

# A COLLABORATIVE RESEARCH- OPERATIONS PARTNERSHIP FOR IMPROVING SAFETY OF DIAGNOSIS

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Baylor  
College of  
Medicine

# Multidisciplinary Team

Using health information technology and sociotechnical approaches to understand and improve diagnosis

2

*Dean*



**Medical Informatics**

*Ashley*



**Psychologist/ Analyst**

*Arushi*



**Research Coordinator**

*Daniel*



**Physician/ Health IT**

*Traber*



**Social Work/ Qualitative Research**

*Viral*



**Physician- Informatics**

*Viraj*



**Physician/ Health IT**

*Elise*



**Research Coordinator**

*Donna*



**Project Coordinator**

*Jessica*



**Research Coordinator**

*Li*



**Data Analyst**

*Poll Question #1:*

**My main role in the VA is \_\_\_\_\_.**

- Research Investigator/Research Staff
- Administrative/Operations
- IT/Informatics
- Clinician/Clinical Staff
- Other (specify)

July 9, 2012

# A New Approach to Health Services Research

Joel Kupersmith, MD; Seth Eisen, MD, MSc

» [Author Affiliations](#) | [Article Information](#)

*Arch Intern Med.* 2012;172(13):1033-1034. doi:10.1001/archinternmed.2012.2004

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“...the absence of effective mechanisms for meaningful and regular coordination between health services researchers and health systems leaders, clinicians, and other key stakeholders. Generally speaking, researchers publish studies hoping that the appropriate stakeholder group will somehow learn of their work and *also* implement their findings.”

# Journey of Partnership

- From Evidence to Impact in collaboration with VA Partners:
  - Generate evidence to solve a problem (VA National Center for Patient Safety- NCPS)
  - Knowledge transfer (Primary Care Program Office & NCPS)
  - Partnership research (VA Network: VISN 12)
  - Impacting measurement initiatives (Office of Performance Measurement)

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To Your Health

## Most Americans will get a wrong or late diagnosis at least once in their lives

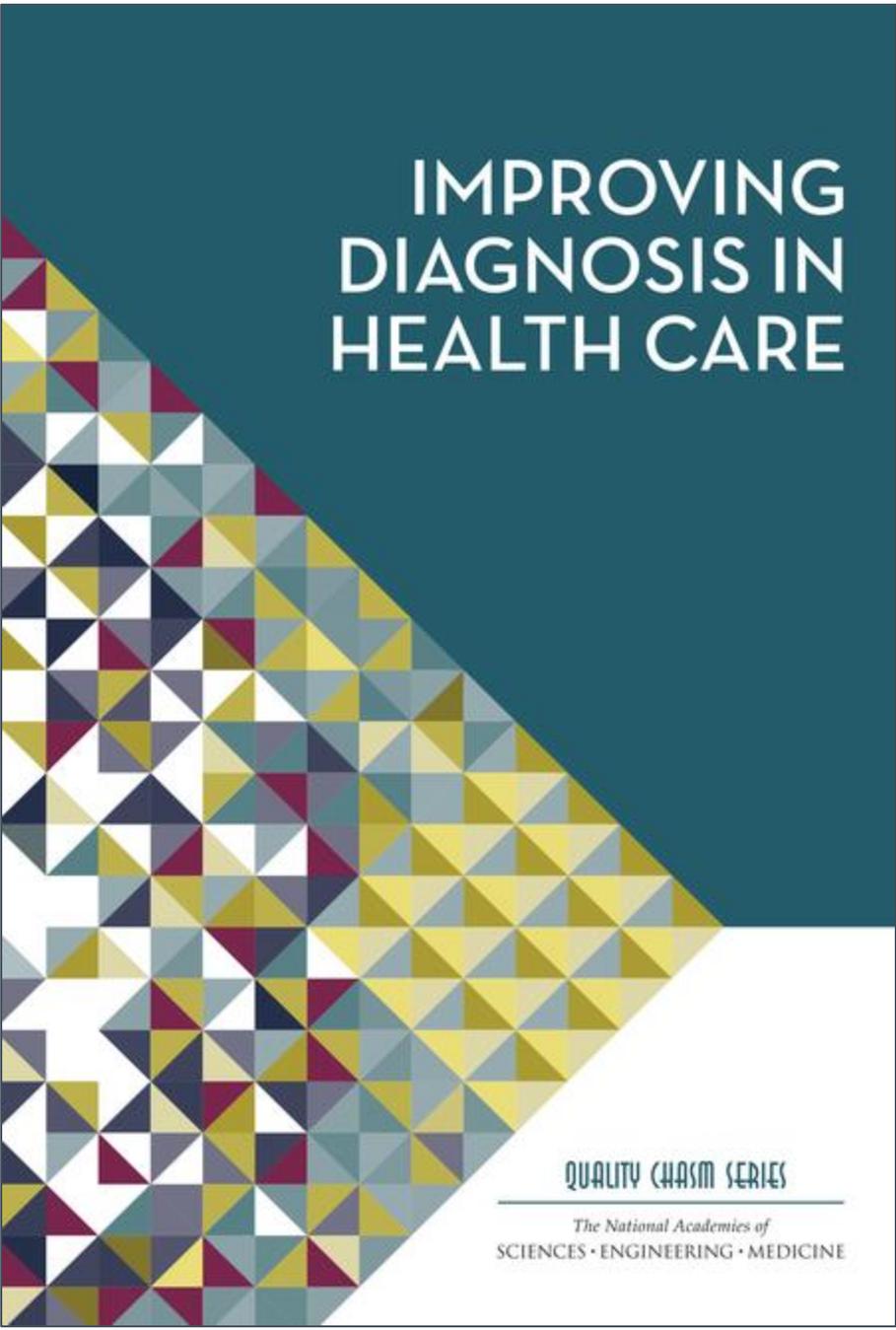
By [Lena H. Sun](#) September 22

Most Americans who go to the doctor will get a diagnosis that is wrong or late at least once in their lives, sometimes with terrible consequences, according to a report released Tuesday by an independent panel of medical experts.

This critical type of health-care error is far more common than medication mistakes or surgery on the wrong patient or body part. But until now, diagnostic errors have been a relatively understudied and unmeasured area of patient safety. Much of patient safety is focused on errors in hospitals, not mistakes in diagnoses that take place in doctors' offices, surgical centers and other outpatient facilities.

