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College of Physicians and Surgeons

NewYork-Presbyterian

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Diagnostic Error Measures:

For Quality Improvement & Patient Safety Research

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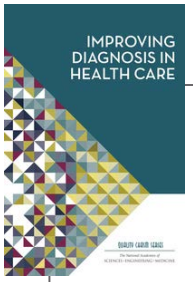
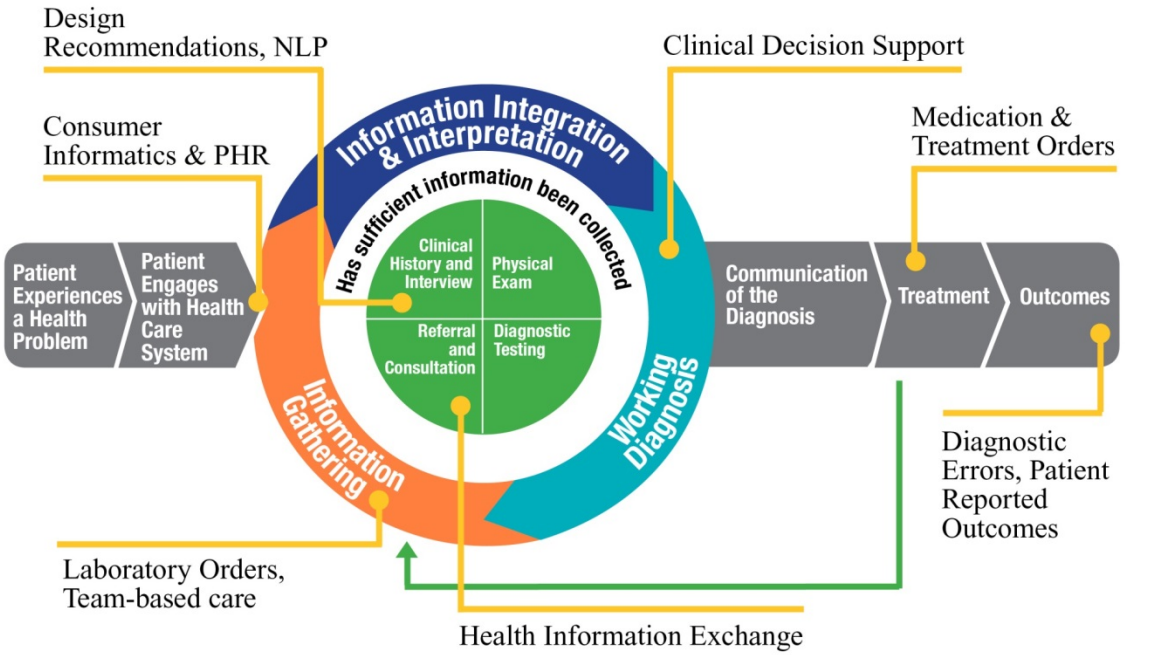
Diagnostic Error Measures

