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2023

## GUIDE2LABS: Integrated Patient Education in Epic

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### Recommended Citation

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# **GUIDE2LABS: Integrated Patient Education in Epic**

COLCHESTER FAMILY MEDICINE

JARED STONE, MS3

JULY - AUGUST 2023

MENTORS: DRS. ALICIA JACOBS & SEAN MALONEY

# Problem Identification

- The 21st Century Cures Act federally mandates immediate release of progress notes, laboratory test results, and radiology/pathology reports to all patients' electronic health record (EHR) portals
- A prior family medicine clerkship project noted that patients often experience unnecessary anxiety when viewing their lab results before a provider can connect with them to provide reassurance and/or next steps, when necessary
- The project designed a pamphlet with high-yield facts to help patients interpret common lab results, though it was not distributed due to time constraints
- The author suggested that future efforts be directed toward directly embedding learning materials into the EHR for easier and more widespread distribution
- AHEC Focus Areas: Medical Practice Transformation, Interprofessional Education

# Public Health Cost

- According to a 2021 study published in *JAMIA*, the number of in-basket messages from patients had increased to 157% of the pre-pandemic average
  - Each additional patient message was associated with a 2.32-minute increase in clinician time spent in the EHR per day
- Johns Hopkins Medicine and the Cleveland Clinic have begun billing for select EHR messages when the response “require[s] medical expertise and more than five minutes of your clinician’s time”
  - Replying to messages about lab results could feasibly surpass this threshold
  - Out-of-pocket costs for an individual patient can range from \$15-50 per message



# Community Perspective

- Triage Nurse
  - Q: What are some common questions you triage from patients regarding their lab results?
    - A: "They want to know if their results are normal, or abnormal, and what they should do to improve their results for next time. E.g., 'How do I improve my cholesterol?'"
  - Q: Would a SmartPhrase (aka dot phrase) that helps patients interpret frequently ordered labs be helpful in your work?
    - A: "Triage does often use dot phrases, which may be helpful for these conversations. Triage can only generally discuss normal labs without speaking to the provider."
- Patient D.D., age 57
  - Q: What are your thoughts on having immediate access to your MyChart lab results?
    - A: "I like to know where I'm at. I want to know what the [results] are and what I need to do if something needs to be done."
  - Q: Would it be helpful if a nurse was able to send you information on interpreting your labs instead of waiting for a follow-up from your provider?
    - A: "That would be helpful. I come from a family of nurses. I trust nurses and what they see in interpreting the results."

*Respondents elected to have their quotes included anonymously*

# Intervention and Methodology

- An Epic SmartPhrase was created using much of the existing verbiage from the pamphlet produced in a prior community improvement project
  - Language was abridged and edited for conciseness, clarity and grammar
- The SmartPhrase was named "GUIDE2LABS" with a stated purpose of "Patient education on interpreting CMP [complete metabolic panel], lipids and A1c results"
- It was shared with Dr. Sean Maloney, Medical Director and Site Leader at Colchester Family Medicine, to make the SmartPhrase available for all users associated with the facility
- While targeted for use by triage nurses, an e-mail was sent to all clinic staff notifying them of the new SmartPhrase along with encouragement to use it when sending MyChart responses to patients who inquire about their lab results

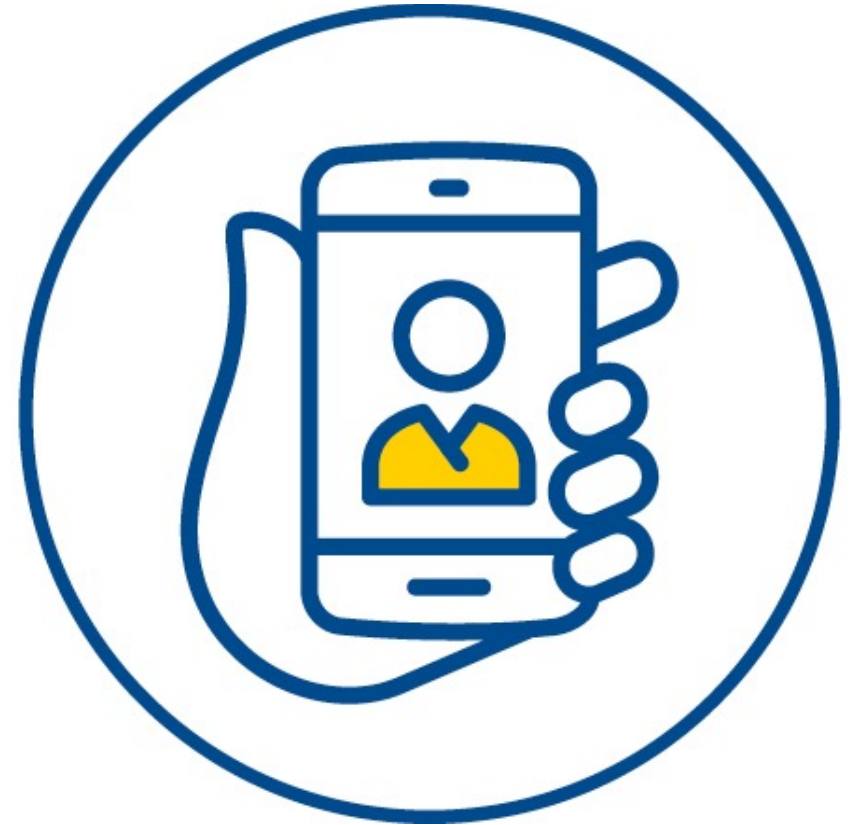
# Results

- The project timeline did not allow for a thorough measurement of the SmartPhrase implementation
- **What could have been done:**
  - Tally how many messages between triage staff and patients included the SmartPhrase over a 2-week period
  - Tally how many of those encounters were subsequently closed instead of being routed to a provider
  - Compare to counts of all messages and all routed encounters for a 2-week period before the SmartPhrase was created



