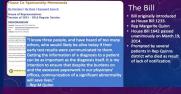
## Augmenting Patient - Radiologist Communication Through Government Mandate: Initial Results from an Implementation to Address the Patient Test Result Information Act A E Flanders, MD; A C Zoga, MD; C G Roth, MD, MS; S P Deshmukh, MD; P Lakhani, MD; C Tomlinson; VM Rao MD.

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## The Obstacle...

 Patient Test Result Information Act 112 signed into law by Governor Tom Wolf on 10/24/2018 • Word began to filter to the medical community by end of month

 All radiology practices were given 60 days to develop a solution

 No commercial solution in existence to "help" solve the problem

#### The Specific "Ask" ..

 Beginning <u>December 23, 2018</u>
 Notify patients of significant abnormality for outpatient
 By mail, email, EMR or FAX
 Within 20 days from release of results to provider.
 Provide notification that includes: mality for outpatient imaging services

- ovide notification that inclu Name of ordering provide Test date
- Date results were sent to ordering provider
- Date results were even This verblage this notice as a result of a determination by your dispositic imaging to use receiving that notice as a result are service and would be beneficial service that further discussions of your test results are warranted and would be beneficial to the service that further discussions of your test results are warranted and would be beneficial to the service that further discussions of your test results are warranted and would be beneficial to the service that further discussions of your test results are warranted and would be beneficial to the service that further discussions of your test results are warranted and would be beneficial. service that jartiset varicosions of y for you. • The complete results of your test or tests, have been or will be sent to the health care practitioner that ordered the test or tests. It is recommended that you contact your h are counted on the counter of your possible.

practitioner that ordered the test or tests. It is recommend care practitioner to discuss your results as soon as possible <u>NO REPORT REQUIRED – NO DETAILS</u>

### Exceptions..

 Radiographs Routine obstetrical ultrasounds Mammography

ED or Inpatient imaging services

## The Challenge for Our Organization

- November by the time a strategic group could be convened.
- Holiday preparation low motivation to tackle new projects by our own IT staff.
- In middle of a merger of 14 hospitals, no common IT infrastructure
- A major upgrade to our EMR planned for that time.
- Full IT integration plans in various stages of flight. • No commercial solution available.

## **Technical Considerations**

 How to identify exams that meet the PA112 criteria?

MyCharl

- Manual process Radiologists? Automated process.
- How to communicate with patients? · Epic My Chart

• FAX





compliance

Most Common Approach

#### **Our Strategy** TIL

 Mixed environment Not all patients have EHR access Not all patients are TJUH patients • Not all patients have access to FAX/email Various joint ventures we provide services for but providers or patients may not be part of our health system.

#### Administrations Argument

- Use EMR to broker communication • Flag reports with a token inserted by rads Develop build in EMR to recognize token · Alert ordering provider via in-box message
- · E-message to patient via portal · Copy of message permanently stored in EMR. Disadvantages:
- Build required / less than 60 days available Does not address patients out of EMR workflow
- Relies on Radiologist to "flag" reports / compliance will vary

## **Our Objectives**

- Single common solution • Focus on Reporting not RIS.
- Reliable Minimize burden on Rads
- Address heterogeneity of our practice
  Meet or exceed criteria set by PA112
- Rely on conventional mail (for now) Our reporting vendor proposed elegant solution



## Belt & Suspenders Approach

- Belt: Use advanced NLP engine to "search"
- reports for key elements related to: Critical findings
- Relevant follow up Recommendations for follow-up within 90 days.
- Suspenders: Standard set of macros/tokens
- inserted at discretion of radiologist that will automatically generate a letter (safety net).

#### **Reporting Vendor Solution**

· Build solution into our reporting system as this is the common IT solution for our entire heterogeneous practice. Build a custom solution using a variety of COTS Nuance products: PS360 v4.0, mPower NLP tool and Lung Cancer Screen Follow-up Manager.