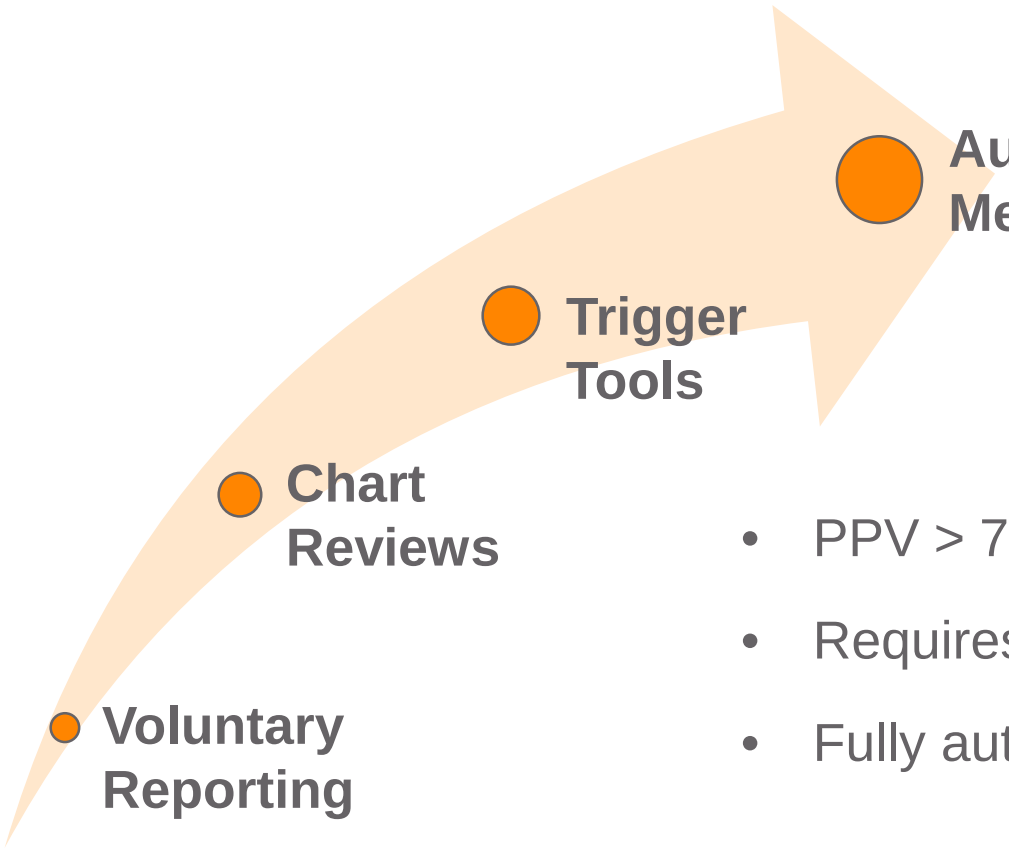


Five purposes for measurement:

1. Establish incidence;
2. Determine causes and risks;
3. Evaluate interventions;
4. Accountability;
5. Education and training.



Types of Patient Safety & Quality Measures



- PPV > 70%
- Requires programming
- Fully automated

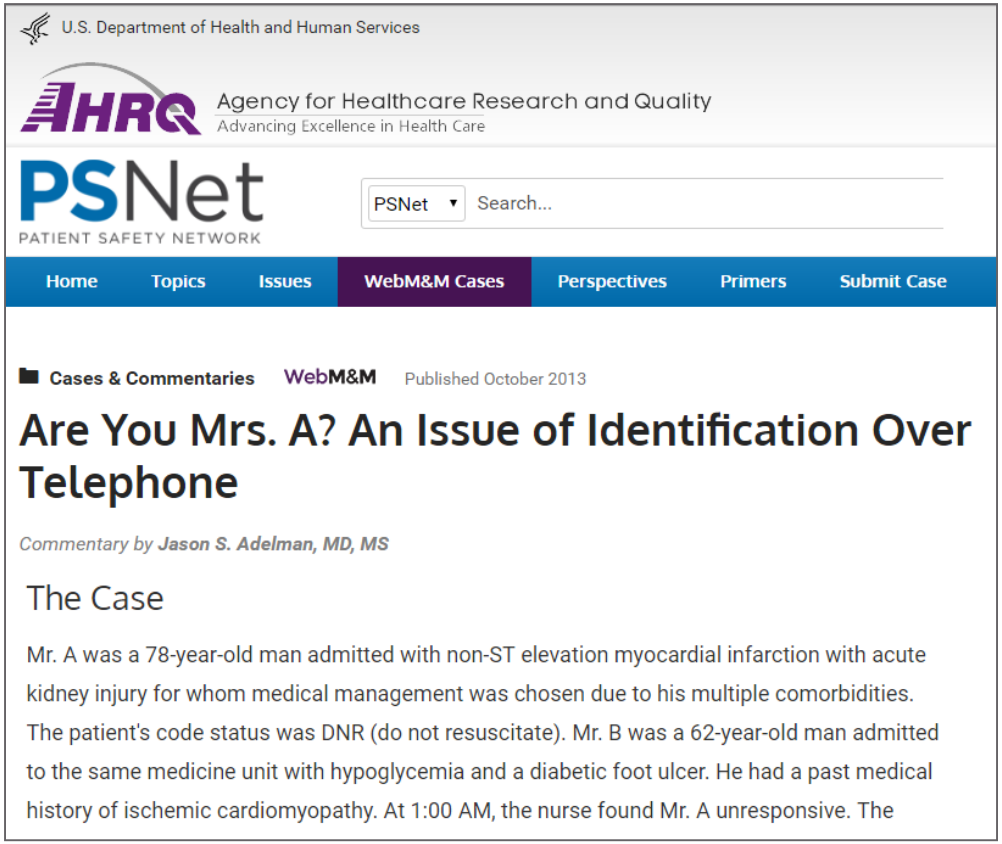
Wrong Patient Errors Leading to Diagnostic Errors

