Mind the Gaps

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Gap #3:

Managing Test Results

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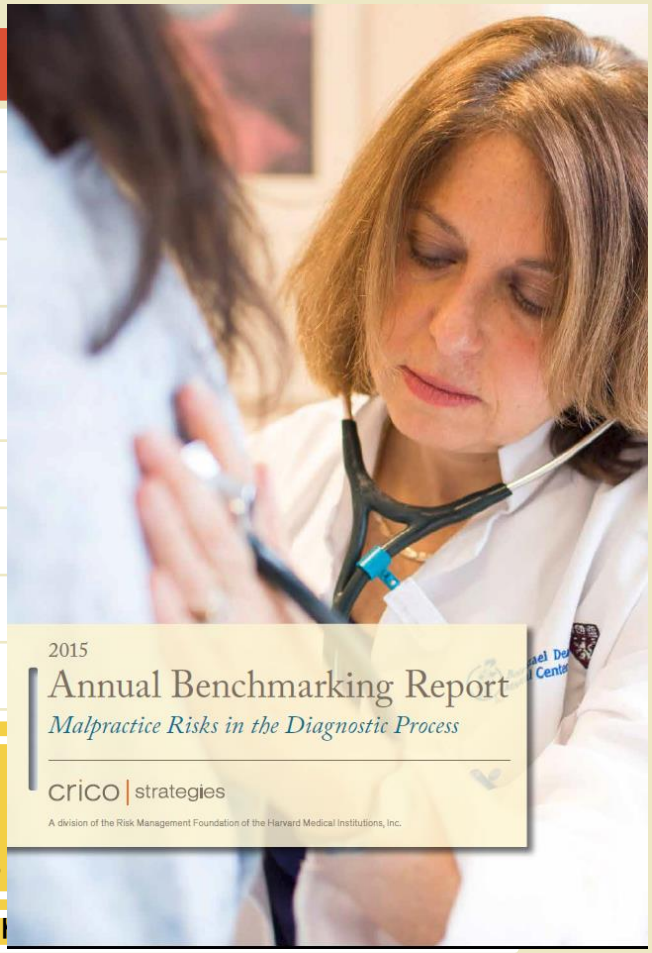
Communication gaps significantly impact the diagnostic process…

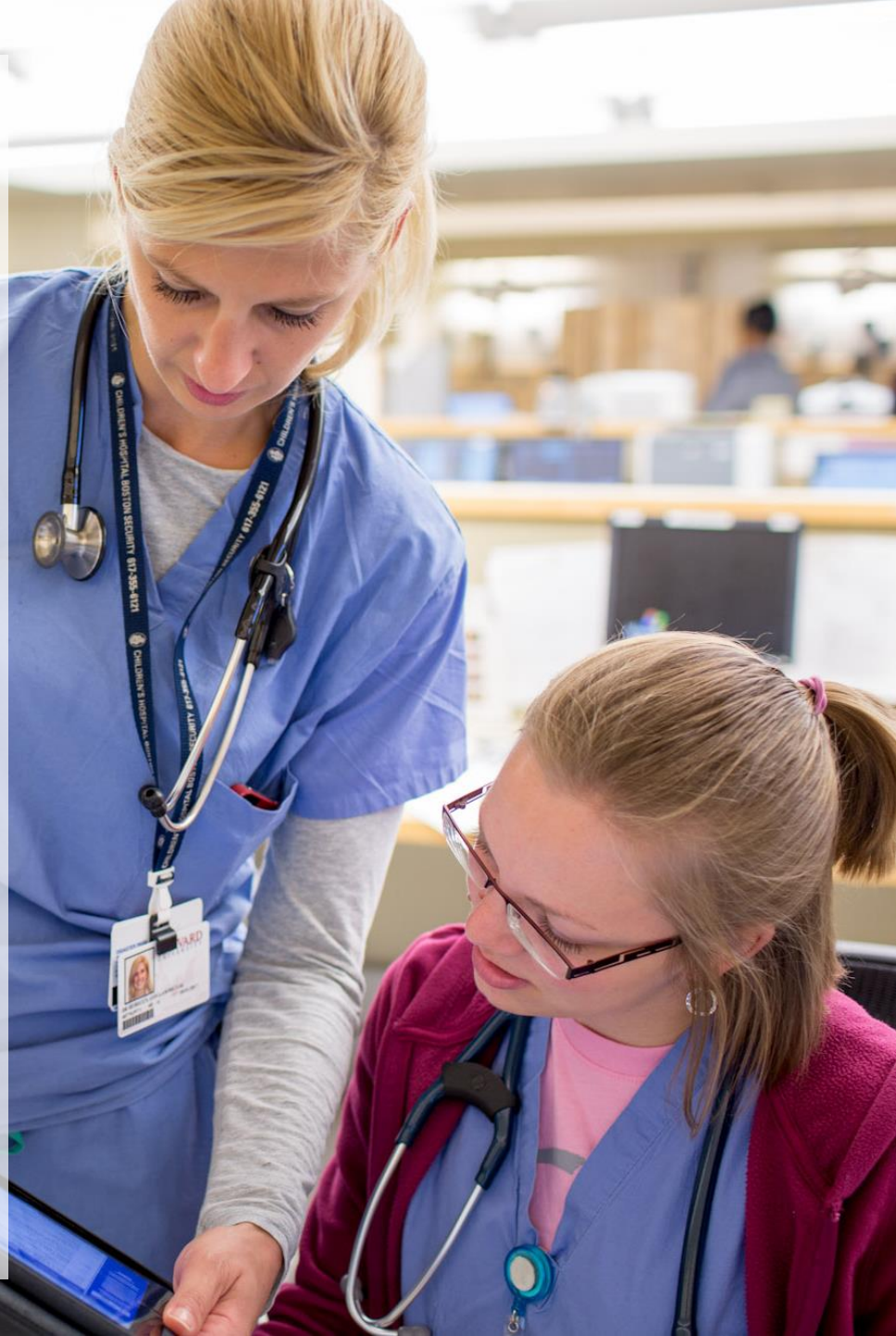
STEPS IN THE AMBULATORY PROCESS OF CARE
1. Patient notes problem and seeks care
2. History/ Physical
3. Patient Assessment / evaluation of symptoms
4. Diagnostic Processing
5. Order of diagnostic/lab test
6. Performance of tests
7. Interpretation of tests
8. Receipt/ transmittal of test results (to provider)
9. Physician follow up with patient

