HEALTHCARE INFORMATICS

Top Tend IT Trends: Their Relevance for Pathology and Clinical Labs

ROBERT L. MICHEL
Editor In Chief

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rmichel@darkreport.com
ph: 512-264-7103
fax: 512-264-0969
My Goals Today!

- **One**: Institute of Medicine’s new report on healthcare informatics and continuous improvement.

- **Two**: Look at “Top Ten Health IT Trends.”

- **Three**: Explore ways to leverage lab testing services:
  - To continuously improve patient outcomes.
  - To contribute to reduction in overall cost per healthcare encounter.
Best Care at Lower Cost
The Path to Continuously Learning Health Care in America
Remember?

- *To Err is Human*, 1999.
- *Crossing the Quality Chasm*, 2000.
- IOM Reports can be seminal documents.
- IOM Reports often early to articulate trends.
- Designed to inform policymakers.
IOM’s Views

- “Americans would be better served by a more nimble healthcare system that is consistently reliable and that constantly, systematically, and seamlessly improves.”

- “In short, the country needs healthcare that learns by avoiding past mistakes and adopting newfound successes.”
$2.2 Trillion Health System

- “By one estimate, almost 75,000 needless deaths could have been averted in 2005 if every state had delivered care on par with the best performing state.”

- “Current waste diverts resources; the committee estimates $750 billion in unnecessary health spending in 2009 alone.”
Business Intelligence

- IOM says:
  - “Decision support tools and knowledge management systems can be included routinely in health care delivery to ensure that decisions are informed by the best evidence.”
Role of Business Intelligence

- Health care delivery organizations should develop organizational cultures that encourage continuous improvement by incorporating:
  - best practices, transparency, open communication,
  - staff empowerment, coordination, teamwork, and mutual respect, and,
  - align incentives accordingly.
Clinicians and patients should have real-time access to medical records and use technology to streamline administrative tasks.

**IN HEALTH CARE...**

- 20% of patients reported that test results or medical records were not transferred from one place to another in time for an appointment.
- 25% of patients said their healthcare provider has had to re-order tests to have accurate information for diagnosis.

**IN OTHER INDUSTRIES...**

**ONLINE BANKING** allows customers to view their entire financial history and conduct transactions in seconds.
CREATE SYSTEMS TO MANAGE COMPLEXITY

Prompts, technologies, and delivery systems should help clinicians manage the growing complexity of medical knowledge and care required.

IN HEALTH CARE...

- 229 OTHER DOCTORS
- 180 ACTIVITIES

are involved in treating the average primary care physician’s Medicare patients.

are managed by clinicians in intensive care units, per patient, per day.

IN OTHER INDUSTRIES...

MANUFACTURERS
manage and track an increasingly complex network of suppliers to meet constantly changing demand.
MAKE HEALTH CARE SAFER

Hospitals and providers should constantly assess performance and learn from experience to reduce errors and harm.

IN HEALTH CARE...

1/3 of hospitalized patients are harmed during their stay.

1/5 of Medicare patients are re-hospitalized within 30 days.

IN OTHER INDUSTRIES...

THE AVIATION INDUSTRY learns from past performance and adjusts operations to ensure safe flights.
IMPROVE TRANSPARENCY

Patients and clinicians should have easy access to the prices of tests and procedures and to reliable information about care outcomes and quality.

IN HEALTH CARE...

- 63% of patients don’t know how much their care costs until they receive a bill.
- 10% of patients never find out the cost of their care.

IN OTHER INDUSTRIES...

Before shopping for an appliance or booking a hotel, consumers can compare prices and look at reviews of performance.
PROMOTE TEAMWORK AND COMMUNICATION

Clinicians and hospital staff should communicate to provide seamless, coordinated care within and across different care settings.

IN HEALTH CARE...

50% of adults report problems with care coordination, notification of test results, and communication among their doctors.

1/3 of adults say the health care system is poorly organized.

IN OTHER INDUSTRIES...

