT BASE: ADENOCARCINOMA, CONVENTIONAL TYPE, GLEASON 3+4=7, SIZE = 7 MM, PERINEURAL INVASION PRESENT.
E. PROSTATE, LEFT MID: SINGLE FOCUS OF ADENOCARCINOMA, CONVENTIONAL TYPE, GLEASON 3+3=6, SIZE = 2 MM.
F. PROSTATE, LEFT APEX: ATROPHY AND CHRONIC INFLAMMATION. NO NEOPLASM IDENTIFIED.

B

PROSTATE: ADENOCARCINOMA

Malignant locations: left base, left mid
Benign locations: left apex, right base, right mid, right apex
Gleason score: 3 + 4 = 7
Size: 7 mm (left base); 2 of 6 cores contain carcinoma
Histologic type: conventional prostatic adenocarcinoma
Perineural invasion is present

A

ENDOMETRIUM: WELL DIFFERENTIATED ENDOMETRIOID ADENOCARCINOMA (FIGO 1), ARISING IN A BACKGROUND OF ATYPICAL HYPERPLASIA. ENDOCEVIX FREE.

B

ENDOMETRIUM: ENDOMETRIOID ADENOCARCINOMA (FIGO G1).

Atypical hyperplasia is present.
Endocervix not involved.

C

ENDOMETRIUM: ADENOCARCINOMA.

Histologic type: Endometrioid
Histologic grade: Well differentiated (FIGO 1)
Non-malignant endometrium: Atypical hyperplasia
Endocervix: Not involved

D

ENDOMETRIUM: CANCER.

Cancer type: Adenocarcinoma
Histologic subtype: Endometrioid
Histologic grade: Well differentiated (FIGO 1)
Non-malignant endometrium: Atypical hyperplasia
Endocervix: Not involved

use of “diagnostic headline”

variation in information density
Designing for Safety in Surgical Pathology
Countermeasures for Post-Analytical Errors

• simplify and standardize reports, designed in collaboration with end users
### Customer Satisfaction in AP


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Communicating ("Critical") Diagnoses

<table>
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<tr>
<th>% of Respondents (n=73)*</th>
<th>Routine report delivery</th>
<th>Phone call within 24 hrs</th>
<th>Phone call ASAP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vasculitis</strong></td>
<td>14%</td>
<td>31%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Neoplasms causing paralysis</strong></td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>New diagnosis of malignancy, with clinical suspicion</strong></td>
<td>62%</td>
<td>28%</td>
<td>10%</td>
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“In today’s fractured patient care settings, with offsite pathology laboratories and specialized surgery centers, communication becomes an increasingly complex problem . . .

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If our diagnosis fails to reach the appropriate medical provider, or the patient for that matter, should we agree that a routine but ‘missed’ cancer diagnosis (ie, one that is not acted upon because our report did not find the appropriate physician) becomes a critical value at some point in time?”

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Designing for Safety in Surgical Pathology
Countermeasures for Post-Analytical Errors

- simplify and standardize reports, designed in collaboration with end users
- critical values alerts policy
Patient Safety and Quality as Strategic Imperatives in Surgical Pathology

As a result of this presentation, participants who were paying attention will be able to:

- list metrics commonly used to assess safety and quality in surgical pathology,
- identify risks in their own practice, and
- list specific solutions for common challenges in safety and quality in surgical pathology.
THANK YOU!