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## Patient Pamphlet for Basic Lab Values

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# Lab Education Pamphlet

Colchester Family Medicine

Robert Adamian

November 2022

# Problem Identification

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As a result of lab results being immediately available to patients online, many patients experience unnecessary anxiety when viewing their results before speaking with the doctor and before the doctor has a chance to reach out to them about their results



One patient I spoke to had an A1c of 5.7 9 years ago, and her repeat A1c this year was again 5.7. However, EPIC began highlighting this value in red because it was in the prediabetic range. This red highlight cause the patient significant concern and she messaged the office. When she was unable to receive communication immediately, she had an anxiety episode and required more anxiety medication in the short term.



AHEC Focus: Connecting communities, virtual learning, current and emerging health issue

# Public Health Cost

Since healthy systems began actively promoting portal use, EPIC reports a 151% increase in MyChart messaging.

Volume of MyChart messages are becoming so great that Cleveland Clinic is now charging \$50 per MyChart message.

One physician that was interviewed reported spending up to 2 hours daily responding to MyChart messages after returning home from clinic



# Community Perspective

- “The most important thing a healthcare provider can do to minimize patient anxiety regarding lab results is explaining why the labs are being ordered in the first place. Patient’s should be told that if there are concerning results, the doctor will contact them.”
    - Linda Tilton Certified Diabetes Educator
  - Dr. Ben Clements, a family medicine physician at Colchester – Family Medicine, emphasizes the importance of preventative health discussions with patients, including dietary changes and exercise.
  - When asked if EPIC provides patients with enough informative material to understand lab results, Dr. Ben Clements stated “Its not just about having enough material, but the right material that can encourage patients to increase their activity level and focus on prevention”
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# Intervention and Methodology

- A double-sided pamphlet was made with quick high yield facts about lab data.
- The front of the pamphlet acknowledges that receiving lab data marked by EPIC as abnormal can be anxiety inducing.
- However, it goes on to identify the goal of the pamphlet: to ease patient anxiety and bridge the time between receiving their results and communicating with the doctor.
- The back of the pamphlet is 3-sided and discusses a basic metabolic panel, lipid panel, and A1c/glucose/diabetes lab values.
- The ideal scenario would be that when ordering labs for patients, a discussion would be had regarding why the labs are being ordered, possible results to expect, informing the patient that they will be contacted if abnormal results are present, along with distributing this pamphlet as a means for education that can ease anxiety before they are able to speak to their physician.
- The pamphlet could also be distributed to patients in the waiting room, and as a part of their after-visit summary documentation.

# Results

- Given the lack of extended time during this rotation, the pamphlet was not handed out to patients and its results could not be measured.
- With more time, we would distribute the pamphlet to patients and we would expect:
  - Less MyChart message volume related to lab questions.
  - Less provider time spent answering MyChart messages regarding lab values.
  - Less anxiety for patients about labs
  - Patients would feel more in charge of their health
  - Stronger relationship with patient and provider.
  - Patients would come to appointments more knowledgeable about labs and thus be more prepared with questions.

# Evaluation of Effectiveness and Limitations

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- Measure MyChart message volume in the months following pamphlet distribution. We would compare this to the volume of messages from before pamphlet distribution.
  - We would specifically measure the volume of messages regarding inquiries about lab values covered in the pamphlet.
- Survey patients in terms of their anxiety level regarding lab values before and after receiving the pamphlet.
- Survey patients about their confidence in interpreting lab values before and after receiving the pamphlet.
- Survey providers about how much time on average they spend answering MyChart messages regarding lab values before and after pamphlet distribution.



# Future Interventions

- Future projects should dive deeper into other common lab values, for example a CBC or urinalysis.
- Engage in discussions with patients about what can be done to ease concerns about lab values in-between receiving them and speaking to physicians.
- Create different levels of pamphlets in terms of depth of explanation of lab values. Some patients might be interested to learn more advanced information.
- Create learning materials that are directly embedded into EPIC for easier distribution.

# References

- Vartabedian, B. (2021, October 21). *MyChart Messages the Wild West of Patient Communication*. 33charts.com. <https://33charts.com/mychart-messages-the-wild-west-of-patient-communication/>
- Dyrda, L. (2022, November 15). *Cleveland Clinic to bill up to \$50 for MyChart messages*. beckerhospitalreview.com. <https://www.beckershospitalreview.com/healthcare-information-technology/cleveland-clinic-to-bill-up-to-50-for-mychart-messages.html>

# Pamphlet

## Guide to Basic Lab Values

### Background

Many patients experience unnecessary anxiety when they see their lab results on MyChart. Most of the calls/messages we receive from patients are regarding lab values that are not concerning at all!