IOM Definition: Diagnostic Error

The failure to (a) establish an accurate and timely explanation of the patient's health problem(s) or (b) communicate that explanation to the patient.

Wrong Patient Errors Leading to Diagnostic Errors:

1) Order tests on wrong-patient
2) Read results of wrong-patient
3) Communicate information to the wrong patient.


U.S. Department of Health and Human Services

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

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Cases & Commentaries WebM&M Published October 2013

Are You Mrs. A? An Issue of Identification Over Telephone

*Commentary by **Jason S. Adelman, MD, MS***

The Case

Mr. A was a 78-year-old man admitted with non-ST elevation myocardial infarction with acute kidney injury for whom medical management was chosen due to his multiple comorbidities. The patient's code status was DNR (do not resuscitate). Mr. B was a 62-year-old man admitted to the same medicine unit with hypoglycemia and a diabetic foot ulcer. He had a past medical history of ischemic cardiomyopathy. At 1:00 AM, the nurse found Mr. A unresponsive. The

Wrong-Patient Error Measures

- Automated Meas
- T
  F
- Chart Reviews
- Voluntary Reporting

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The Use of Patient Pictures and Verification Screens to Reduce Computerized Provider Order Entry Errors

Daniel Hyman, Mariel Laire, Diane Redmond and David W. Kaplan

Pediatrics; originally published online June 4, 2012;

DOI: 10.1542/peds.2011-2984

TABLE 1 Patients Receiving Care Not Intended for Them Because of Erroneous Chart Orders

	Raw Number of Ordering Errors (Orders on Incorrect Patient Chart)	Rate per 1000 Adjusted Patient Days
	12	0.09
	3	0.02
om	75%	77.8%
Other	61 (9.9)	8 (7)

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Retract-and-Reorder Tool Applied to Complete 2009 Data Set

Measured:

- 6,885 retract-and-reorder events in one academic medical center in one year

Validation:

- Called 236 providers shortly after making an RAR event
- 170 true positives; PPV = 76.2%

Estimated:

- 5,246 wrong-patient electronic orders
- 14 wrong-patient electronic orders per day
- 1 out of 6 providers placed an order on the wrong patient
- 1 of 37 admitted patients had an order placed for them that was intended for another patient