The [new report](#) by the Institute of Medicine, the health arm of the National Academy of Sciences, outlines a system-wide problem. The report's authors say they don't know how many diagnostic errors take place. But the report cited one estimate that such errors affect at least 12 million adults each year, or about 5 percent of adults who seek outpatient care.





# IMPROVING DIAGNOSIS IN HEALTH CARE

QUALITY CHASM SERIES

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE

# Abnormal Test Results May Not Get to Patients

By NICHOLAS BAKALAR

Published: June 22, 2009

If you think your doctor will automatically tell you if you have an abnormal test result, think again. Researchers studying office procedures among primary care physicians found evidence that more than 7 percent of clinically significant findings were never reported to the patient.

The scientists, led by Dr. Lawrence P. Casalino, an associate professor at Weill Cornell Medical College, reviewed the records of 5,434 patients at 19 independent primary care practices and four based in academic medical centers. They extracted records that contained abnormal results for blood tests or X-rays and other imaging studies, and then searched for documentation that the patient had been properly informed of the problem in a timely way.

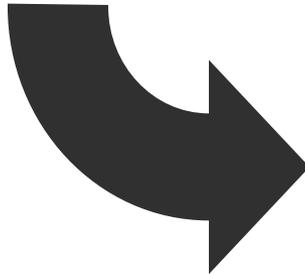
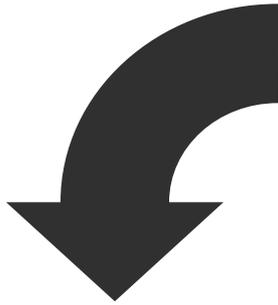
Then they surveyed the doctors with uninformed patients. Some told them that the patient had been informed, even though there was no documentation, while

# Errors of Test Results Follow-up

10

- ❑ Failure to follow-up abnormal test results: up to 36%
- ❑ Review by Callen in *JGIM*: 6.8%-62% for laboratory tests and 1.0%-35.7% for radiology.
- ❑ Communication breakdowns prevalent but also a problem IT can solve!
- ❑ Will technology eliminate failures to follow-up test results?

# Case Study



Alert in "View Alert" window

**Patient Selection**

Patient List:  Default,  Providers,  Team/Personal,  Specialties,  Clinics,  Wards,  All

Patients: No Appointments, ZZTestpt1, ZZTestpt 2, ZZTestpt 3, ZZTestpt 4, ZZTestpt 5, ZZTestpt 11, ZZTestpt 21, ZZTestpt 31, ZZTestpt 41, ZZTestpt 51

Save Patient List Settings

Notifications

Info	Patient	Location	Urgency	Alert Date/Time	Message
	ZZTestpt 1		Moderate	01/20/2009@13:47	Scheduled Consult: ORTHOPEDICS
	ZZTestpt 9999999999	3B	Moderate	01/22/2009@11:37	Scheduled Consult: NON-INVASI ECHO
	ZZTestpt 333	3C MED	HIGH	01/21/2009@00:21	Medications nearing expiration.
	ZZTestpt 55555		Moderate	01/22/2009@12:39	Imaging request held: KNEE 3 VIEWS, LEFT E
	ZZTestpt 55555		Moderate	01/22/2009@15:14	Imaging Results: KNEE 3 VIEWS, RIGHT
	ZZTestpt 55555		Moderate	01/22/2009@15:10	Imaging Results: KNEE 3 VIEWS, LEFT
	ZZTestpt 7777777	2A REHAB	Moderate	01/16/2009@12:09	Imaging Results: CT THORAX W/CONT
	ZZTestpt 7777777	2A REHAB	Moderate	01/16/2009@03:17	Imaging Results: CHEST SINGLE VIEW
	ZZTestpt 7777777	2A REHAB	Moderate	01/16/2009@12:09	Imaging Results: 3D/SAG/COR/RECONSTR
	ZZTestpt 22		Moderate	01/22/2009@12:43	Forwarded consult PHARMACY HOUSTON OI
	ZZTestpt 666666		Moderate	01/21/2009@10:57	Discontinued consult NON-INVASI ECHO
	ZZTestpt 4444		Moderate	01/21/2009@12:39	Completed Consult NON-INVASI EKG: BEDS
	ZZTestpt 9999999999	3B	Moderate	01/22/2009@13:06	Completed Consult NON-INVASI ECHO
	ZZTestpt 22		Moderate	01/14/2009@03:39	Completed Consult AUDIOLOGY
	ZZTestpt 666666		Moderate	01/21/2009@13:05	Abnormal labs - [TROPONIN I]
	ZZTestpt 55555		Moderate	01/21/2009@11:20	Abnormal labs - [LIPID PROFILE, COMPREHE
	ZZTestpt 888888888		Moderate	01/16/2009@08:18	Abnormal labs - [COMPREHENSIVE METABO
	ZZTestpt 55555		Moderate	01/21/2009@11:08	Abnormal labs - [CBC&PLT] WITH DIFF

Process Info Process All Process Forward Show Comments Remove

# “View Alert” window

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The screenshot shows a software window titled "View Alert" with two main sections: "Patient Selection" and "Notifications".

**Patient Selection:** This section includes a "Patient List" with radio buttons for "Default" (selected), "Providers", "Team/Personal", "Specialties", "Clinics", "Wards", and "All". A "Patients" list box contains the text "No Appointments." and a list of patient identifiers: ZZTestpt1, ZZTestpt 2, ZZTestpt 21, ZZTestpt 31, ZZTestpt 41, and ZZTestpt 51. There are "OK", "Cancel", and "Save Patient List Settings" buttons.

**Notifications:** A table displays a list of alerts. The fifth row is highlighted with a red border, indicating an abnormal imaging alert.