The most important thing to understand when receiving your lab values is that your doctor will call you if there is anything urgent. If there are nonurgent abnormalities, we will send you a message on MyChart and discuss potential next steps during your office appointment.

### Values

The computer highlights all abnormal results in red, making them look scary, but in reality only a select few of these results need to be urgently addressed. Most patients with good lab results will still have a few values highlighted in red. Please do not be alarmed by this!

Except for a few exceptions discussed later, most borderline results are not anything to be concerned about and can be addressed at your next appointment.

### Goals

Our goal with this pamphlet is to explain common lab findings and what they mean. We hope this can help reduce patient anxiety levels and help keep them informed until their next office visit!

### Important

The descriptions on the next page are just quick explanations of lab values to give you a general sense of what your doctor is checking these for and ease some of your concerns. These descriptions are not meant to cover every possible explanation for why a lab value might be high/low. Your doctor will go into further detail at your next visit and answer all your questions.



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## Metabolic Panel

- **Sodium (Na<sup>+</sup>):** it can be common for patients to have slightly low/elevated Na<sup>+</sup>. Most cases are not worrisome and are related to hydration.
- **Potassium (K<sup>+</sup>):** most cases of borderline low/elevated K<sup>+</sup> are due to medication side effects and can be addressed at your next visit. Significant elevation of K<sup>+</sup> (usually above 6.0) can lead to heart rhythm problems. If this applies to you, your doctor will contact you.
- **Creatinine:** this is a measure of kidney function, lower is better (even if it is highlighted in red)!
- **Calcium:** related to hydration and medication side effects. Can also be due to your parathyroid glands. Slightly high or low calcium levels are usually not concerning and can be discussed at your next visit.
- **Chloride:** related to hydration. Only useful in rare cases.
- **Anion gap (AG):** many patients have mild high/low AG that are not concerning.
- **Bicarbonate/Carbon Dioxide (CO<sub>2</sub>):** fluctuations can be related to dehydration or oxygen levels (if you have asthma or COPD). Rarely does this need to be addressed urgently.

## Cholesterol (Lipid Panel)

- **Total Cholesterol:** this is not the ideal value to look at to monitor your cholesterol levels. It is calculated using both your good and bad cholesterol and thus may be elevated simply because you have a lot of good cholesterol. Most doctors prefer to look at your HDL and LDL instead.
- **LDL:** L for lousy! This is your bad cholesterol. When doctors say you have high cholesterol, they are usually referring to your LDL. High LDL levels increase your risk of heart attack and stroke, and thus are monitored closely by your doctor. Exercise and low fat diet can decrease your LDL. However, if still elevated, your doctor may consider starting you on statin medication. Elevated LDL values are not an emergency and can be addressed safely at your next appointment
- **HDL:** H for Happy! This is your good cholesterol. High values can decrease your risk of heart attack and stroke. Note that if this value is high, the computer might still mark it in red, which looks scary but is actually a good thing in this case!
- **Triglyceride:** your triglyceride is your cholesterol value that is most affected by diet, exercise and weight. Unless the value is above 500, most doctors recommend lifestyle changes as mentioned. Triglyceride is less related to heart attack/stroke and more likely to cause inflammation of your liver over time.

## Diabetes/Glucose/Sugar

- **Hemoglobin A1c:** this is the value doctors use to monitor if a patient has diabetes. It reflects your average blood sugar over the past 3 months. 5.7 to 6.4 reflects prediabetes, which means you are approaching diabetes but not there yet. At this stage, your doctor will focus on controlling your diet and exercise. Above 6.5 means you are in the diabetic range, and if diet and exercise cannot control your diabetes alone, your doctor might consider medication. Target A1c for someone who already has diabetes is 6-7.
- **Glucose/sugar:** this may be elevated if you have diabetes, however A1c is a better diabetes test. Glucose is usually checked when fasting, so if you had something to eat before your blood was drawn, that would explain an elevated glucose. If your fasting glucose is not on target, do not be alarmed, your doctor will discuss with you at your next visit. If your glucose is low and you have been having dizzy spells, contact us.