# Evaluation and Limitations

- Expectations of effectiveness
  - The total number of incoming messages from patients would likely NOT change...
  - However, more messages would be anticipated to include the SmartPhrase information at triage
  - *Therefore, the number of messages being routed to providers regarding lab values would meaningfully decrease*
- Limitations
  - Patients often send messages for questions other than interpretation of lab results
  - The SmartPhrase only covers a select few labs
  - Patients may still ask to hear from their provider directly even when the SmartPhrase information is provided to them





# Future Recommendations

- Create SmartPhrases which cover information on other frequently ordered tests
  - E.g., CBC with differential, thyroid cascade, iron studies, urinalysis
- Integrate the information in patient handouts as part of the After Visit Summary
  - Automated linking of the handouts whenever a lab test is ordered could also be explored
- Add links to quality, evidence-based resources into the SmartPhrase for patients who are interested and motivated to take a deeper dive into their results
- Expand survey population to ask providers what information about lab values would be most helpful for them to have available in a SmartPhrase
  - While GUIDE2LABS can be utilized by providers as written, it is feasible that more nuanced information exists (or which they already share with patients) which would be useful to have readily accessible in an updated SmartPhrase

# References

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# Epic SmartPhrase "GUIDE2LABS"

User SmartPhrase – GUIDE2LABS [417556]

Do not include PHI or patient-specific data in SmartPhrases.

When viewing lab results on MyChart, the most important thing to understand is that our office will call you if there is anything requiring urgent follow-up. For non-urgent abnormalities, we will send you a message on MyChart and discuss potential next steps during an office appointment. Most borderline results are also not of concern and can be addressed at your next appointment.

Note that although all abnormal results are marked in MyChart, in practice only a select few results need to be urgently addressed. Most patients with reassuring lab results will still have a few values marked as abnormal.

The goal of the following information is to explain common lab findings and what they mean. These are quick explanations to give you a general sense of what your provider might see in these tests. They are **not** comprehensive for all possibilities for why a lab value is marked as high or low. Bring any additional questions with you to your next visit for your provider to review.

**Metabolic Panel**

- Sodium (Na+): Most cases of slightly low or elevated sodium are related to hydration and are not worrisome.
- Potassium (K+): Most cases of borderline low or elevated potassium are related to medication side effects. Significant elevation above 6.0 can lead to heart rhythm problems.
- Creatinine: This is a measure of kidney function. Lower is better, even if marked as out of range.
- Calcium: Typically related to hydration, medication side effects, or your parathyroid gland function. Borderline low or high levels are usually not of concern.
- Chloride: Related to hydration and only useful information in select cases.
- Anion gap (AG): Mildly low or high anion gaps are common and not of concern.
- Bicarbonate/carbon dioxide (CO2): Changes can be related to dehydration or oxygen levels, especially if you have asthma or COPD. This rarely needs to be addressed urgently.

**Cholesterol / Lipid Panel**

- Total Cholesterol: Not the ideal value to look at to monitor your cholesterol levels. This is a calculated number using both your "good" and "bad" cholesterol, thus it may be elevated simply by having a lot of "good" cholesterol.
- LDL: "Bad" cholesterol - think L for lousy. When a provider says you have high cholesterol, this usually refers to your LDL. High LDL increases your risk of heart attack and stroke and thus is monitored closely. Regular exercise and a low-fat diet can decrease your LDL. Consistent elevations may warrant starting a statin medication after a discussion with your provider. Elevated LDL is not an emergency.
- HDL: "Good" cholesterol - think H for happy. High HDL can decrease your risk for heart attack and stroke. High HDL can be marked as abnormal on MyChart, but is actually a positive finding in your favor.
- Triglycerides: This is most affected by diet, exercise and weight. Unless >500, most providers will choose to discuss lifestyle changes as first-line treatment. This value is less related to heart attack and stroke and more likely to cause liver inflammation over time, if not addressed.

**Diabetes**

- Hemoglobin A1c: Allows you and your provider to monitor if you have type 2 diabetes. It reflects your average blood sugar over the *past three months*. 5.7-6.4% represents prediabetes, which means you are approaching diabetes but not there yet. This stage focuses on control of diet and exercise. >6.5% represents diabetes and warrants a discussion of medication if diet and exercise alone are not effective. If you already have a diagnosis of diabetes, 6.0-7.0% is a typical target A1c range.
- Glucose: If elevated, this is what is meant by saying you have "high blood sugar." This may be high with diabetes, though A1c is a better test overall. Glucose is usually checked when fasting, so an elevated glucose could be simply from having a meal before your blood draw. Low glucose levels plus recent dizzy spells warrants a call to our office.