Info	Patient	Location	Urgency	Alert Date/Time	Message
	ZZTestpt 333	3C MED	HIGH	01/21/2009@00:21	Medications nearing expiration.
	ZZTestpt 9999999999	3B	Moderate	01/22/2009@11:37	Scheduled Consult: NON-INVASI ECHO
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	ZZTestpt 22		Moderate	01/14/2009@09:39	Completed Consult AUDIOLOGY
	ZZTestpt 1		Moderate	01/20/2009@13:47	Scheduled Consult: ORTHOPEDICS

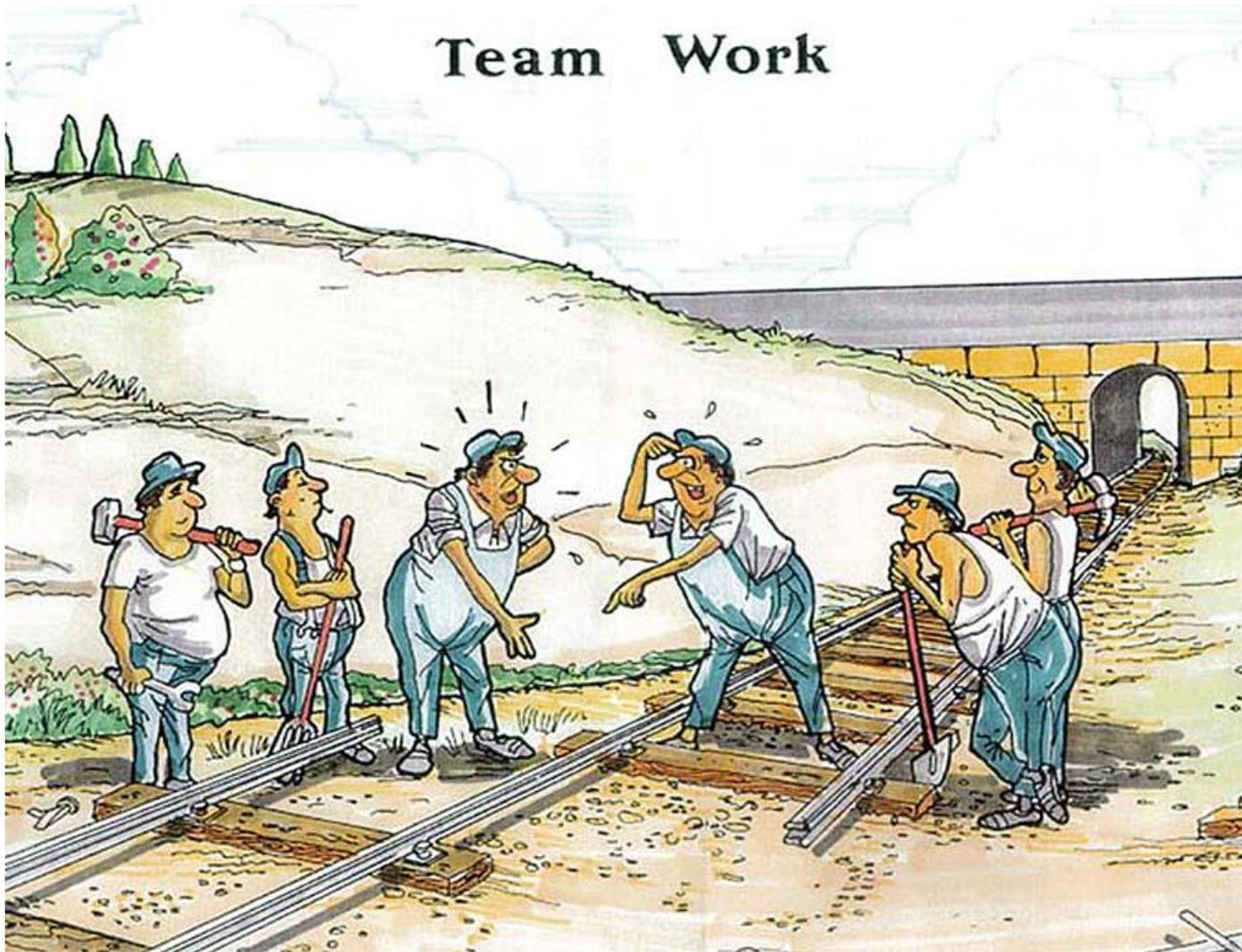
Buttons at the bottom include "Process Info", "Process All", "Process", "Forward", "Show Comments", and "Remove".

Example of an abnormal imaging alert

# Partner NCPS: Communication of Results

- Evaluation of 1,163 outpatient abnormal lab & 1,196 abnormal imaging test result alerts
  - 7% abnormal labs lacked timely follow-up
  - 8% abnormal imaging lacked timely follow-up
- Why abnormal test results continue to get missed in health IT-based settings

# Ambiguous Responsibility a Huge Issue



By MICHELLE CASTILLO / CBS NEWS / March 5, 2013, 1:16 PM

# Too many electronic health record alerts may be leading doctors to skip them



Your doctor may be more likely to ignore your test results if they come electronically.

A new study published in the JAMA Internal Medicine on Mar. 4 revealed that doctors receive about 63 electronic health record (EHR)-based alerts each day, which are supposed to let them know about abnormal patient results. And, almost one-third of the doctors surveyed -- **about 30 percent** -- admitted

that they had missed some results because of too many alerts.

"If you're getting 100 emails a day, you are bound to miss a few. I study this area and I still sometimes miss emails. We have good intentions, but sometimes getting too many can be a problem," Dr. Hardeep Singh, chief of health policy, quality, and informatics at the Michael E. DeBakey Veterans Affairs Medical Center, in Houston, told TIME.

# Primary care practitioners' views on test result management in EHR-enabled health systems: a national survey



OPEN ACCESS

Hardeep Singh,<sup>1</sup> Christiane Spitzmueller,<sup>2</sup> Nancy J Petersen,<sup>1</sup> Mona K Sawhney,<sup>1</sup>  
 Michael W Smith,<sup>1</sup> Daniel R Murphy,<sup>1</sup> Donna Espadas,<sup>1</sup> Archana Laxmisan,<sup>1</sup>  
 Dean F Sittig<sup>3</sup>

