

**Choosing Labs Wisely:**  
Using the EPIDEM model to  
reduce unnecessary Daily  
laboratory testing at ECU Health  
System

*Pranaya Pakala*

**ECU Health Quality  
Improvement Symposium**

**February 1, 2023**



# Choosing Labs Wisely





**HAVE  
YOU  
LOST  
YOUR  
DAMN MIND.**



# Unnecessary Lab Testing

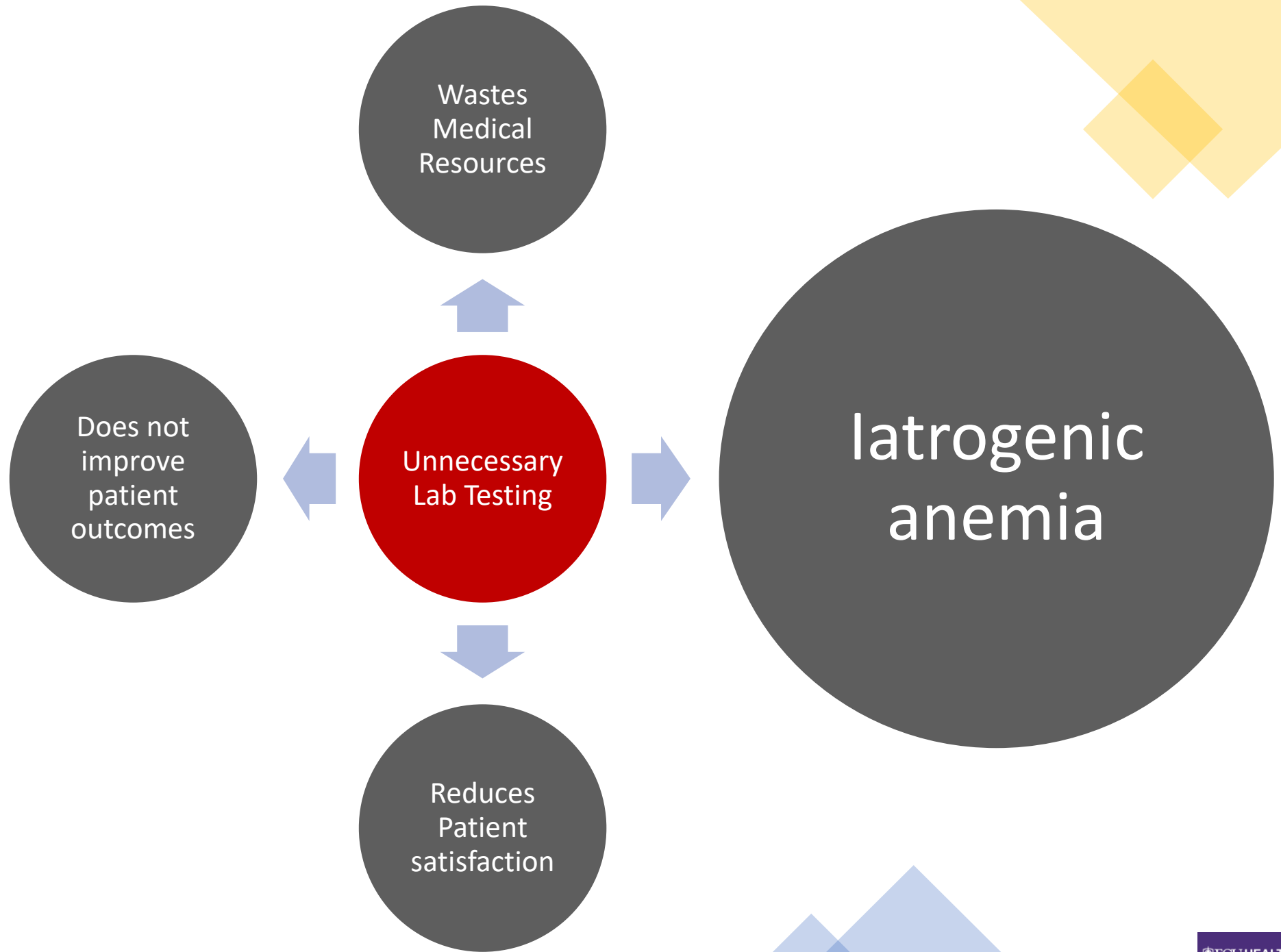
Does not  
improve  
patient  
outcomes

Wastes  
Medical  
Resources

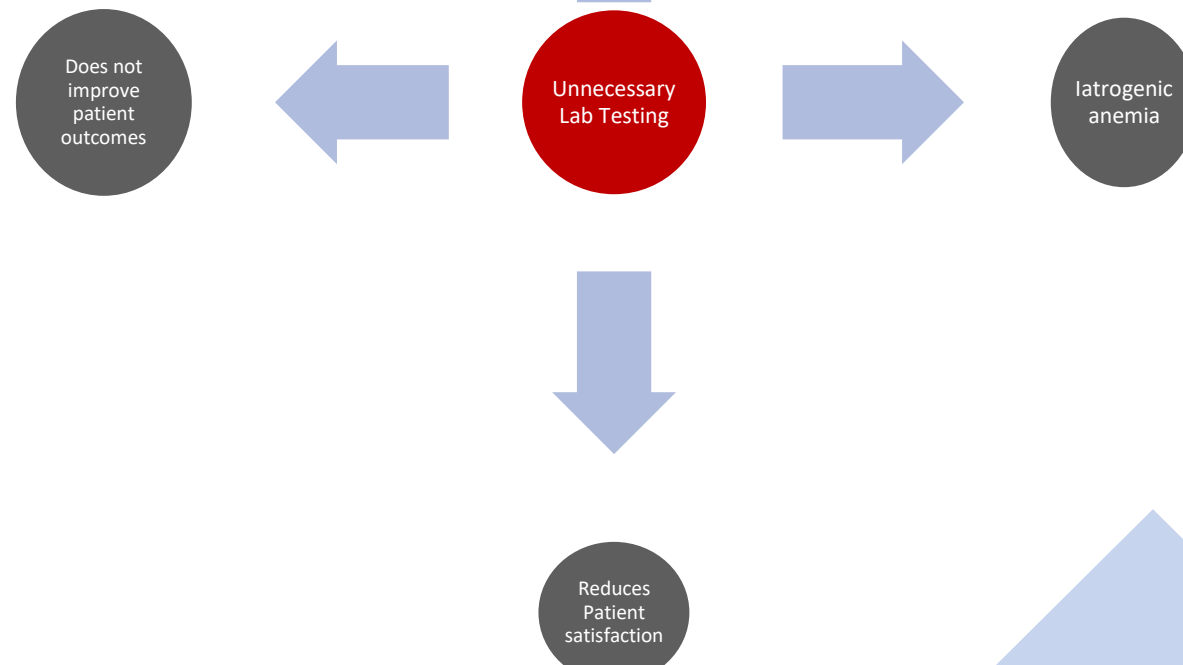
Unnecessary  
Lab Testing

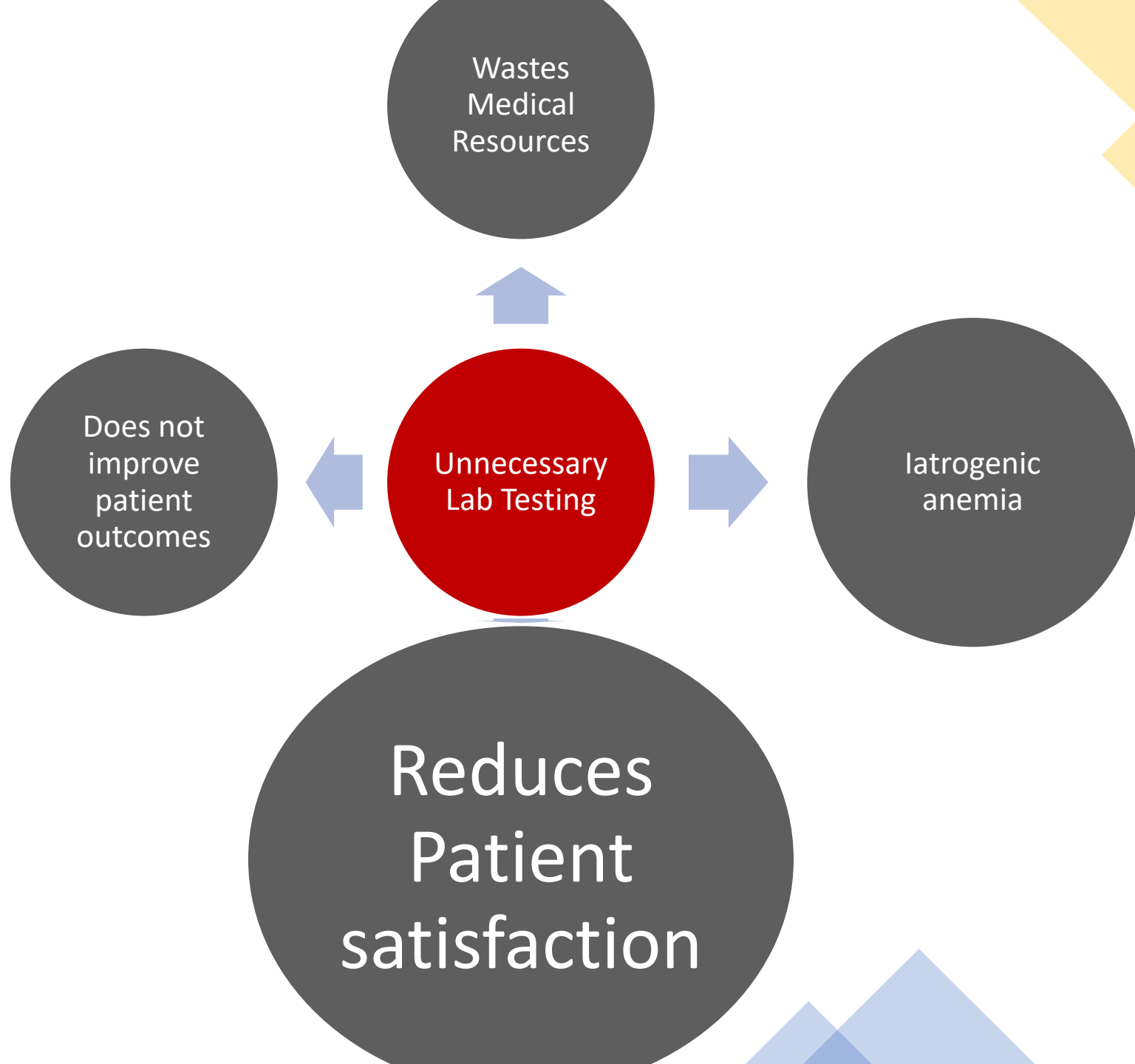
Iatrogenic  
anemia

Reduces  
Patient  
satisfaction



# Wastes Medical Resources





# Unnecessary Lab Testing

Does not improve patient outcomes

Wastes Medical Resources

iatrogenic anemia

Reduces Patient satisfaction



## Five Things Physicians and Patients Should Question

### 1 Don't order diagnostic tests at regular intervals (such as every day), but rather in response to specific clinical questions.

Many diagnostic studies (including chest radiographs, arterial blood gases, blood chemistries and counts and electrocardiograms) are ordered at regular intervals (e.g., daily). Compared with a practice of ordering tests only to help answer clinical questions, or when doing so will affect management, the routine ordering of tests increases health care costs, does not benefit patients and may in fact harm them. Potential harms include anemia due to unnecessary phlebotomy, which may necessitate risky and costly transfusion, and the aggressive work-up of incidental and non-pathological results found on routine studies.