MISSION-CONTROL TEAMS work constantly and seamlessly to coordinate the multiple engineers, technicians, and others required for a successful launch and mission.
POTNER WITH PATIENTS

Clinicians should fully incorporate the needs and preferences of patients into care decisions.

IN HEALTH CARE...

LESS THAN HALF
of patients receive clear information on the benefits and trade-offs of treatments for their conditions.

LESS THAN HALF
of patients are satisfied with their level of control in medical decision making.

IN OTHER INDUSTRIES...

GENERAL CONTRACTORS
work with customers to build homes tailored to fit their needs and meet their specifications.
DECREASE WASTE AND INCREASE EFFICIENCY

Money should not be spent on unnecessary administration, inefficiencies, and care that doesn’t improve health.

IN HEALTH CARE...

1/3 of health care expenditures—an estimated $750 billion!—don’t improve health.

IN OTHER INDUSTRIES...

FACTORY ASSEMBLY LINES are continually monitored to improve quality, identify inefficiencies, and remove waste.
Add It Up!

- Institute of Medicine is telling providers that it is time to adopt modern management methods and tools.
- More use of informatics and real-time business intelligence to eliminate waste, add value.
- Mindset of continuous improvement.
- Clinical labs are complex organizations and will benefit from taking these steps.
Message for Labs

- Forces in play to influence providers to adopt continuous improvement.

- “Learning organization” means different management culture for hospitals and physicians.

- Both operationally and clinically, labs are better at using informatics and data.

- Clinical labs and pathology groups have opportunity to lead this trend.
“Top Ten Tech Trends”

- Healthcare Informatics’ annual tech trends issue.
- Presentation based on analysis of HI’s 2012 trends.
- Focus is heavily oriented toward hospitals, health systems, and office-based physicians.
PERFORMANCE IMPROVEMENT IMPERATIVES

- Lean, Six Sigma, similar process improvement methods.
- “...More patient care organization leaders now recognize that deep process change will be required to prepare their organizations for healthcare-reform related mandates.”
- Number one health technology trend!
Process Improvement Requires IT

- Hospitals and physicians need real-time flow of operational data.
- In labs, middleware solutions are appearing.
- Think “management dashboards.”
- Legacy health IT systems are poor at extracting and presenting such data.
Labs’ Role

“Continuously learning organization” requires real time data.

Clinical labs are data-rich.

However, lab information systems (LIS) lock data up—unreachable without lots of effort.

That’s challenge for clinical labs.

Lab Quality Confab, November 6-7 in San Antonio, Texas.
This is short-term goal aimed to move providers to preventative care.

Both Medicare and private payer programs already a reality.

“Reducing avoidable re-admissions has become one of the most pressing issues for hospitals as they look to become accountable care organizations (ACOs).”
For Hospital Labs

- Essential to immediately feed new lab test results into hospital’s EMR.

- Similarly, pathologists and lab scientists need real-time access to each patient’s full electronic medical record.

- Workflow dashboards that cross hospital’s service boundaries will become common.
For Pathology Groups

- ACOs will assemble hospitals, physicians, ancillary providers.
- Integration will occur to both clinical services and the “patient pathway.”
- Pathology groups need informatics strategy to support local hospitals and office-based physicians in same ACO.
PRIVATE HIES
ON THE UPSWING

- Driven by HI-TECH and ARRA laws.
- All players developing a comprehensive collection of health data sets.
- Hospitals and health systems want control of data.
- Meanwhile, don’t overlook private payers building their own comprehensive data bases.
Labs Need to Play in HIEs

- Doctors use HIEs to access lab test data.
- Issue of different test names reference ranges.
- Some HIEs can accommodate electronic orders for lab tests.
- LOINC has role within most HIEs.
TURNING HEALTHCARE’S BUSINESS MODEL INSIDE OUT

- Business and delivery models of healthcare are changing.
- This trend brings together hospitals, physicians and other providers.
- Need capability to analyze healthcare data, then guide the activities of clinicians.
- Think ACOs, medical homes, and similar.
ACO implementation accelerating across the country