**Table 6** New features and functions to improve EHR-based notification

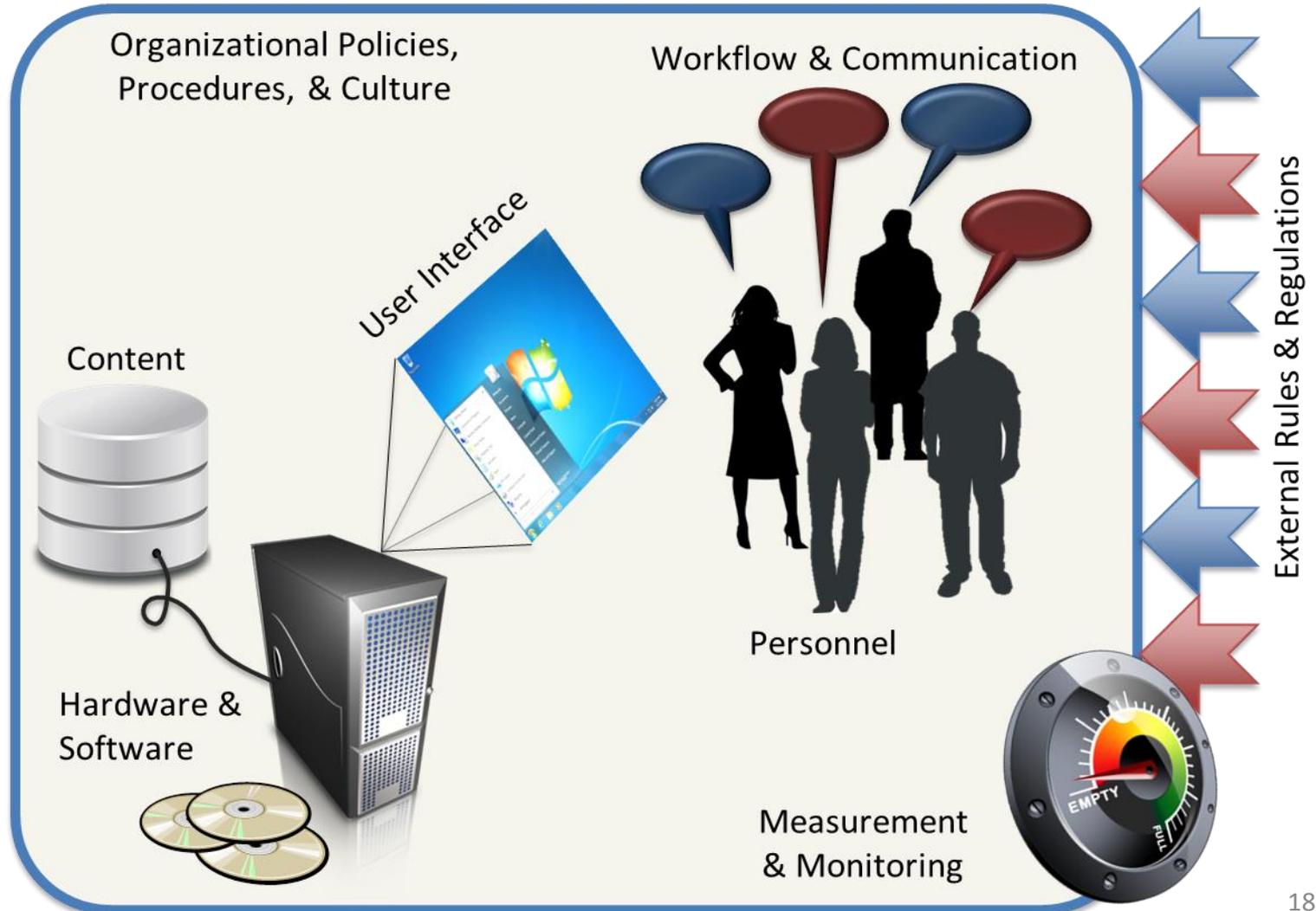
Item	Agree or strongly agree n (%)
<b>Hardware and software</b>	
<u>Improving communication and alert management options</u>	
I would like to be able to set reminders for myself for future actions	2160 (83.4)
I would like to have a messaging system within CPRS that would allow providers to communicate with one another - this would be outside the View Alert system	1826 (70.5)
<b>Human-computer interface</b>	
<u>Improving alert visualization</u>	
I would like to receive high priority test result notifications in one window, and all other alert notifications in another window	1611 (62.2)
I would like an option to display only certain alert notifications at a time (ie, filter to display only surrogate, inpatient, or high priority alerts)	1722 (66.5)
I would like to have my alert notifications color-coded according to type (eg, surrogate, inpatient, or high priority alerts)	1720 (66.4)
<u>Better processing and tracking of alerts</u>	
I would like to be able to retrieve my deleted alert notifications	2036 (78.6)
High priority alert notifications should not disappear until I actively delete them after taking follow-up action	1913 (73.9)

# Multiple “Socio-Technical” Issues

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<b>Issue</b>	<b>Examples</b>
<i>Software</i>	no functionality for saving, tracking, and retrieving alerts; alerts ‘disappear’
<i>Content</i>	too many unnecessary alerts
<i>Usability</i>	poor signal to noise ratio on screen
<i>Workflow</i>	“surrogate feature” to forward alerts when providers out of office not used properly
<i>Providers</i>	lack of knowledge/training
<i>Organizational</i>	policies for follow-up ambiguous; informatics workforce

# 8-dimensional Socio-Technical Approach



# We Developed CPRS-Based IT Fixes But...

Research Article

 Applied Clinical Informatics 359

## Developing Software to “Track and Catch” Missed Follow-up of Abnormal Test Results in a Complex Sociotechnical Environment

M. Smith<sup>1</sup>; D. Murphy<sup>1</sup>; A. Laxmisan<sup>1</sup>; D. Sittig<sup>2</sup>; B. Reis<sup>1</sup>; A. Esquivel<sup>3</sup>; H. Singh<sup>1</sup>

<sup>1</sup>Houston VA HSR&D Center of Excellence and The Center of Inquiry to Improve Outpatient Safety Through Effective Electronic Communication, Michael E. DeBakey Veterans Affairs Medical Center and the Section of Health Services Research, Department of Medicine, Baylor College of Medicine, Houston, Texas;

<sup>2</sup> University of Texas School of Biomedical Informatics and the UT-Memorial Hermann Center for Healthcare Quality & Safety, Houston, Texas;

<sup>3</sup> Department of Clinical Effectiveness and Performance Measurement, St. Luke’s Episcopal Health System, Houston, Texas

## Ten Strategies to Improve Management of Abnormal Test Result Alerts in the Electronic Health Record

Hardeep Singh, MD, MPH,\*† Lindsey Wilson, MA,\* Brian Reis, BE,\*

Mo

*The Joint Commission Journal on Quality and Patient Safety*

### National Patient Safety Goals

Missed abnormal test results in the electronic health record setting. Failure to act on diagnostic errors, and delays in diagnosis, are often attributed within electronic health record implementation of abnormal test results. Computerized Patient Safety System (CPSS) at several facilities, uses an algorithm to flag abnormal diagnostic test results. In a study of 7% of abnormal test results that were not up within 30 days. We also found that in diagnostic laboratories (per day), some of the specific features in the

## Eight Recommendations for Policies for Communicating Abnormal Test Results

Hardeep Singh, M.D., M.P.H.; Meena S. Vij, M.D.