### 5 Don't perform repetitive CBC and chemistry testing in the face of clinical and lab stability.

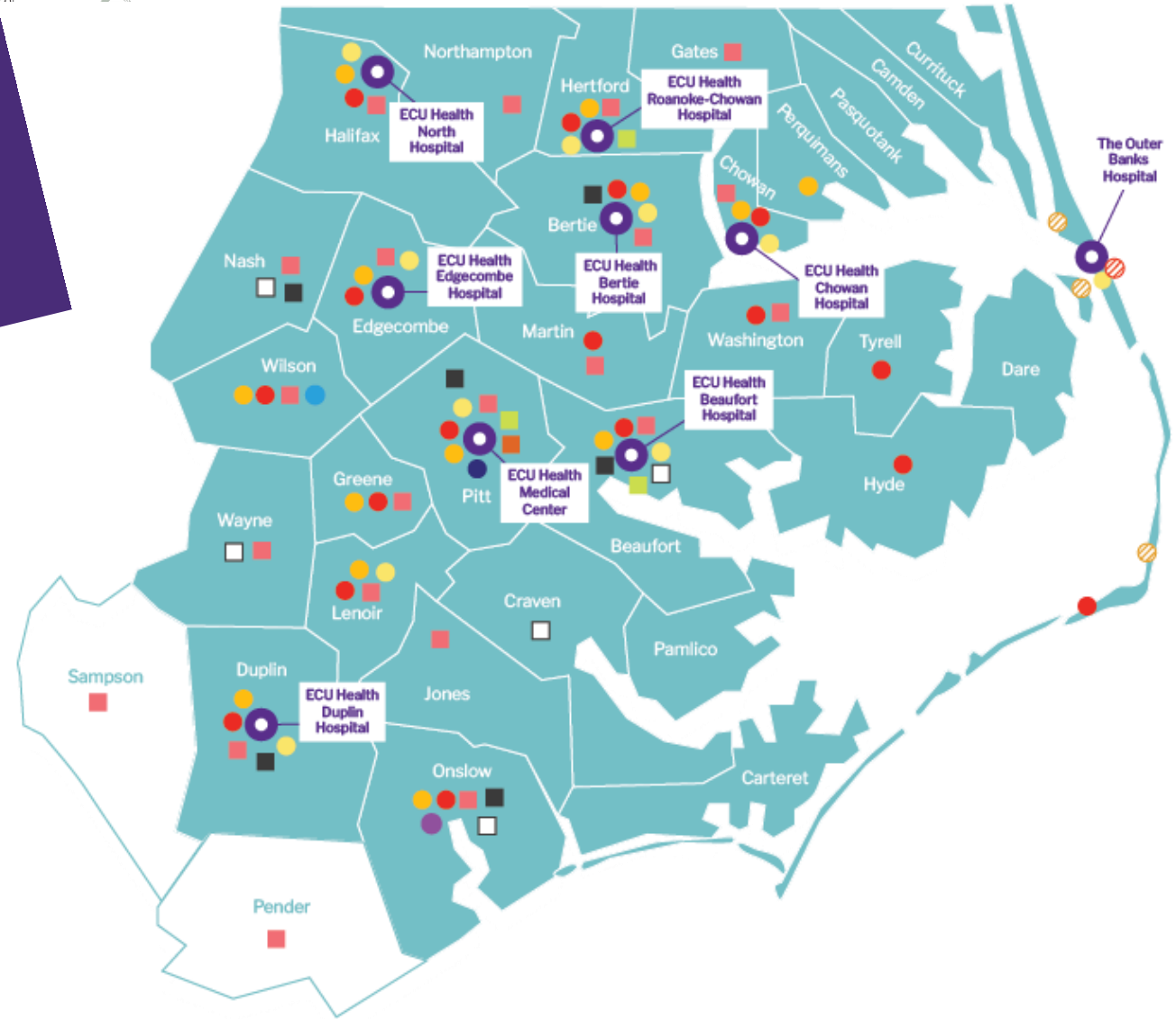
Hospitalized patients frequently have considerable volumes of blood drawn (phlebotomy) for diagnostic testing during short periods of time. Phlebotomy is highly associated with changes in hemoglobin and hematocrit levels for patients and can contribute to anemia. This anemia, in turn, may have significant consequences, especially for patients with cardiorespiratory diseases. Additionally, reducing the frequency of daily unnecessary phlebotomy can result in significant cost savings for hospitals.

# ECU HEALTH

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and chemistry testing in th

Patients frequently have considerable volumes of blood drawn (phlebotomy) for diagnostic testing and phlebotomy is highly associated with changes in hemoglobin and hematocrit levels for patients and can contribute to significant consequences, especially for patients with cardiorespiratory diseases. Additionally, reducing the frequency of phlebotomy can result in significant cost savings for hospitals.



