

A photograph of two scientists in a laboratory. A woman in a white lab coat and blue gloves is standing and looking at a microscope. A man in a white lab coat and blue gloves is sitting at the microscope, looking at the slide. The background is a blurred laboratory setting with shelves and equipment. The overall color scheme is blue and white.

# To Disrupt or To Be Disrupted

Status Quo Is Not an Option

Hospital laboratorians, as disruptors following the Clinical Lab 2.0 roadmap, have a significant opportunity

Confidential for discussion purposes



# Agenda

- **Signs of Disruption**

---
- **Hospital Lab's Strategic Expansion Opportunities**

---
- **Clinical Lab 2.0 Roadmap for Diagnostic Optimization**  
Improve Outcomes, Lower Episode of Care Costs

---
- **Securing Institutional Support for the Transformation**

# Healthcare Transformation and Disruption

- **Patient Preferences Evolving**

---

- **Declining Patient Loyalty**

---

- **Surge in Venture Investment**

---

- **New Competitors With New Care Models**

---

- **Reimbursement is Changing**



# Hospital Clinical Laboratory Also Facing Disruption

- **Regulatory Changes**

---

- **New Technology**

---

- **New Care Delivery Models**

---

- **Health System Financial Issues May Prompt Lab Outsourcing**
  - Nearly 50% of US hospitals had negative operating margins in 2022
  - 250+ hospital laboratory/commercial lab outsourcing transactions have been completed to date

# Current Health System CEO Focus

- **Ongoing Focus On**
  - Hospital length of stay
  - 30-day unplanned readmissions
- **Community Care Delivery and Population Health**
- **Staff Burnout**
- **Future At-risk Reimbursements**
- **Profitable Growth Opportunities**
- **Improving Health System Operating Margins**

# The Hospital Clinical Laboratory's Attributes



Generates **70% of the objective information** in a patient's medical record



**Triggers or confirms** the majority of patient care costs, which will **rise dramatically** with **precision medicine**



**Touches every patient's care** in nearly every care setting



**Core competency** in every healthcare system that cuts across all department and division silos



**Rapidly advancing** clinical laboratory **diagnostic technology**



Vital component of **population health** and innovative **new care delivery models**



Scalable environment that represents only **3% of all healthcare spending** in the United States



# Fully Leverage These Attributes

- ✓ **Ongoing Focus On**
  - Hospital Length of Stay
  - 30-day unplanned readmissions

---

- ✓ **Community Care Delivery and Population Health**

---

- ✓ **Staff Burnout**

---

- ✓ **Positioning for Future At-Risk Reimbursements**

---

- ✓ **Looking for Profitable Growth Opportunities**

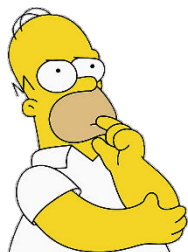
---

- ✓ **Improving Health System Operating Margins**

# So, With This Value- Generating Potential



Why does the hospital clinical lab run the risk of being disrupted and outsourced?