Failures of communication in diagnostic test results. Ability claims. prioritized safety as a National critical results basis.<sup>6</sup> Although largely preventable, cited areas of improvement in defining the problem. In laboratory value representation with normal and quickly and fo

## Improving Test Result Follow-up through Electronic Health Records Requires More than Just an Alert

Dean F. Sittig, PhD<sup>1</sup> and Hardeep Singh, MD, MPH<sup>2,3</sup>

<sup>1</sup>University of Texas – Memorial Hermann Center for Healthcare Quality & Safety, School of Biomedical Informatics, University of Texas Health Sciences Center, Houston, TX, USA; <sup>2</sup>Houston VA Health Services Research and Development Center of Excellence and The Houston VA Patient Safety Center of Inquiry, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX, USA; <sup>3</sup>Section of Health Services Research, Department of Medicine, Baylor College of Medicine, Houston, TX, USA.

J Gen Intern Med 27(10):1235–7  
DOI: 10.1007/s11606-012-2161-y  
© Society of General Internal Medicine 2012

A recent American Medical Association report highlighted failures in communication of abnormal test results as an important but understudied facet of improving safety in ambulatory care.<sup>1</sup> Because many outpatient test

appropriate follow-up within 3 days in the intervention group (28 % vs. 13 % in controls). Neither group's laboratory follow-up rate was particularly encouraging.

On the bright side, both studies used distinctly different research approaches to reach similar conclusions, i.e., application of information and communication technologies, such as electronic health records (EHRs) with alerting capability, can increase the likelihood of appropriate test result follow-up. In paper-based systems, evaluating evidence of follow-up is itself challenging. On the other hand, both

# From “Academic” to “Field” Products

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- Goal to impact practice and policy by working with a partner to convert evidence into action
- Worked with NCPS and Primary Care Program Office to develop and disseminate “field-ready” tools, strategies, and guidance

# Policy Impact: Communicating Test Results to Providers and Patients

- Invited by Primary Care leadership to lead a national workgroup to revise VHA Directive
- Several policy modifications based on this research included in revision
- VHA Directive 1088 released Oct 8 2015 is now in effect

[VHA Directive 1088](#)

Department of Veterans Affairs  
Veterans Health Administration  
Washington, DC 20420

VHA DIRECTIVE 1088  
Transmittal Sheet  
October 7, 2015

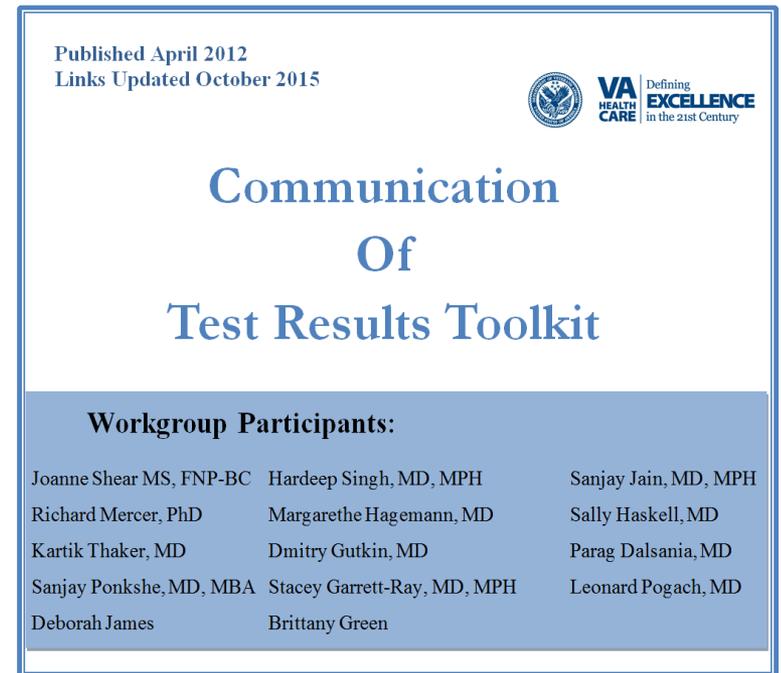
#### COMMUNICATING TEST RESULTS TO PROVIDERS AND PATIENTS

- 1. REASON FOR ISSUE:** This Veterans Health Administration (VHA) Directive establishes policy regarding communication of test results to providers and patients.
- 2. SUMMARY OF MAJOR CHANGES:** This Directive establishes that, as a general rule, test results are to be communicated to patients within 7 calendar days for results requiring action and 14 days for those that do not require any action. (This departs from prior policy that required all test results notifications to be made within 14 calendar days.)
- 3. RELATED ISSUES:** None.
- 4. RESPONSIBLE OFFICE:** The Office of Patient Care Services (10P4) is responsible for the content of this Directive. Questions regarding ordering tests and reporting test results to ordering practitioners may be directed to the Chief Consultant for Diagnostic Services (10P4D) at 919-382-8851. Questions regarding communication of test results to patients may be directed to the Chief Consultant for Primary Care Services (10P4F) at 202-461-4158.
- 5. RESCISSIONS:** VHA Directive 2009-019, dated March 24, 2009, is rescinded.
- 6. RECERTIFICATION:** This VHA Directive is scheduled for recertification on or before the last working day of October 31, 2020.