# ECU Health Choosing Labs Wisely Team



**Yaolin Zhou, MD**

Associate Professor of  
Pathology



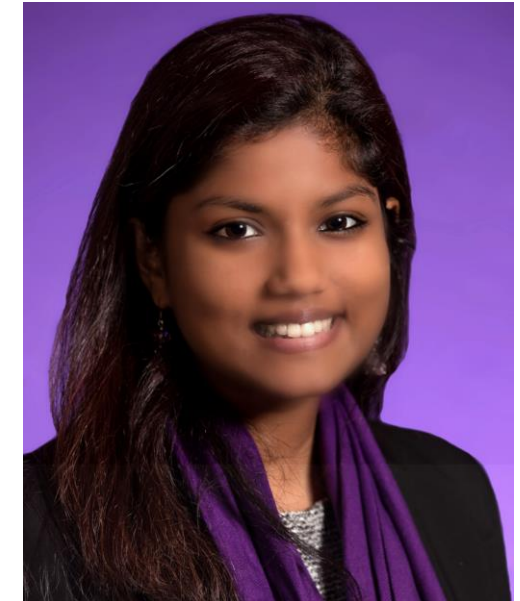
**Greeshma Sheri, MD**

Assistant Clinical  
Professor, GIM



**James Manning, MD**

ECU Health Hospitalist  
Medical Director



**Pranaya Pakala, M2**



# EPIDEM MODEL



1) Exploration



Promotion



Implementation



Documentation



Evaluation



Modification



# Choosing Labs Wisely

## Aim Statement:

We sought to use the EPIDEM model of quality improvement to achieve a 20% reduction in targeted lab tests (CBC, BMP, CMP, magnesium, phosphorous) per inpatient day within 6 months of initiation.