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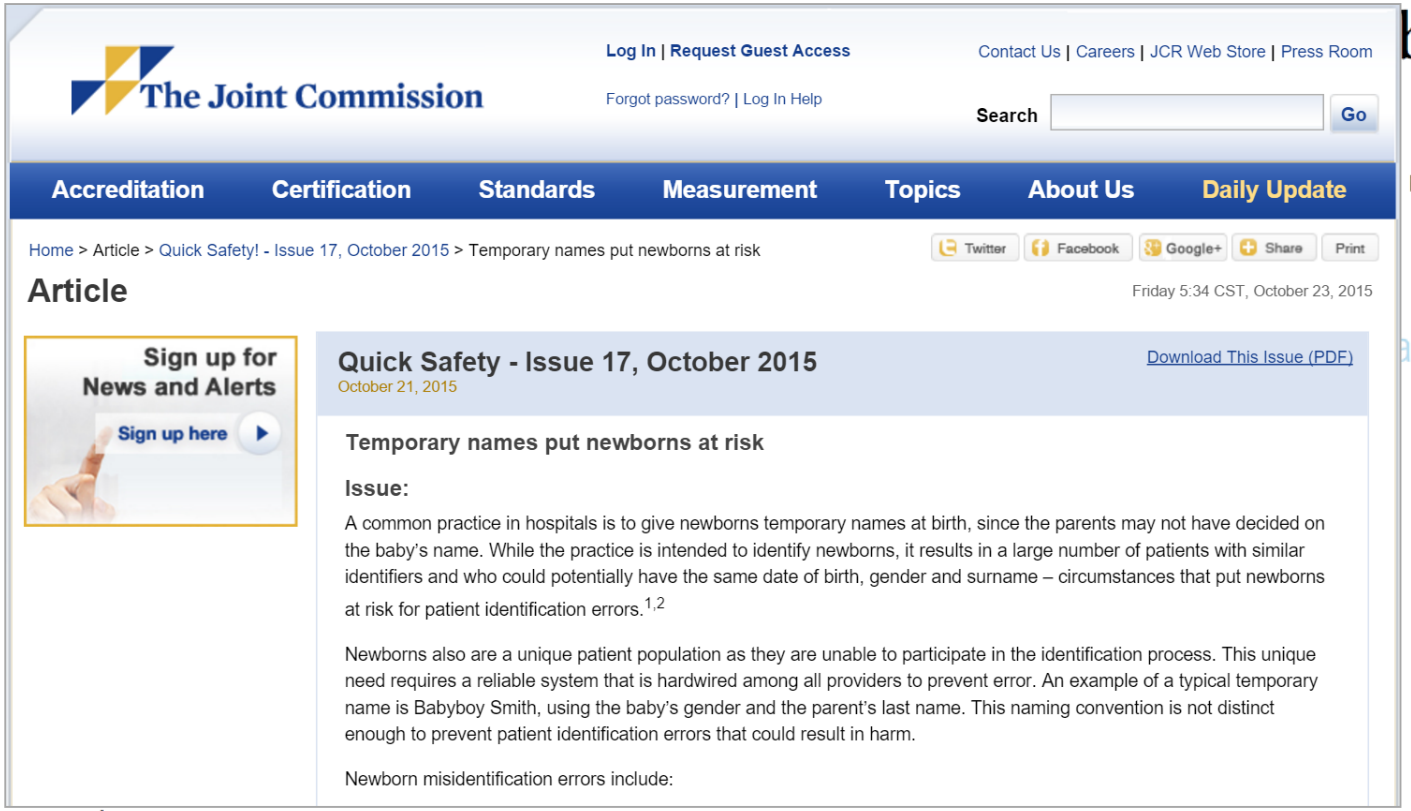

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Article

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Quick Safety - Issue 17, October 2015
October 21, 2015

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Temporary names put newborns at risk

Issue:

A common practice in hospitals is to give newborns temporary names at birth, since the parents may not have decided on the baby's name. While the practice is intended to identify newborns, it results in a large number of patients with similar identifiers and who could potentially have the same date of birth, gender and surname – circumstances that put newborns at risk for patient identification errors.[1,2]

Newborns also are a unique patient population as they are unable to participate in the identification process. This unique need requires a reliable system that is hardwired among all providers to prevent error. An example of a typical temporary name is Babyboy Smith, using the baby's gender and the parent's last name. This naming convention is not distinct enough to prevent patient identification errors that could result in harm.

Newborn misidentification errors include:

minutes.

RESULTS: The reduction in RAR events post- versus preintervention was 36.3%. After accounting for clusters of orders within order sessions, the odds ratio of an RAR event post- versus preintervention was 0.64 (95% confidence interval: 0.42–0.97).

CONCLUSIONS: The study results suggest that nondistinct naming conventions are associated with an increased risk of wrong-patient errors and that this risk can be mitigated by changing to a more distinct naming convention.