Private Sector
★ = Private Sector ACO’s

Public Sector
= Beacon Communities
= PGP Transition, MHCQ
= Pioneer
= MSSP

*Upwards of 250 self-identified ACOs*

{Not exhaustive}
Medical Homes

- This model is intended to advance integrated care of the patient.
- Requires EHR and ability for electronic lab test data to move seamlessly among care team in all settings.
- Expected that medical homes physicians will utilize evidence-based medicine (EBM) guidelines more effectively.
- One goal of medical homes is to keep patients out of the hospital.
Consultants in Medical Oncology and Hematology (CMOH) in Philadelphia.

2005: 12% of chemo patients referred to emergency rooms.

By 2009, only 5% were referred.

Hospital admissions dropped:
- Down by 16% in 2009
- Another 10% in 2010.

Outcomes showed how fee-for-service payment doesn’t reward doctors for “prevention.”
The value proposition for the Primary Care Medical Home (PCMH)*

INTEGRATED DELIVERY SYSTEMS (for example)

- **Group Health Cooperative of Puget Sound**: 0.2% PMPM decrease for PCMH patients; **16% decrease in hospital admissions**.

- **Geisinger Health System PCMH model**: 7% PMPM decrease for PCMH patients; **18% decrease in hospital admissions**.

- **VA Midwest Healthcare Network (VISN 23)**: **27% decrease in hospital admissions**/Emergency Department visits.

- **HealthPartners Medical Group/BestCare PCMH Model**: 8% decrease in overall costs; **24% decrease in hospital admissions**; 24% decrease in Emergency Department visits.

- **Intermountain Healthcare Medical Group Care Management Plus PCMH Model**: **25% decrease in hospital admissions for diabetics**; $53 PMPM reduction

*Grumbach K, Grundy P; 11/16/2010; www.pcpcc.net/content/pcmh-outcome-evidence-quality*
BRIDGING THE CARE TRANSITION GAP

- Providers need to improve how they hand-off patients.
- IT collaboration tools emerging.
- Labs play integral role by allowing access to lab test data.
Care Coordination

- Health professionals will use information technology:
  - to help coordinate care teams;
  - to identify the responsibilities of providers;
  - to avoid duplication of care while backstopping providers to ensure that nothing needed by the patient is dropped or overlooked by a caregiver.
Use of targeted laboratory testing, including POCT, reduced cardiac readmission rates. **Mortality from CAD declined 73%**, number of patients meeting cholesterol goal went from 26% to 73%. 12,000 patients were enrolled in the Collaborative Cardiac Care Services (CCCS) program.
For Hospital Labs…

- Healthcare Informatics wrote:
  - “the hospital’s role as a ‘pay it forward’ dynamic of providing the information that the next provider of care needs, and what it can do to make that transfer of information successful.”

- Hospital labs already move lab test data to outreach clients.
PRIVACY AND SECURITY DURING THE YEAR OF THE CSIO

- Chief Information Security Officer (CISO).
- Release of final rules for HITECH Act for privacy and security.
- Breaches of certain Protected Information (PI) must be reported to feds and the media.
- More audits conducted by HHS office.
Challenge for Labs

- Use of unsecured mobile devices, like smartphones and iPads.
- More than 60% of respondents to one survey said their institutions increased the portion of the IT budget devoted to security.
- Physicians want to view lab test data on their mobile devices.
SECOND-GENERATION CLINICAL DECISION SUPPORT

- First generation CDS did not deliver.
- Second generation CDS will improve effectiveness.
- Need to avert alert fatigue
- Need to truly optimize workflow of physicians and other clinicians.
- Medicine now more complex, thus CDS is essential.
Molecular and genetic testing will bring its own need for clinical decision support.

Use of companion diagnostics to identify effective therapeutic drugs.

Evidenced-based medicine (EBM) guidelines that incorporate laboratory tests is a core competency of pathologists.
Hospitals are dealing with an explosion of digital images. Cuts across a variety of medical specialties. Physicians may need to access three or four different viewers to see images. Institutions outgrowing capabilities offered by PACS (picture archiving and communications system).
Issues for Digital Pathology

- Many electronic medical record (EMR) systems can’t handle the variety of image types that are produced by different medical specialties.