David J. Shulkin, M.D.  
Under Secretary for Health

# Practice Impact: VHA Communication of Test Results (CTR) Toolkit

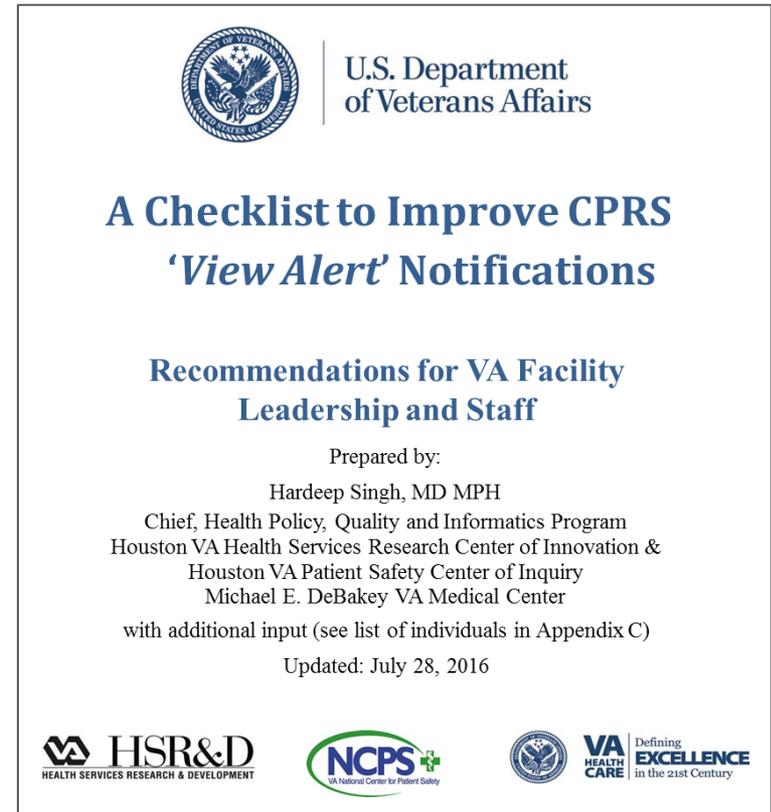
- VAMCs face challenges w/ policy requirements
  - ▣ Worked with a multidisciplinary national workgroup to develop the CTR toolkit to help VA facilities achieve standards of test result notification
  - ▣ National resource hosted on VACO sharepoint



# Practice Impact: A Checklist to Improve CPRS View Alert Notifications

- Worked with key VA stakeholders to develop a Checklist to assist VHA facilities in addressing View Alerts
- Actionable, practical recommendations for both CPRS Users and VA Facility leadership
- Disseminated nationally & influenced 2 VISN Pilot Projects

Also available on VA Pulse



# Impact Outside the VA

- The Office of the National Coordinator for Health Information Technology (ONC)-sponsored “Safety Assurance Factors for EHR Resilience (SAFER) project”
- Proactive risk assessment and guidance
- “1<sup>st</sup> draft” of best practices and knowledge
- Self-assessment; not meant to be regulatory
  - Focused on high-risk areas including test results communication
  - Nine guides—all freely available

<http://www.healthit.gov/safer>



# Practice 21

Reco

## Recommended Practice

### Implementation Status

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**21** The EHR has the capability for the clinician to set reminders for future tasks to facilitate test result follow-up. [28,40](#)

- Fully in all areas
- Partially in some areas
- Not implemented

20

[Checklist](#)

21

Reco

## Rationale for Practice or Risk Assessment

### Suggested Sources of Input

22

The EHR can help clinicians follow-up with patients regarding test results. Unless they set reminders for themselves, clinicians may forget about follow-up tasks they need to do.

EHR developer  
Health IT support staff

23

## Examples of Potentially Useful Practices/Scenarios

- Functionality to record a follow-up action due at a future date exists in the EHR.



## Clinical Laboratory Improvement Advisory Committee (CLIAC)

CLIAC Home	
Meetings	+
Membership	+
CLIAC Charter	
About CLIAC	
CLIA	

[CDC](#)



The Clinical Laboratory Improvement Advisory Committee (CLIAC), managed by the Centers for Disease Control and Prevention (CDC), provides scientific and technical advice and guidance to the Department of Health and Human Services (HHS). The Committee includes diverse membership across laboratory specialties, professional roles, (laboratory management, technical, physicians, nurses) and practice settings (academic, clinical, public health), and includes a consumer representative.



### **Recommendation 1a**

CMS should convene a multidisciplinary group\* to

- Generate a report describing a process for health care institutions to improve safe communication and follow-up of diagnostic test results to providers and/or patients with clear guidelines on timelines for communicating those results
- Provide an implementation and evaluation plan for the process
- Examples of guidance for the report include 2015 VHA policy on communicating test results available at

[http://www.va.gov/vhapublications/ViewPublication.asp?pub\\_ID=3148](http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=3148)