**Because We  
Have Allowed  
Others to  
Control the  
Narrative with  
a Focus on:**



Price per test in isolation



Economies of scale and service  
from a distance



# The GOOD News

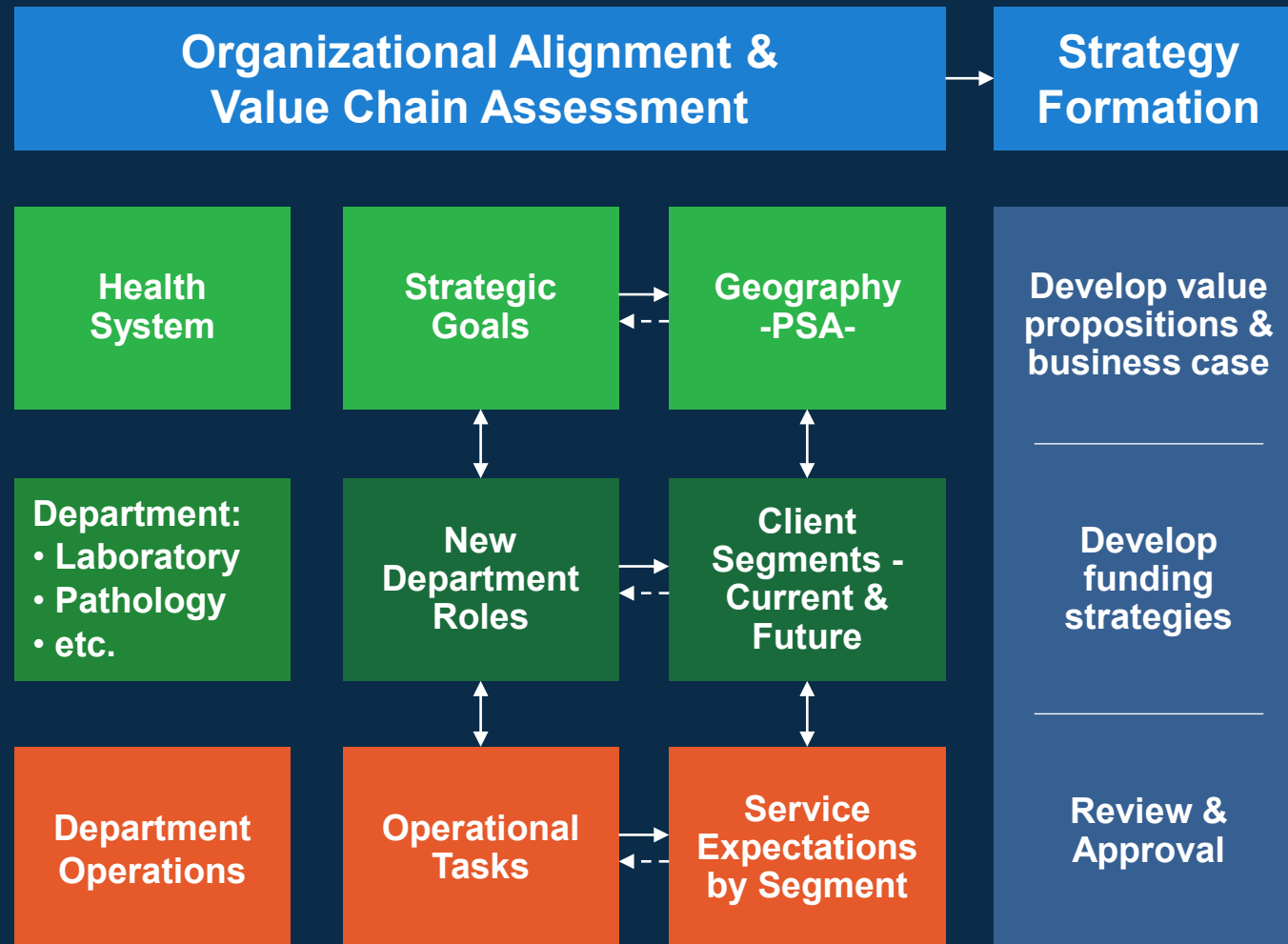


Results from local Clinical Lab 2.0 Dx Optimization initiatives can change the dialog.



The value of these approaches and the practice of laboratory medicine will always exceed the value of cheap tests.