- According to HI, digital archiving solutions “must address the workflow and management issues that typically do not match up across departments.”

- Vendor neutral archive (VNA) systems have yet to gain favor with providers.
For Pathology Groups

- Confusion may be a benefit to anatomic pathology groups.

- Can acquire and use digital pathology systems during window of time before hospitals settle on universal solutions.

- Solutions to store/access multiple types and formats of digital images that are part of a single patient health record.
MOBILE HEALTH, OR BYOD—“BRING YOUR OWN DEVICE!”

- Rapid acceptance of mobile devices by physicians, nurses, other clinicians.
- Smartphone/tablet revolution because of its speed and scale.
- 75% of those surveyed said their organization allows clinicians to access clinical data via a mobile device.
- Only 38% have policy in place to regulate use of mobile devices and outlines a mobile strategy.”
Mobile Device Adoption

- Outruns ability of health CIOs to establish policies.

- Lacking robust support for the mobile devices used by their clinicians.

- One CIO declared,

  "If I told physicians they couldn’t bring their own mobile devices, I’d be shot."
Labs and Mobile Devices

- Both physicians and patients will readily access lab test results with mobile devices.
- Don’t forget opportunities to create useful mobile applications.
- Cloud and apps will disrupt traditional healthcare and laboratory informatics.
PERSONALIZED MEDICINE: THE GAME CHANGER

“the convergence of emerging genetic medicine and electronic health records” is a development that requires immediate attention by hospital and healthcare CIOs.

CIOs not ready for Personalized med

element in this advice and warning was the need for electronic medical record (EMR) systems to handle genetic data.
Don’t Overlook Genetic Info

“At this time, the electronic health record system has no fields ready to be populated by genetic data.”

As a workaround, Coriell and OSU put the genetic risk reports in PDF files.

These files then attached to patients’ records in the same fashion that imaging files are currently attached.
Tech Trends in 2009

- Clinical Transformation
- Doing more with Less
- Medical Device Integration
- Data Integrity
- Telemedicine
- Web 2.0 – Portals
- Business Intelligence
- Tracking Technologies
09 & 12 Tech Trends Differ

- Shows quick pace of transformation in U.S. healthcare systems.
- Clinical labs and pathology groups must have strategies and remain nimble.
- Disruption ahead for hospitals and physicians as healthcare integrates.
73% in solo or office-based settings (504,430 MDs)
Source: Center for Studying Health System Change (HSC)
Medical Practice Ownership in the USA

*Trend in Hospital Ownership of Medical Practices is Compelling* …..

These numbers date from 2008!

Source: MGMA Physician Compensation and Production Survey
Percentages of Active U.S. Primary Care Physicians (PCPs) and Specialist Physicians Employed by Hospitals, 2000–2012.

Personalized and Precision

- Use these terms to guide decisions about laboratory information technology.

- It is the lab test which informs physician as to patient’s unique health status.

- Making lab test data—and pathologists’ interpretations—available to all caregivers will be critical success factor.
New Opportunities

- Reimbursement shifting toward value- and outcomes-based models.
- That puts lab test data at ground zero in clinical decision-making.
- IT will be the tool that gives physicians real-time access to both lab test data and the pathologist expertise to interpret and apply that data.
Yes, It’s a Time of Change!

- Healthcare’s coming transformation will unfold a pace unseen by this country since World War II.
- Next cycle of change in healthcare is poised to fundamentally reshape the lab testing industry.

“Change Means Opportunity”

Disruption of status quo in lab marketplace creates the opportunity for nimble lab organizations to prosper in new ways!
Final Thoughts on Change…

“In a chronically leaking boat, energy devoted to changing vessels is more productive than energy devoted to patching leaks.”

–Warren Buffett

“You miss 100% of the shots you never take!”

–Wayne Gretzky