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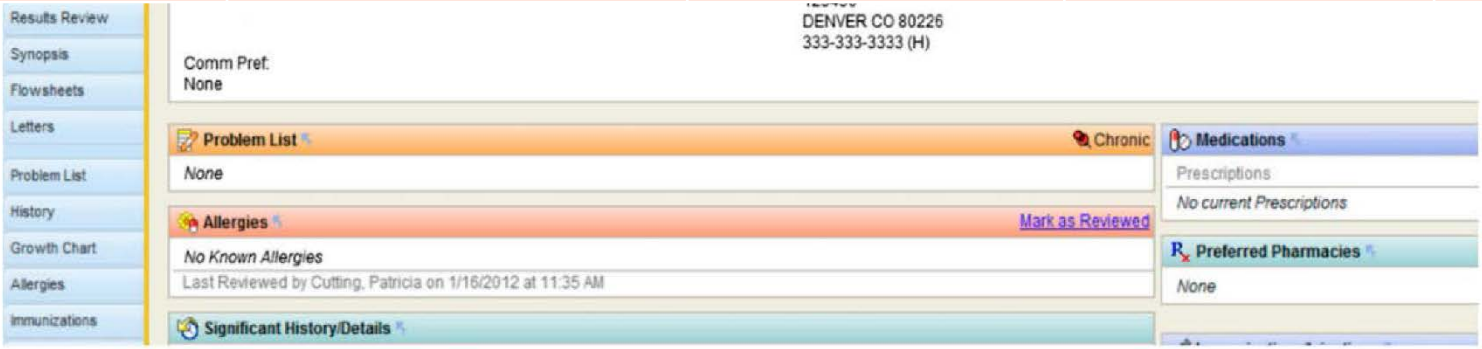
AHRQ Funded Study (R21HS023704)
Assess Risk of Multiple Records Open at Once

	Patient 1	Patient 2	Patient 3	Patient 4	
	Max (3 or More Records)		Hedge (2 Records)	Restrict (1 Record)	Total
Inpatient	38 (41.8%)		16 (17.6%)	37 (40.7%)	91
Outpatient	36 (47.4%)		13 (17.1%)	27 (35.5%)	76
Total	74 (44.3%)		29 (17.4%)	64 (38.3%)	167