# To Change the Dialog - Engage in Institutional Strategy Discussions

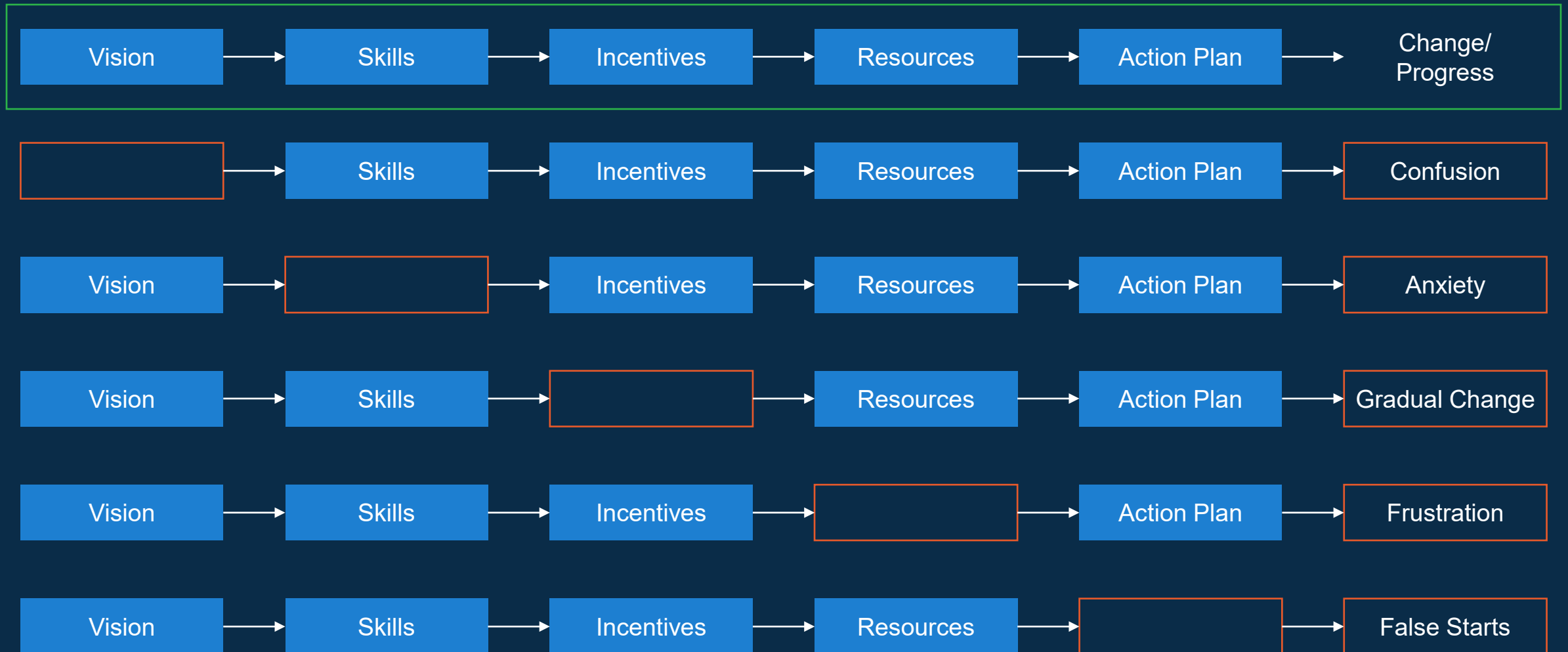


**It is important to think BIG**

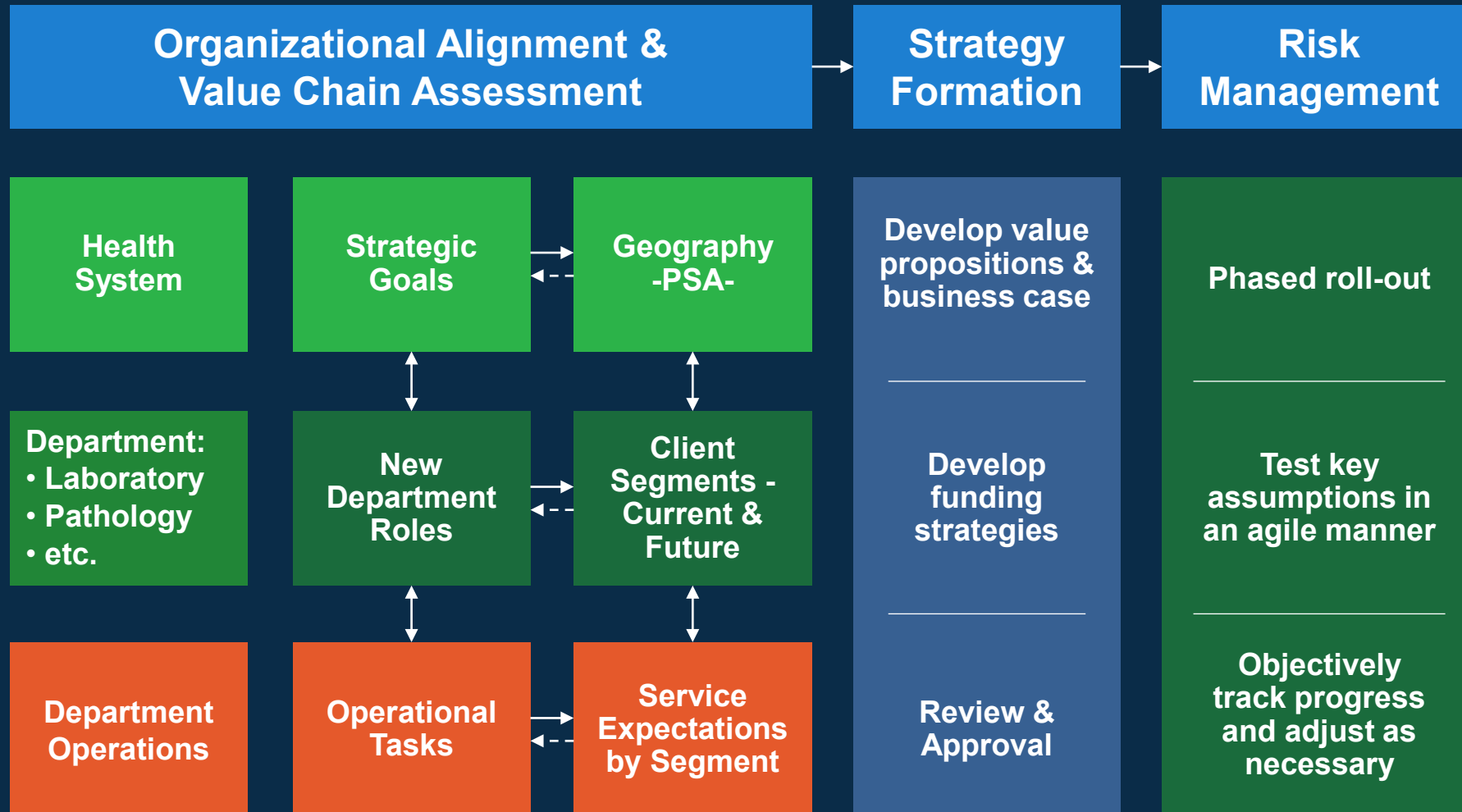
- Highlighting the lab's attributes
- Aligning benefits with the larger health system's goals