- Clinical communication regarding patient's condition
- Failure to read medical record
- Poor professional relationship/rapport among providers
- Failure to identify provider responsible for coordinating



CRICO Emergency Medicine Leadership Council

- **43 participants** from 19 AMC & Community Hospitals (MDs, RNs, PAs)
- **Comprehensive investigation** of diagnostic challenges in ED
  - Data analysis & detailed case study
  - Self assessment survey
  - Pilot solutions
- **White Paper:**
  Optimizing MD-RN Communication in the ED: Strategies for Minimizing Diagnosis-related Errors



EMLC: Detailed ED Case Review

200 cases reviewed for specific clinical trends and patterns that contribute to the information gaps

5 key information gaps emerged in cases with diagnostic failures

- **Availability of historical information**
- **Synthesis and reconciliation of real-time clinical data**
- **Management of test results (lab & radiology)**
- **Communication with consulting MDs**
- **Communication between MDs and RNs**

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EMLC: Self-assessment Survey

Completed by 17 (of 19) organizations

KEY TARGETS / RISK CATEGORIES	SCORE 1 - 5
Availability of historical information	
Adequacy of real-time clinical assessment	
Diagnostic testing and result management	
• Radiology	
• Laboratory	
Consultations	
MD/RN Communication	
Handoffs	

Scoring Grade

1 - Low Score - Needs improvement

5 - High Score - Safe / Best Practice

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EMLC: Self-assessment Final Rankings

Cumulative results for 17 participating organizations

CATEGORY / SPECIFIC ISSUE	AVG SCORE
Communication: RN/MD care team	
Reconciliation of Abnormal VS	
Communication: Consultant Physicians	
Communication: Handoff	
Management of Diagnostic Results (*Radiology)*	
Obtaining Historical Information	
Management of Diagnostic Results (*Laboratory)*	
Triage	

Scoring Grade

1 - Low Score - Needs improvement

5 - High Score - Best Practice

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Closing the Loop on Clinical Communication

Gaps in the Process of ED Care

CARE STEPS	% CASES
1. Patient notes problem and seeks care	5%
2. Initial assessment: history & physical exam	12%
3. Ongoing assessment: monitoring of clinical status	60%
Communication among providers re: patient's condition	43%
CT scan 18%	6%
X-ray 14%	23%
MRI 7%	
7. Transmittal of test results to (ED) provider	14%
Failure/delay in reporting findings/revised findings	7%
Clinician did not receive results	7%
10. Post discharge follow-up (includes pending test results)	20%
Patient did not receive results: no report or wrong report	12%
Lack of/failure in patient follow-up system: new finding	7%