 1) Exploration

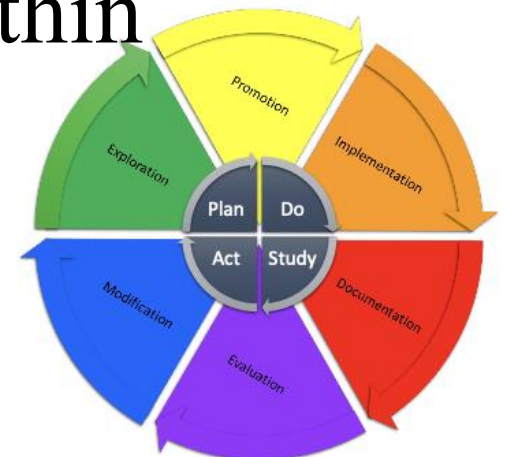
 Promotion

 Implementation

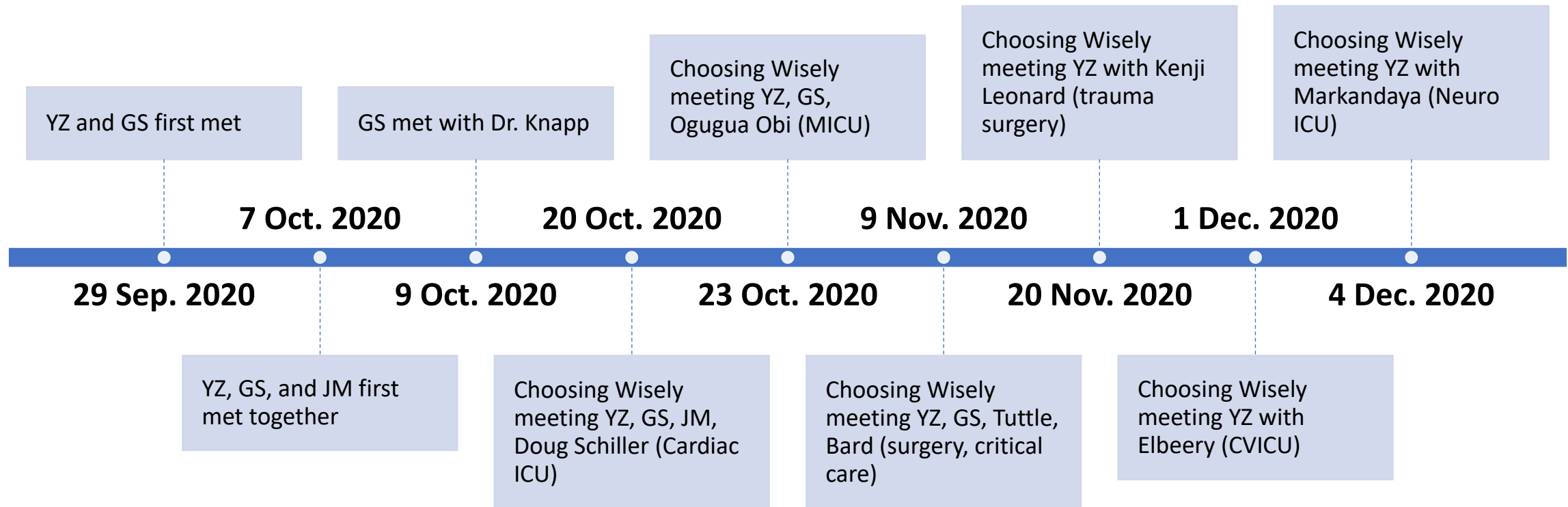
 Documentation

 Evaluation

 Modification



# Exploration: Academic detailing to share best practices and assess culture of lab ordering (Fall 2020)



# Promotion: Institution-wide buy in (Fall - Winter 2020)



**Implementation:** removed easy tab with option “daily x3” in electronic ordering system (April 2021)

Clinical Decision support statement added: July 2021

Daily option removed from drop down menu for frequency: Nov 2021

CBC with Differential AM Lab x 3

Frequency: **DAILY AM LAB** Once AM LAB Daily AM Lab

For: 3 Occurrences Hours Days Weeks

Starting: 11/11/2020 Today Tomorrow

First Occurrence: Include Now As Scheduled

First Occurrence: **Tomorrow 0430** Last Occurrence: **Fri 11/13 0430**

Scheduled Times ^

11/11/20 0430

11/12/20 0430

11/13/20 0430

Priority: Routine Routine STAT

Add-on: No add-on specimen found

Specimen Src: Blood

Clinical Decision Support: “Choosing Wisely Campaign recommends against ordering labs every day in the face of clinical stability.”