# To Succeed in Causing Disruption and in Managing the Transformation



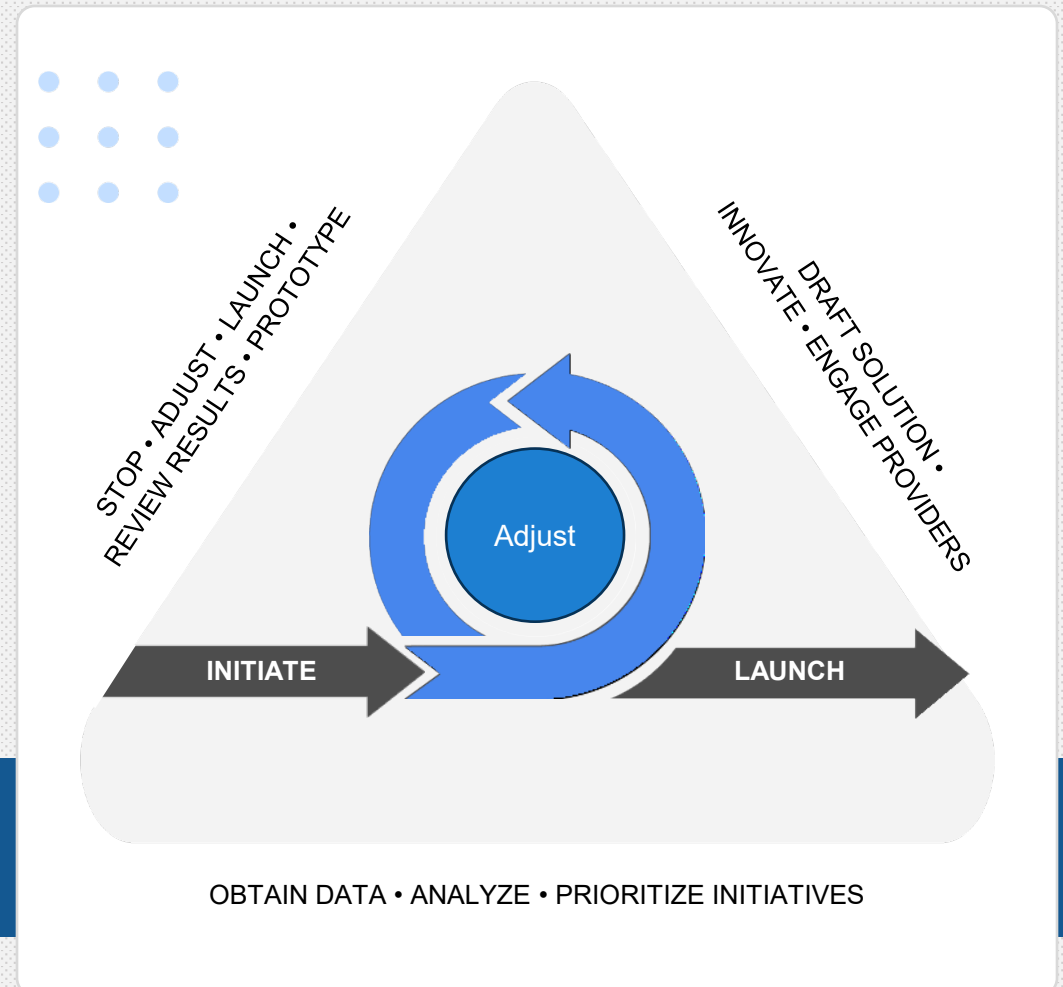
# Institutional Strategy Discussions



# Community Focused Clinical Lab 2.0 Journey

## Follow an Agile Process to

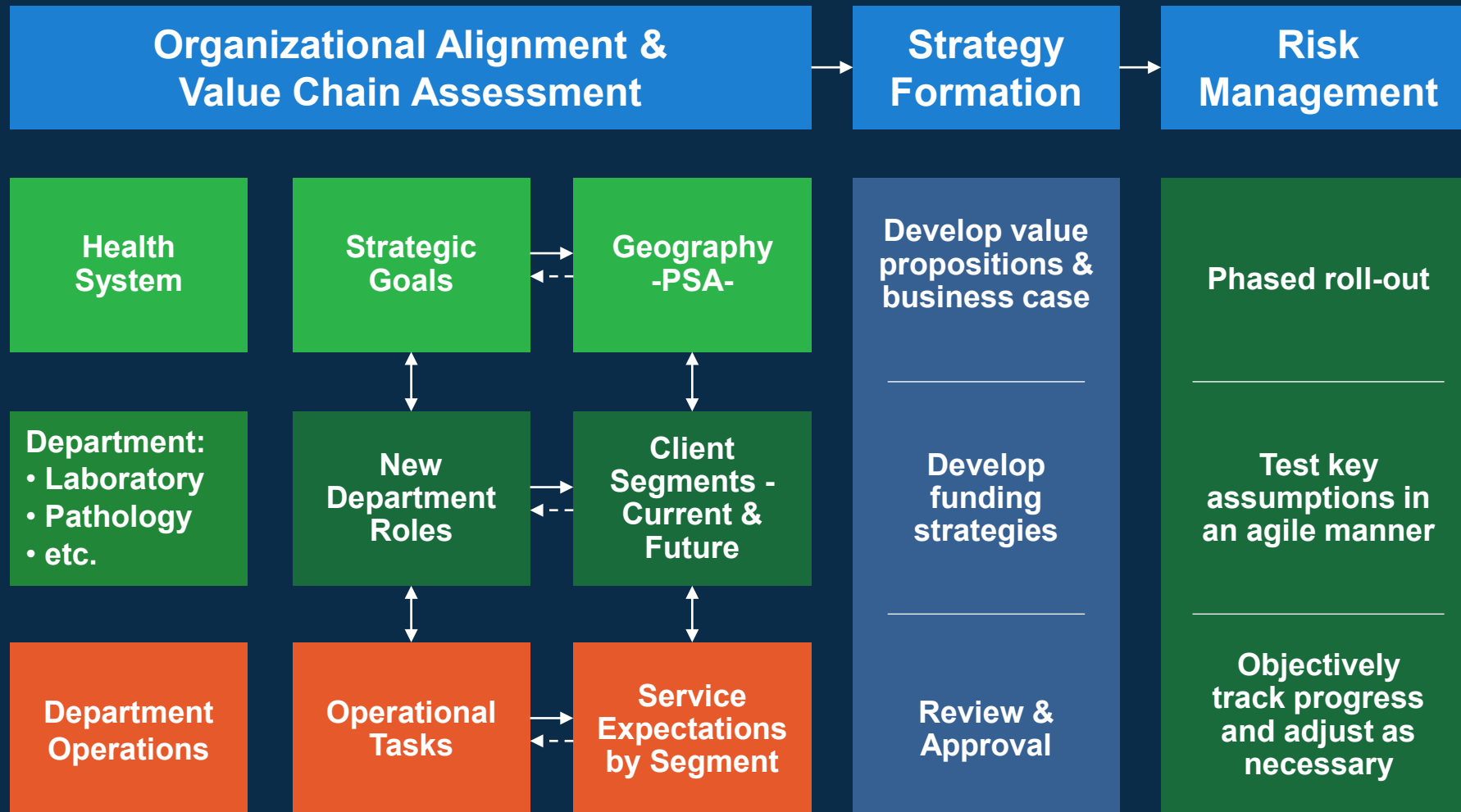
- Discover opportunities in a data-driven manner
- Engage with provider colleagues to define new diagnostic workflows
- Implement and test prototypes
- Manage the transformation & risks



**There will be initiatives that do not work out the first time. Adjust and try again.**



# Institutional Strategy Discussions



THINK BIG,  
but  
**start  
small**

# If Consistent with Institutional Goals...

## Start with inpatient Dx Optimization pilot study

- ▶ Analyze test ordering patterns looking for variation and episode of care cost savings
- ▶ Discuss ways to enhance practice efficiency and effectiveness with clinical leaders

## Why Choose Inpatient Settings as a Starting Point?



More controlled Clinical Environment



Reimbursement is bundled/DRG-based



Impacts from Dx Optimization/Clinical Lab 2.0 initiatives are more easily tracked over time

IT IS **MESSEY**  
OUT HERE!