# Identification and Prioritization of Health IT Patient Safety Measures

FINAL REPORT

FEBRUARY 11, 2016

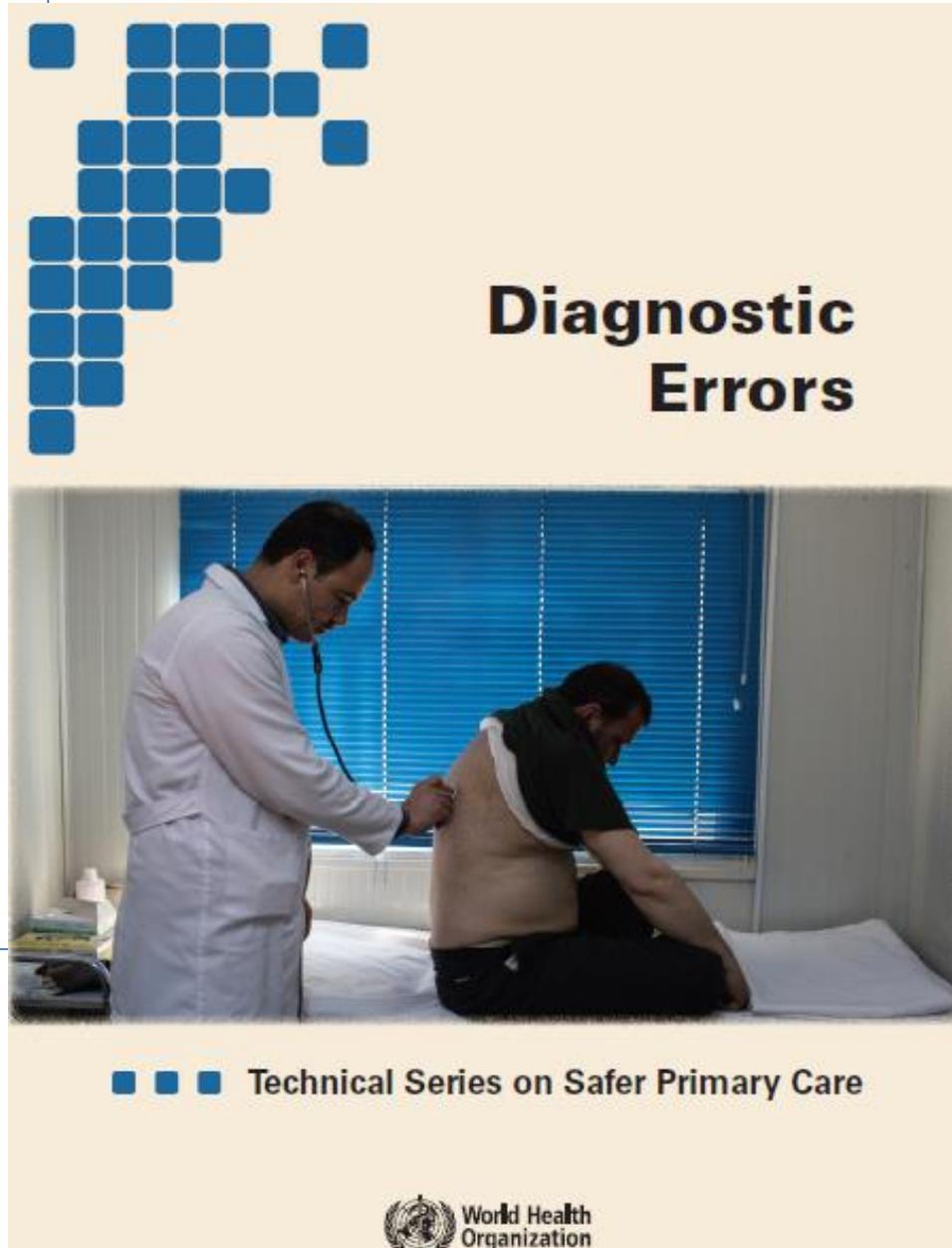


**NATIONAL  
QUALITY FORUM**

This report is funded by the Department of Health and Human Services under contract HHSM-500-2012-00009I, Task Order HHSM-500-T0016.

[http://www.qualityforum.org/HIT\\_Safety.aspx](http://www.qualityforum.org/HIT_Safety.aspx)

<http://apps.who.int/iris/bitstream/10665/252410/1/9789241511636-eng.pdf>



# Journey of Partnership

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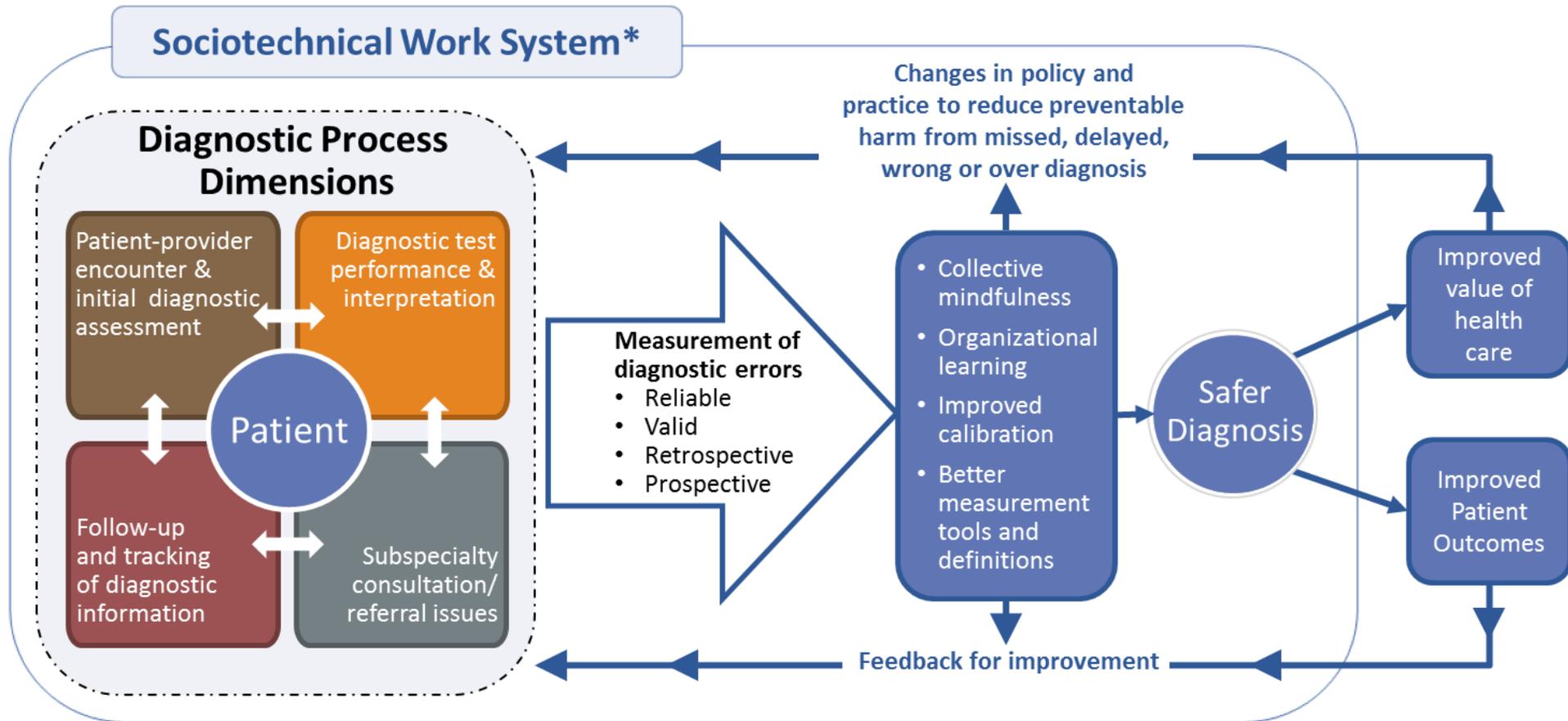
Data → Information → Knowledge

- Missed/delayed cancer diagnosis a safety concern across many systems
- Major reason: Lack of timely follow-up of cancer-related abnormal test results
- Measurement is key

Singh et al JCO 2010

Singh et al Am J Gastro 2009

# Safer Diagnosis (Safer Dx) Measurement Framework



\* Includes 8 technological and non-technological dimensions

# EHRs Enable Measurement of Safety

- EHR-based notification is only a start
- On a daily basis, thousands of patients have abnormal test results
- Can we electronically identify those likely to be experiencing delays and intervene?
- Like finding “needles in the haystack” and “creating safety nets”

# Big Data Safety Net

- Electronic health record (EHR)-based triggers look for follow-up actions on clues (or red flags) to detect delays prospectively
- Basic versions:
  - + hemocult or microcytic anemia with no subsequent colonoscopy in 60 days
  - suspicious chest-x ray with no follow-up CT scan in 30 days

# Development and Validation of Electronic Health Record–based Triggers to Detect Delays in Follow-up of Abnormal Lung Imaging Findings<sup>1</sup>

Daniel R. Murphy, MD, MBA  
Eric J. Thomas, MD, MPH  
Ashley N. D. Meyer, PhD  
Hardeep Singh, MD, MPH

## BMJ Quality & Safety

The international journal of healthcare improvement

### Electronic health record-based triggers to detect potential delays in cancer diagnosis

Daniel R Murphy,<sup>1,2</sup> Archana Laxmisan,<sup>1,2</sup> Brian A Reis,<sup>1,2</sup> Eric J Thomas,<sup>3</sup> Adol Esquivel,<sup>4</sup> Samuel N Forjuoh,<sup>5</sup> Rohan Parikh,<sup>6</sup> Myrna M Khan,<sup>1,2</sup> Hardeep Singh<sup>1,2</sup>

#### ABSTRACT

**Background** Delayed diagnosis of cancer can

follow-up of abnormal clinical findings suspicious for cancer.