Next Required Link Order

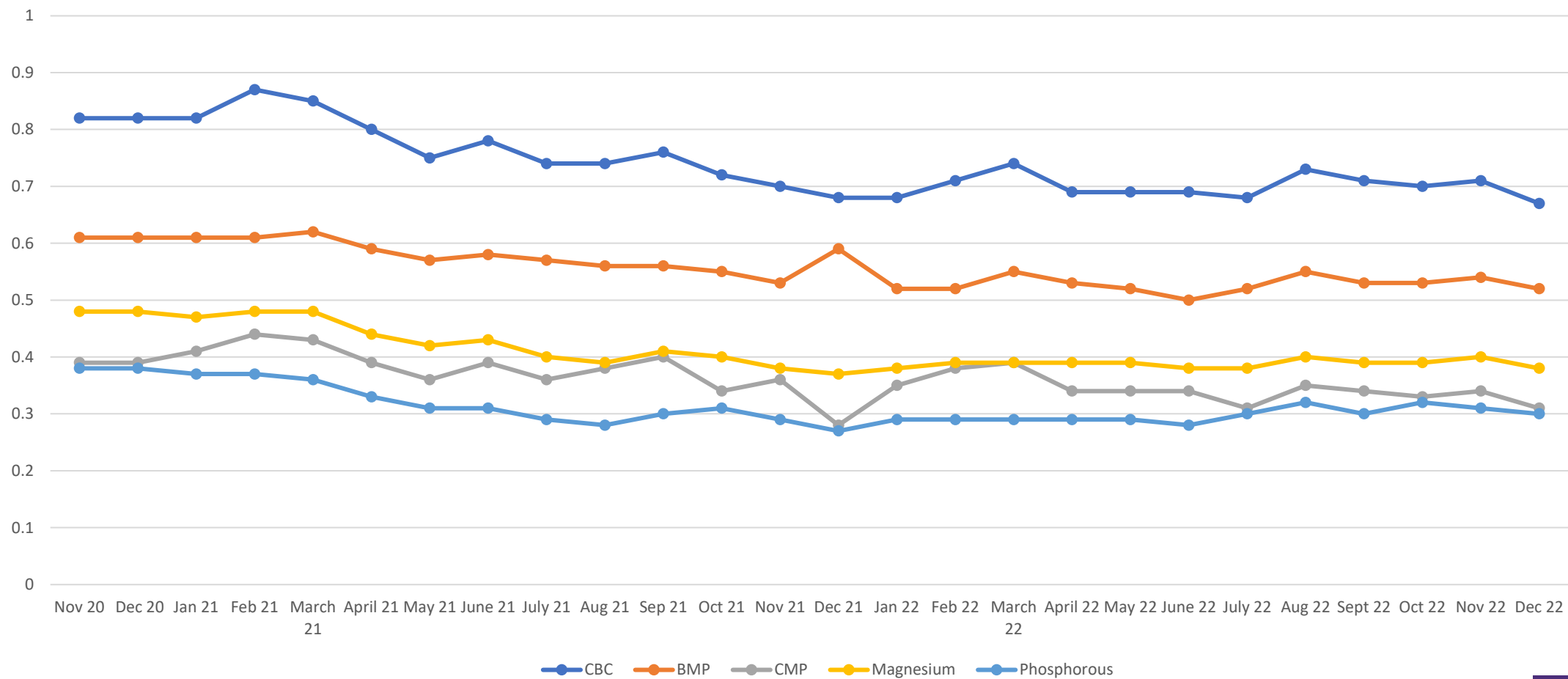




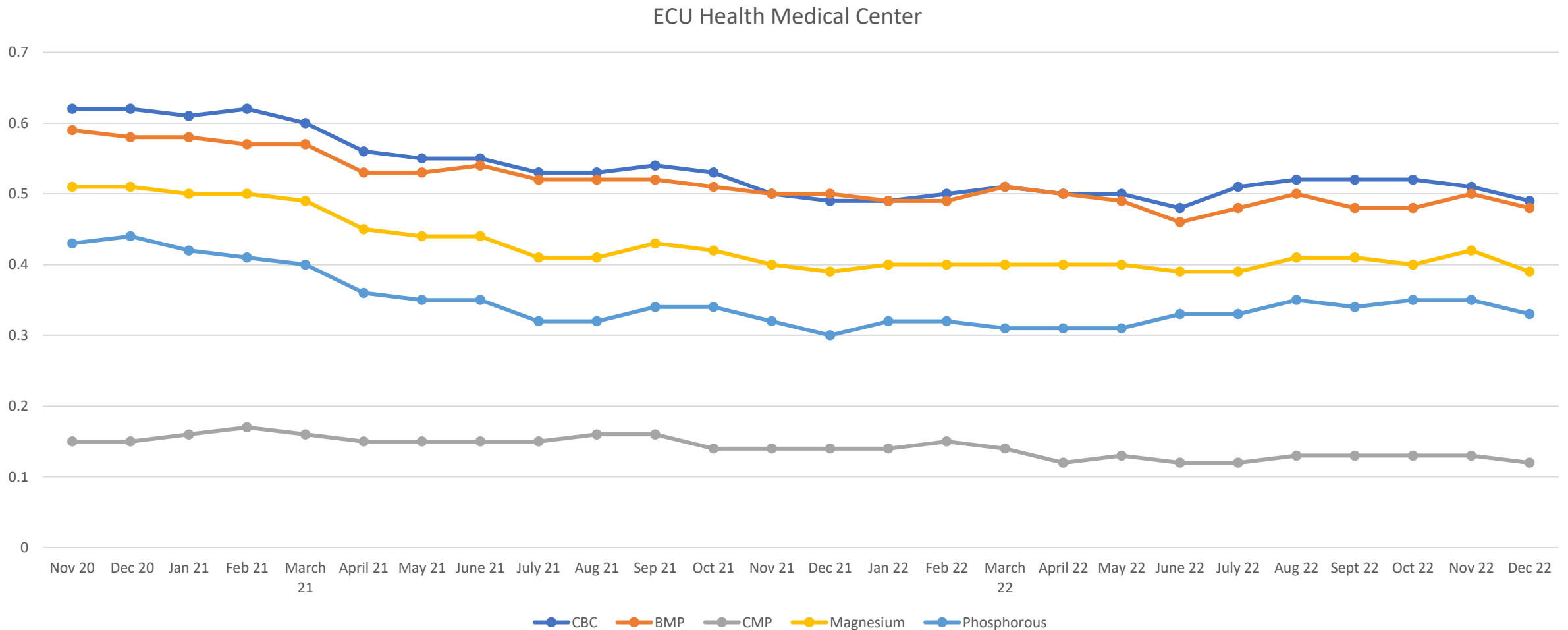
Documentation: All steps were carefully documented