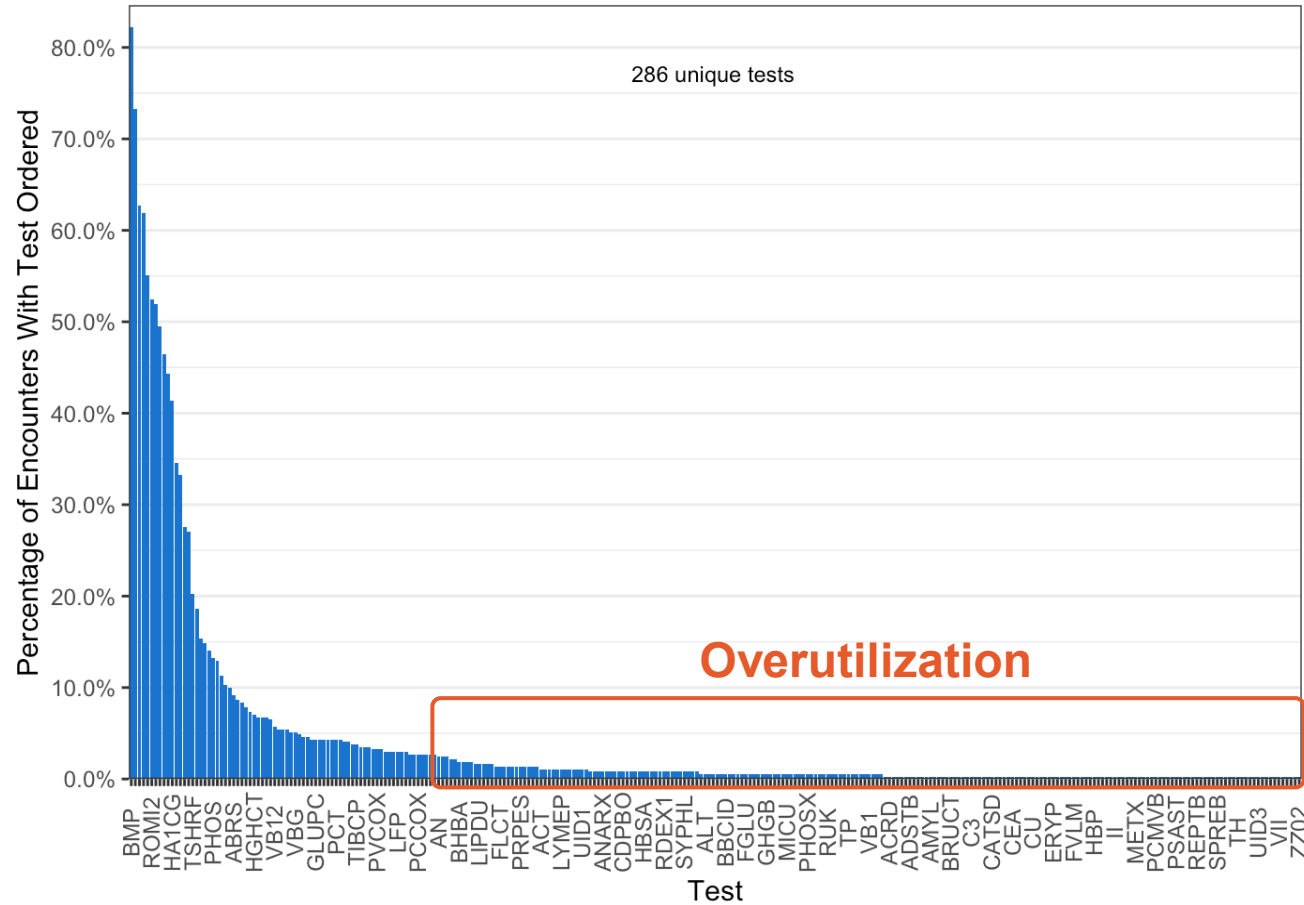
# BRACE YOURSELF

As you know -





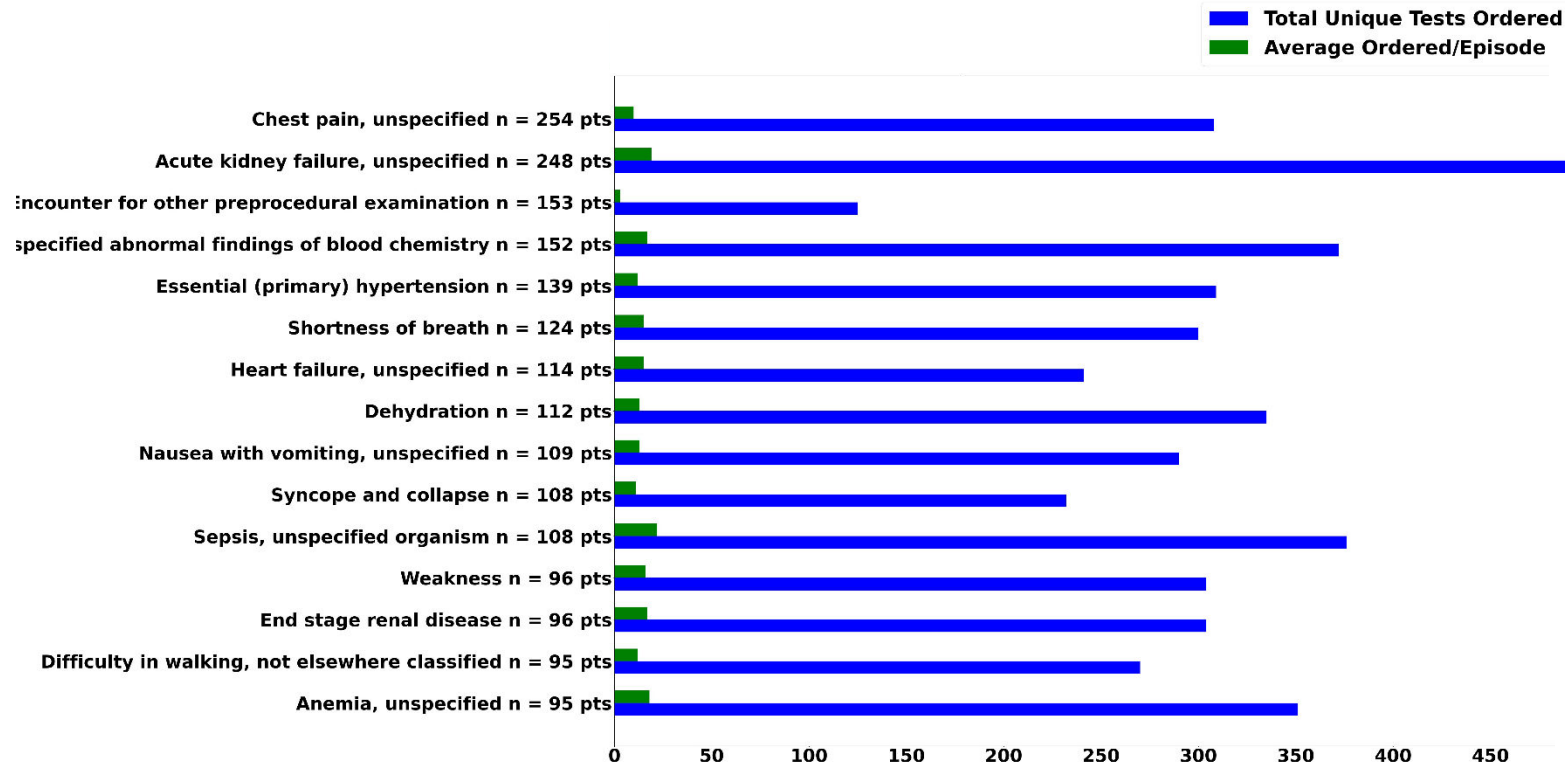
# To Help Visualize **Overutilization**



Chest Pain,  
Unspecified  
(ICD Code R07.9)