Mind The Gaps: Late Arriving Results in the Emergency Department

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Disclosures

- None

What I Am

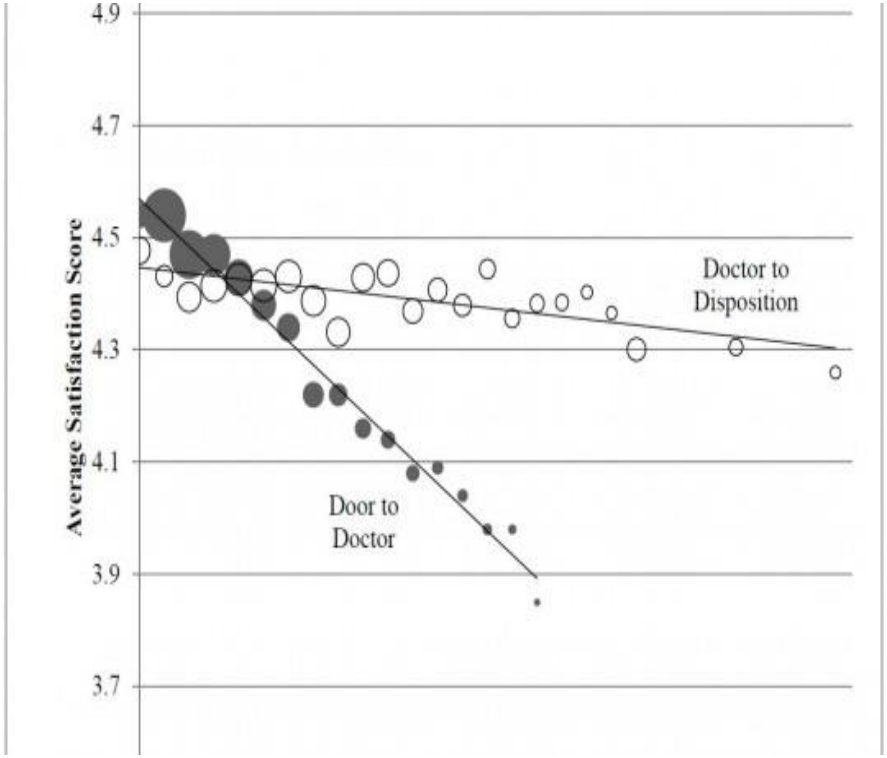
- A tall, dark, handsome Pediatric Emergency Physician

- Think George Clooney

What I Am Not

- An expert on Patient Safety or Risk Management
- But I did sleep at a Holiday Inn Express last night

What Are The Struggles…



Morgan et al, 2015.

- Time
- Move to outpatient
- Complexity of illness
- Diagnostic complexity

By Specialty

- General Surgery
  - Ward patient with chest pain
- Hospitalist
  - Wound under a bandage
- Pediatrician
  - 65 year old
- Obstetrician
  - XY chromosome complement
- Emergency Physician
  - Late arriving lab testing
  - Radiology over-reads

Case

- 75-year-old male presents with fever to our ED
- Complex urologic history including ureteral stents
- Febrile but well-appearing
- Vitals without tachycardia and normal blood pressure

Case

- Seen by ED staff and Urology consulted and saw the patient in the ED
- Labwork including urine, urine culture and blood culture ordered and sent
- Diagnosed with a UTI and started on Cipro with close outpatient follow up

Case

- Urine culture and blood culture turn positive for Gram-positive cocci in clusters
- Critical results pathway initiated
- Patient called and states “I feel much better”
- ED Senior Resident calls Urology Resident to alert him to findings
- Note in chart of communication

Case

- 7 days later, has a follow up with Urology
- Stents addressed but not recent Microbiologic data
- Patient still having malaise, low grade fevers but not mentioned during visit
- Cultures end up growing Enterococcus faecalis
  - Known resistance to Cipro

Case

- 1 month later presents to the ED with persistent fevers and malaise
- New murmur noted on exam
- Diagnosed with E. faecalis endocarditis requiring valve replacement