# BMJ Open How context affects electronic health record-based test result follow-up: a mixed-methods evaluation

Shailaja Menon,<sup>1</sup> Michael W Smith,<sup>1</sup> Dean F Sittig,<sup>2</sup> Nancy J Petersen,<sup>1</sup> Sylvia J Hysong,<sup>1</sup> Donna Espadas,<sup>1</sup> Varsha Modi,<sup>1</sup> Hardeep Singh<sup>1</sup>

## ABSTRACT

Objectives: Electronic health record (EHR)-based alerts can facilitate transmission of test results to healthcare providers, helping ensure timely and appropriate follow-up. However, failure to follow-up on

## Strengths and limitations of this study

- Effectiveness of test results management in electronic health record (EHR)-enabled settings might be influenced by several sociotechnical

**Conclusions:** Our study identified several scenarios that pose a higher risk for missed test results in EHR-based healthcare systems. In addition to implementing provider-level strategies to prevent missed test results, healthcare organisations should consider implementing monitoring systems to track missed test results.

categorised as low and high perceived risk, adjusting for structural characteristics.

Results: Facilities with low perceived risk were significantly more likely to use specific strategies to prevent alerts from being lost to follow-up ( $p=0.0114$ ). Qualitative analysis identified three high-risk scenarios for missed test results: alerts on tests ordered by trainees, alerts 'handed off' to another covering clinician (surrogate clinician), and alerts on patients not assigned in the EHR to a PCP. Test result

Although EHRs appear to reduce the risk of missed test results,<sup>2 4 5</sup> they do not eliminate the problem.<sup>2 3 6</sup> Lack of timely follow-up of test results remains a major patient safety concern in most healthcare organisations.<sup>7-9</sup>

Previous work has shown that test result follow-up failures can be traced to ambiguity among providers about responsibility for follow-up,<sup>10-12</sup> perceived 'information overload' among providers who receive large

# National Solution for a National Problem

- Can We Leverage VA Informatics and Computing Infrastructure (VINCI)?
- Facilitates data analysis in a secure environment and serves as both a software development environment and place to store data
- Partners with the Corporate Data Warehouse (CDW) and hosts all data available through CDW



# Partners Influencing A Proposed Intervention

“...CREATE and COIN are transformational; they support not only collaborative researchers but also the VHA managers, or stakeholders, likely to use the results of the research. Researchers and stakeholders work together throughout the course of a study—from the formulation of research questions to the analysis and interpretation of the results. When the research is complete, VHA managers will be poised to use the results to improve practice.”

Sara Knight, PhD, Deputy Director, VA HSR&D  
HSR&D FORUM, August 2013

<http://www.hsrd.research.va.gov/publications/forum/aug13/aug13-6.cfm>

# CREATE Project Background

- Develop and evaluate an automated surveillance intervention based on electronic triggers
  - But who to send lost-to-follow-up test results information to?
- Used a sociotechnical approach to determine what partner sites wanted

# CREATE Partner: VA Network (VISN)12

- Met with VISN Leaders & participating facility representatives
  - Nursing Executive Council, Primary Care Advisory Committee, Health Systems Council, and Quality and Safety Council
- Determined optimal strategies to feed information to the point of care
- Leadership support obtained for designated mid-level provider for tracking at each participating facility

# CREATE Cancer Tracking Intervention

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EHR Data Warehouse

—SQL query→

Trigger positive patients in 5 cancers  
*Includes patients who are lost to follow-up (true positive)  
and those who are not (false positive)*

Research

Data view provided to VISN 12 operations  
personnel (On VINCI servers)

Data Destinations

One Primary Care/PACT facility-level recipient  
(RN/PA/NP) acts upon VINCI reports and  
ensures communication and follow-up\*

Operations

Reports delivered to:

Feedback

Multiple final recipients at each facility  
*e.g. Clinical trackers for each cancer type, PACT providers*

\*Intervention will be remotely monitored by Houston-based researchers throughout the study period

# Journey of Partnership

- From Evidence to Impact in collaboration with VA Partners:
  - Generate evidence to solve a problem (VA National Center for Patient Safety- NCPS)
  - Knowledge transfer (Primary Care Program Office & NCPS)
  - Partnership research (VA Network: VISN 12)
  - Impacting measurement initiatives (Office of Performance Measurement)

# Impacting Measurement

- External Peer Review Program (EPRP): VA's national quality measurement and review program
- Designed to provide all VA facilities with quality of care information obtained via random medical record reviews
- Tasked with creating a VA-wide measurement system for patient notification of test results

# Quality Measurement Program

- Guided by VA policy and informed by the 2012 Communication of Test Results Toolkit
- Reviews evaluate randomly selected facility-level records for timeliness of patient notification of test results according to time periods in VA policy
- Worked with Primary Care Operations and Office of Performance Measurement staff to revise measures to accommodate new policy

# Our Roles

- Determine how measurement should be aligned with new VA policy, including developing an algorithm that defined when the criteria for notification were met
- Influence record review process (i.e. improve accuracy and reproducibility)
- Serve as subject matter experts for implementation of measurement program

# Our Contribution/Impact

- Streamline EPRP chart abstraction algorithms
- Strengthen reliability and validity of measurement through pilot testing and discussion
- Determine which high priority test results could serve as a basis for chart abstraction
- Try to minimize unintended consequences of measurement

# Publishing Journal Papers Not Enough

- Quality & Safety research valuable for delivery system operations that needs solutions
- Research-Operations Partnership a key ingredient for research to lead to impact patient care & policy
- Opportunities for HSR to collaborate w/ operations:
  - generating evidence to solve quality/safety problems,
  - translate knowledge,
  - do research more aligned with the clinical front-lines,
  - impact existing measurement /evaluation programs

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