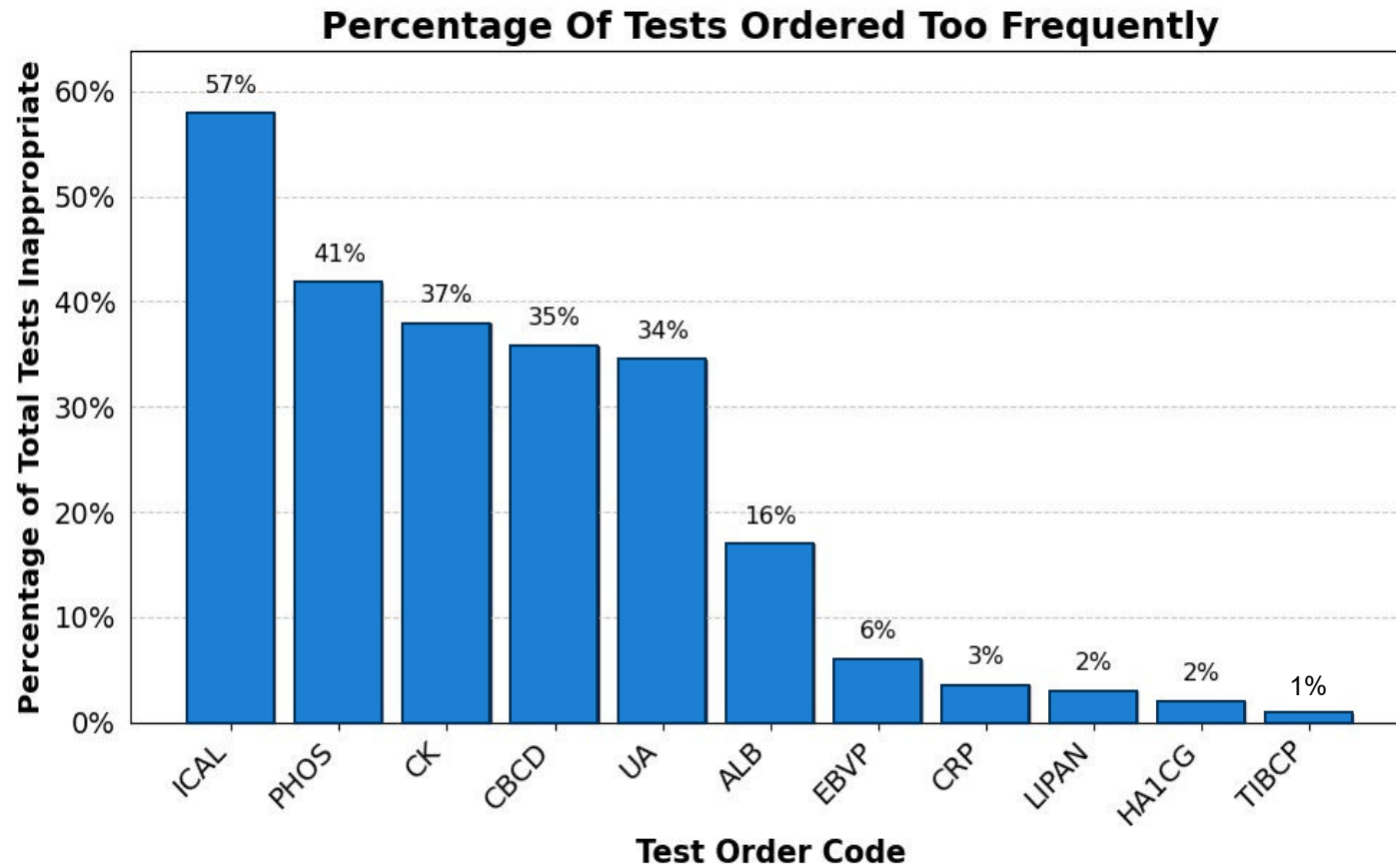
# 300 Bed Acute Care Hospital Model

## Top 15 ICD-10s



Total Encounters:  
**4763**

# Test Order Frequency



Removing ED and  
ICU encounters



# Why Does This Overutilization/Variation Matter?



## INCIDENTAL FINDINGS ARE COMMON

and can trigger Care Cascades which:

- ▶ Drive up non-value-added costs
- ▶ Delay hospital discharges

## Physicians Reported That These Cascades Resulted In:

### Patient Harm:

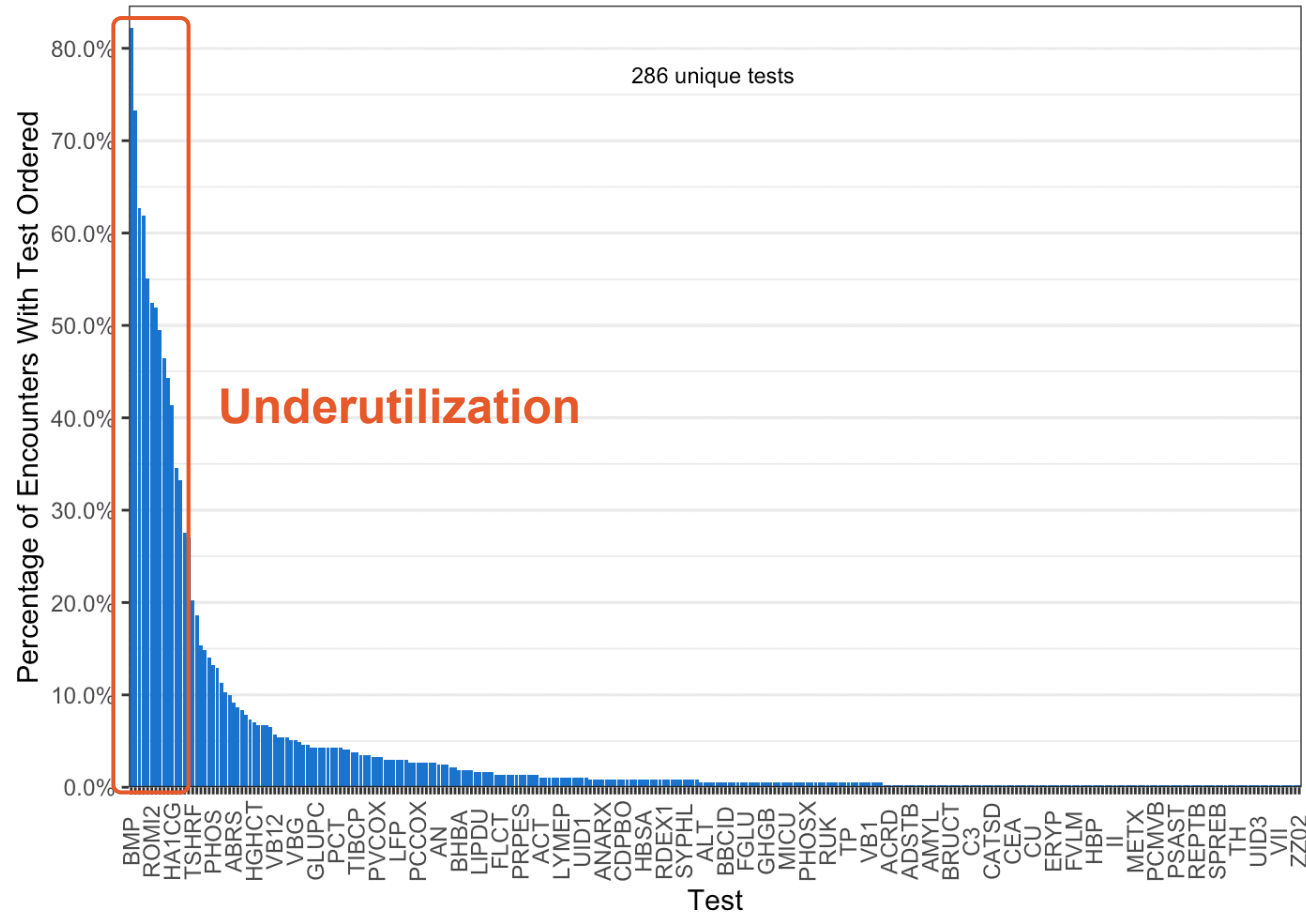
- ▶ Psychological harm – 68.4%
- ▶ Treatment burden – 65.4%
- ▶ Financial burden – 57.5%
- ▶ Dissatisfaction with care – 27.6%
- ▶ Physical harm – 15.6%

### Physician Frustration:

- ▶ Wasted time and effort – 69.1%
- ▶ Frustration – 52.5%
- ▶ Anxiety – 45.4%

\*Ganguli, I., Simpkin, A. L., Lupo, C., Weissman, A., Mainor, A. J., Orav, E. J., Rosenthal, M. B., Colla, C. H., & Sequist, T. D. (2019, October). Cascades of Care After Incidental Findings in a US National Survey of Physicians. JAMA Network Open.