Swiss Cheese Model of Error

The Process

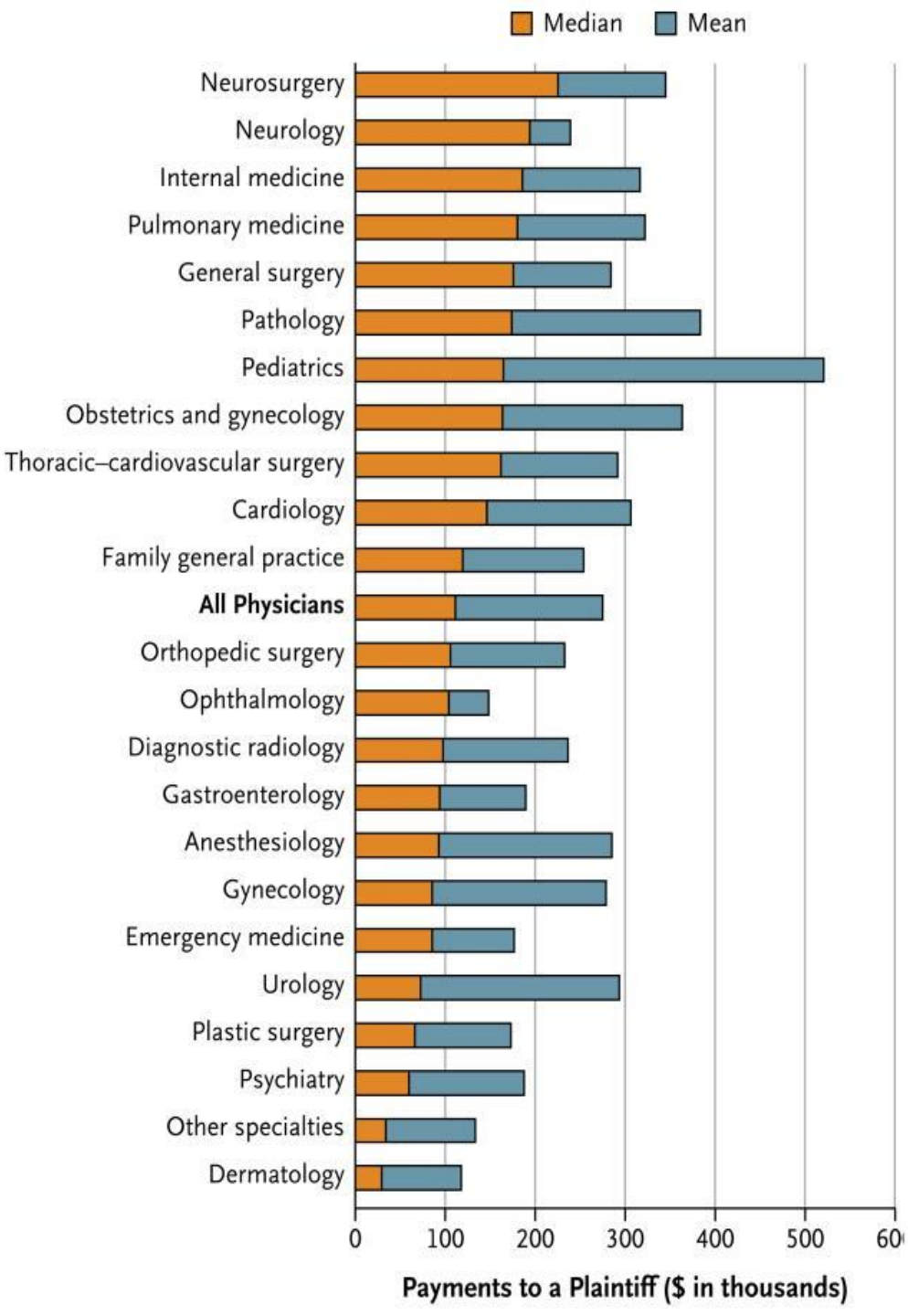
- RCA
- Critical results process good but holes remain
- Late arriving labs

Stakeholder Meetings

- Lab
- ED providers
- ED nursing
- IT support
- Risk Management for “diffusion of innovation”
- Administration and finance

The Ask

- Had the patient safety example
- The financial argument
- The “right thing to do”



Key Decisions

- Keep “critical results” definitions
  - Phone call with documentation
- Blood cultures “special”
  - Routed to Attending Provider not just provider
- Blood cultures will re-hit results queue with speciation and sensitivities

Key Decisions

- Hiring of 0.5 FTE Senior Registered Nurse
  - APP/Attending support for questions
- Initially rolled out for just labs
  - Evolved
  - Radiology “final” reads incorporated