#### Macros Developed (suspenders)

• COMMUNICATION {CRITICAL}: • COMMUNICATION {URGENT}: COMMUNICATION {FOLLOW UP}: COMMUNICATION {LETTER}:

#### Under the Hood COTS strategy – repurpose LCS tool.

 Lung Cancer Screening tool filters were modified to meet PA112 criteria Exam types broadened • Exam types to exclude (e.g. radiographs, procedures, mammo etc. Patient location (outpatient only) Findings broadened • Follow up interval (<90 days only) when specified • "Trigger" macros included

#### Need Precision To Identify Appropriate Exams Reduce false positive "noise" -mPower CR

 Remove Lung Cancer Screening patients Remove recommendations from Mammo exams. Remove OB US exams Remove short-interval IP exams Remove hedged recommendations Remove non-specific recommendations Filter by type of finding

#### Workflow

RMRS

- Final reports filtered by PA112 criteria captured to a worklist for management. • Normally this would be a follow-up endation managemer Instead, this list triggers a print queue which creates a templated letter containing the "key" fields – required by the legislation A clerk manually triggers the print queue to a local printer once/twice a day. @ 20 letters/day
  Stuffed in envelopes and dropped in daily mail.
- Workflow mPowe NLP Relt & Sus

## Are you kidding? Snail Mail? Ideal delivery mechanism would be electronic with confirmation (return

- receipt). Needed a reliable mechanism to deliver communication that would work for our
- Mailing address most readily available.
   PHR participation, email and FAX information
- spotty. Receipt of information not required by the
- legislation.
   Audit queue capable

#### Results

- Program began on schedule (< day 20 after 12/23/2018).</li>
- @690 letters mailed to date @ 10/day 61,783 reports passed through system
- 43.132 were not relevant to PA112
- 15.528 candidates no recommendations or macros 3.123 (5%) contained a recommendation
- 372 met criteria for PA112 (12% of recs) 2751 excluded from PA112 (88% of recs)
- 9 FP (Type 1 error) and 2 FN (Type 2 error)

#### Observations

- For follow up recommendations alone Radiologists triggered a letter more frequently [@3x] (using manual method) than NLP tuned to
- PA112 requirements. Suggests that either radiologists don't
- understand/recall the PA112 requirements or
- are have a lower threshold for sending a letter. Increased "awareness" of the campaign.

#### Minor bumps in the road....

#### No patient address

- Multiple accessions for exam = multiple letters Recommendations baked into reports (e.g.
- Venous ultrasound)
- Recommendations in procedures

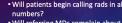
### Legitimate Concerns?

• Will patients absolutely freak out? Will patients begin calling rads in alarming

63

Will referring MDs complain about the





extra calls from patients?



# The Punishment

- PRS and others lodged complaints stating hardship - no technical solutions readily available
- Amendments made to Bill now allows a one year grace period (2020) to achieve compliance. • DOH will audit practices.

**Jefferson** 

- DOH will open a complaint site for patients.
- No stipulated penalties as of yet. • No idea what the legal community is planning

#### Modifications for 2019 Provide reports with letter

it is necessary.
May catch on in other states.

Communication With Patients

Provide patient access to Radiologists

Store copy in EMR (when applicable)

Expand criteria to include all exam types

Improving Patient Communication

Fundamentally this law mandates an improved communication cycle with the patient.
 Opens door for direct radiologist-patient interaction.
 Enhances our value/role in continuum where we are an
 This law doesn't go far enough:
 Should include All teams in NPAT and ED setting
 Should include all instances when follow-up is needed.
 Patients should get copy of report with letter
 Patients should ask to cap if the set to and if they feel

How Radiologists Can Benefit From Direct

How Radiologists Can Benefit From Direct

To understand the direct impact of radiologists' day to day work.
 To derive a greater sense of purpose and job satisfaction
 To help prevent radiologist burnout
 To broaden radiologist' clinical understanding of the disease

processes they image • To improve the clarity, accuracy and overall impact of radiologists'

reports To reinforce imaging follow up recommendations To strengthen relationships with referring physicians regarding shared patients To increase the visibility of the speciality To solidify radiologists' role as vical members of the healthcare

Selective data mining – study trends & behaviors
 Look for opportunities outside of PA112 criteria to inform patients and forge relationships
 Majority of work is radiography – lots of opportunity for indeenal findings for follow- and INPAT population.
 Temendous opportunity for ED and INPAT population.
 Better understand fi NLP can serve as a stand alone for

Better understand II NLP can serve as a stand alone for informing patients.
 Product enhancement – baked into front end of product Better understand If implementation of law has changed Radiologists behavior for initiating communication.
 Examine radiologist recommendators before and after

**Communication With Patients** 

team

Future Work

DIAGNOSTI

Expand criteria to all patients incidental findings