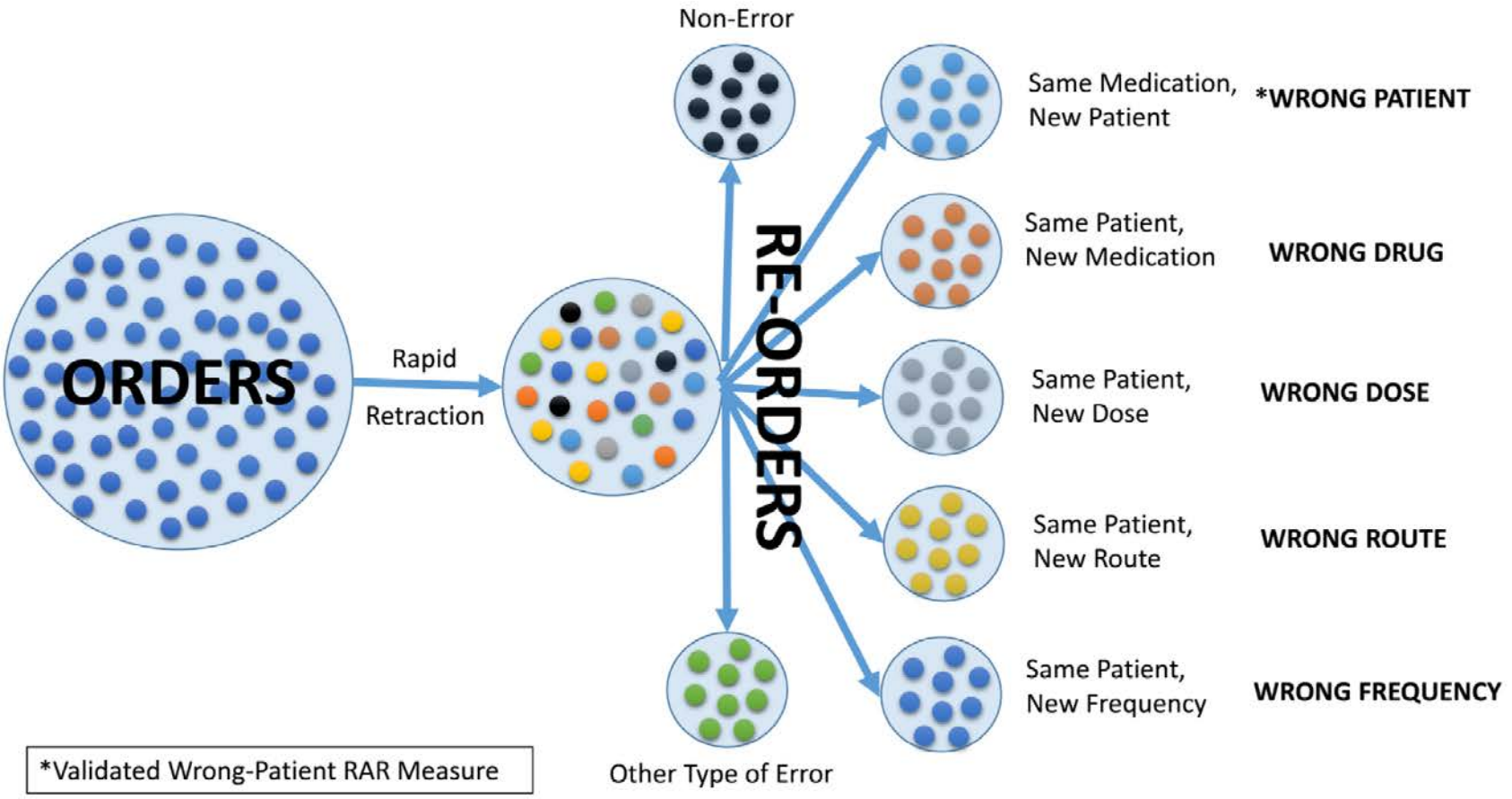


Wrong-Patient Retract-and-Reorder Measure

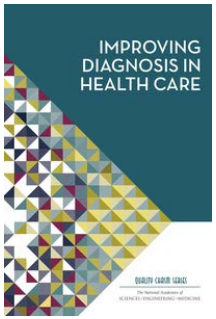
(NQF Measure #2723)

*First Health IT Safety Measure Endorsed by NQF

AHRQ Funded Study (R01HS024538)
Develop New Health IT Safety Measures



Methods for Estimating the Frequency of Diagnostic Errors



Data Source
Postmortem examinations
Chart review
Malpractice claims
Health insurance claims
Diagnostic testing
Medical imaging
Surveys of clinicians
Surveys of patients

Electronic Triggers to Identify Patients at High Risk for Diagnostic Errors

	Primary Care Unplanned Hospitalization	Primary Care Unscheduled Visit
"Red Flag"	PC visit followed by hospitalization within 14 d	PC visit followed by ≥1 unscheduled visit within 14 d
Total N	212,165 visits	212,165 visits
Identified by Trigger, n	1086 visits	14,777 visits
Reviewed, n	674 patients	669 patients
Errors, n	141	36
PPV (95% CI)	20.9% (17.9-24.0)	5.4% (3.7-7.1)

- Singh et al. *BMJ Qual Saf*. 2012;21(2):93–100. Medford-Davis et al. Emerg Med J. 2016;33(4):253–9.

Electronic Triggers to Identify Patients at High Risk for Diagnostic Delays

	Lung Cancer	Prostate Cancer	Colon Cancer
Trigger	Chest x-ray or CT scan flagged by radiologist as "suspicious for malignancy"	PSA 4.1–15 ng/mL & no PSA ≥4.1 in prior 2 y	Positive FOBT
Total N	208,633	292,587	291,773
Identified by Trigger, n	655	426	355
Reviewed, n	400	426	78
Lacked follow up, n	242	299	52
PPV (95% CI)	61% (55.5-65.3)	70.2% (65.7-74.3)	66.7% (55.6-76.2)

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- Murphy DR, et al. *Chest*. 2016;150(3):613–20. Murphy et al. *BMJ Qual Saf*. 2014;23(1):8–16.
- Murphy et al. *BMJ Qual Saf*. 2014;23(1):8–16.