Epic

System Rework

- Much more robust results routing
- Better documentation and communication
- Lot's of arm wrestling

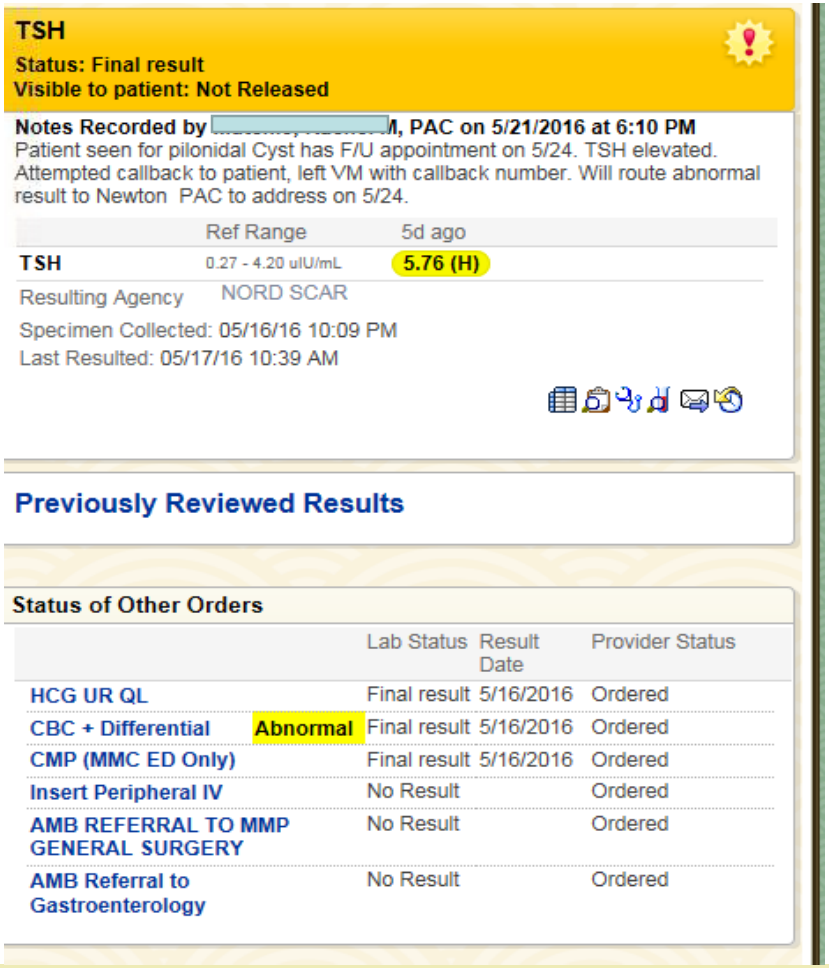
Technology Breeds Controversy

- Results routed to PCP
- If you order it, you own it
- Matching our “culture” with EPIC workflows

Key Decision Points

- Critical results stay “as is”
  - This works
- Non-critical late arriving labs
  - PCP or Ordering Provider or both
- Radiology final reads
  - PCP or Ordering Provider or both

Why It Works



TSH

Status: Final result
Visible to patient: Not Released

Notes Recorded by [redacted], PAC on 5/21/2016 at 6:10 PM
Patient seen for pilonidal Cyst has F/U appointment on 5/24. TSH elevated. Attempted callback to patient, left VM with callback number. Will route abnormal result to Newton PAC to address on 5/24.

	Ref Range	5d ago
TSH	0.27 - 4.20 uIU/mL	**5.76 (H)**
Resulting Agency	NORD SCAR	

Specimen Collected: 05/16/16 10:09 PM
Last Resulted: 05/17/16 10:39 AM

Previously Reviewed Results

Status of Other Orders

		Lab Status	Result Date	Provider Status
HCG UR QL		Final result	5/16/2016	Ordered
CBC + Differential	Abnormal	Final result	5/16/2016	Ordered
CMP (MMC ED Only)		Final result	5/16/2016	Ordered
Insert Peripheral IV		No Result		Ordered
AMB REFERRAL TO MMP GENERAL SURGERY		No Result		Ordered
AMB Referral to Gastroenterology		No Result		Ordered

Current State

- Queue monitored daily
- APP's instead of RN
  - Prescribing rights
- ED responsible for ED orders
  - PCP "back up"