# Evaluation: creation of Choosing lab Wisely “dashboards” (Summer 2021 - Present)

ECU Health



# Evaluation: creation of Choosing labs Wisely “dashboards” (Summer 2021 - Present)



# Pearls of Wisdom



## Success mantra

- Spent significant time exploring local culture and context
- System wide changes to EHR
- Support from leadership and frontline staff
- Team of academic hospitalists and pathologist clinicians from allowed for better exploration and overall execution of the EPIDEM model

## Future prospects

- Optimize dashboards for data collection and share with stakeholders
- Institute an incentive/reward system
- Better marketing, potentially using social media
- Include in curriculum for Graduate Medical Education
- Expand Choosing Wisely to other areas such as pharmacy and radiology

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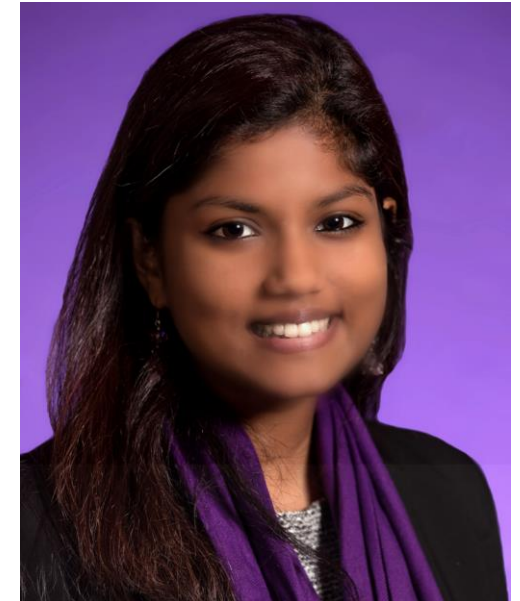
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Labs Wisely**

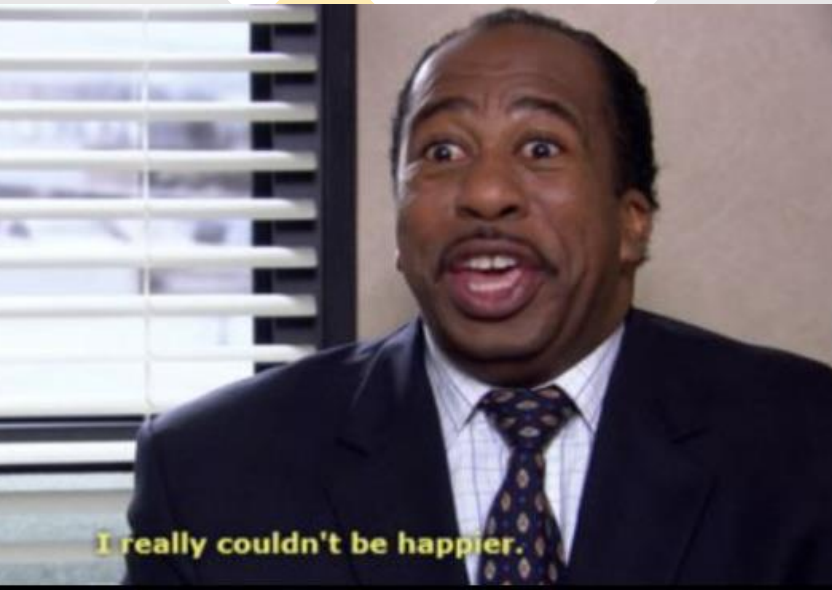


Choosing  
Labs Wisely



# Choosing Labs Wisely

Questions



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