# To Help Visualize Underutilization



Chest Pain,  
Unspecified  
(ICD Code R07.9)

# A Commonly Encountered Scenario

## Hyponatremia Mismanagement Affects Patient Care and Increases Cost\*

### Prevalence:



Hyponatremia affects up to 17% of hospitalized patients (reported cases)



Significantly underreported



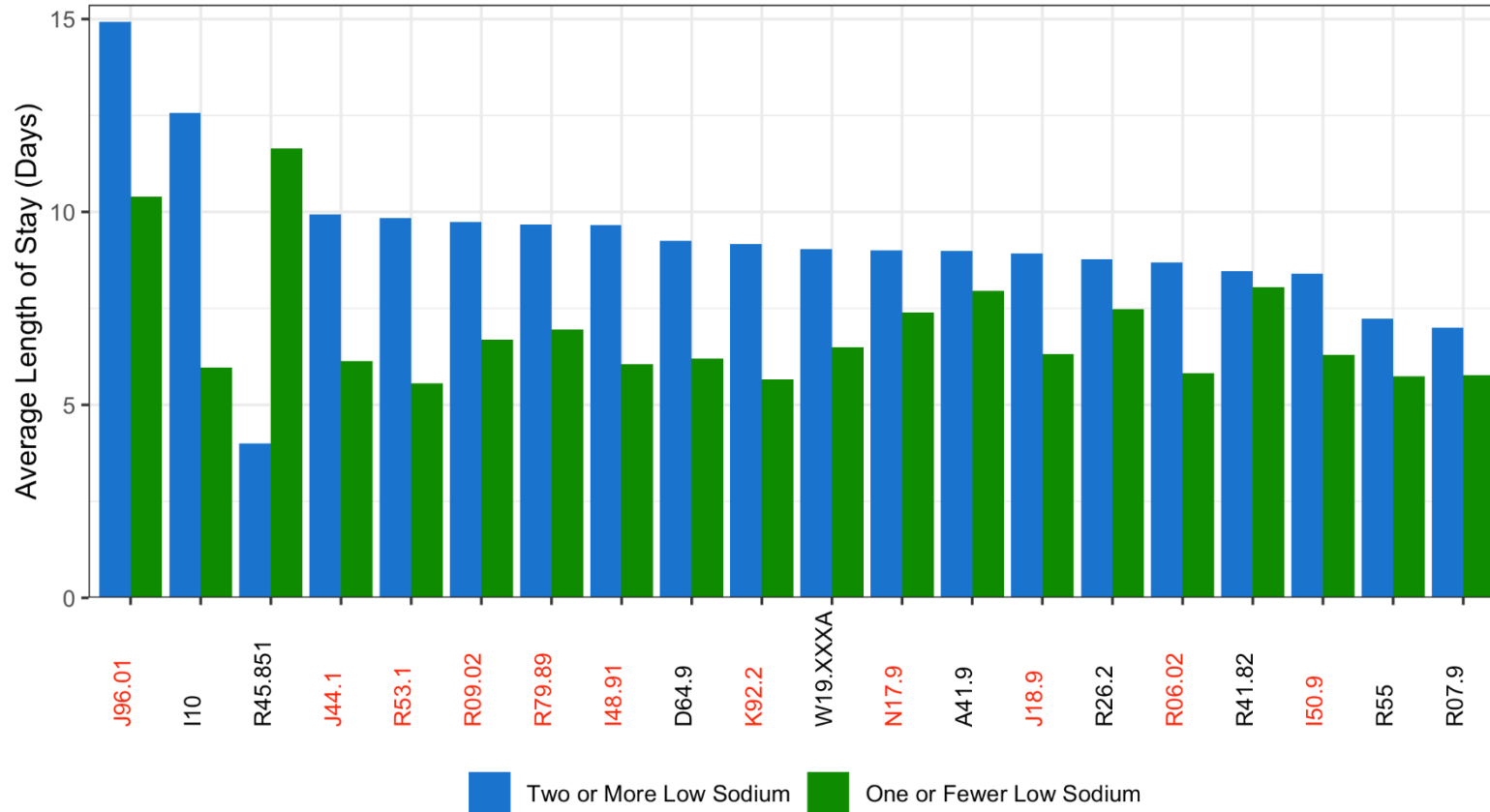
Frequent mismanagement problems,—33% of clinicians made clinical errors.

### Impact:

- ▶ Inpatient hyponatremia tightly linked to mortality
- ▶ Also linked with increased LOS & higher hospital costs
- ▶ Even mild hyponatremia ( $130 < Na < 135$ ) can cause falls, hip fractures, etc.

\*Source: R Dineen et al. Clin Med June 1, 2017 vol. 17 no. 3 263-269. R Wald et al. Arch Intern Med 2010;170(3):294-302 and Corona G, et al. (2013) PLoS ONE 8(12): e80451

# 300 Bed Hospital – LOS Across Top 20 ICD-10s With and Without Low Sodium Values



Codes in red are statistically significant at  $p < .05$

## Average LOS

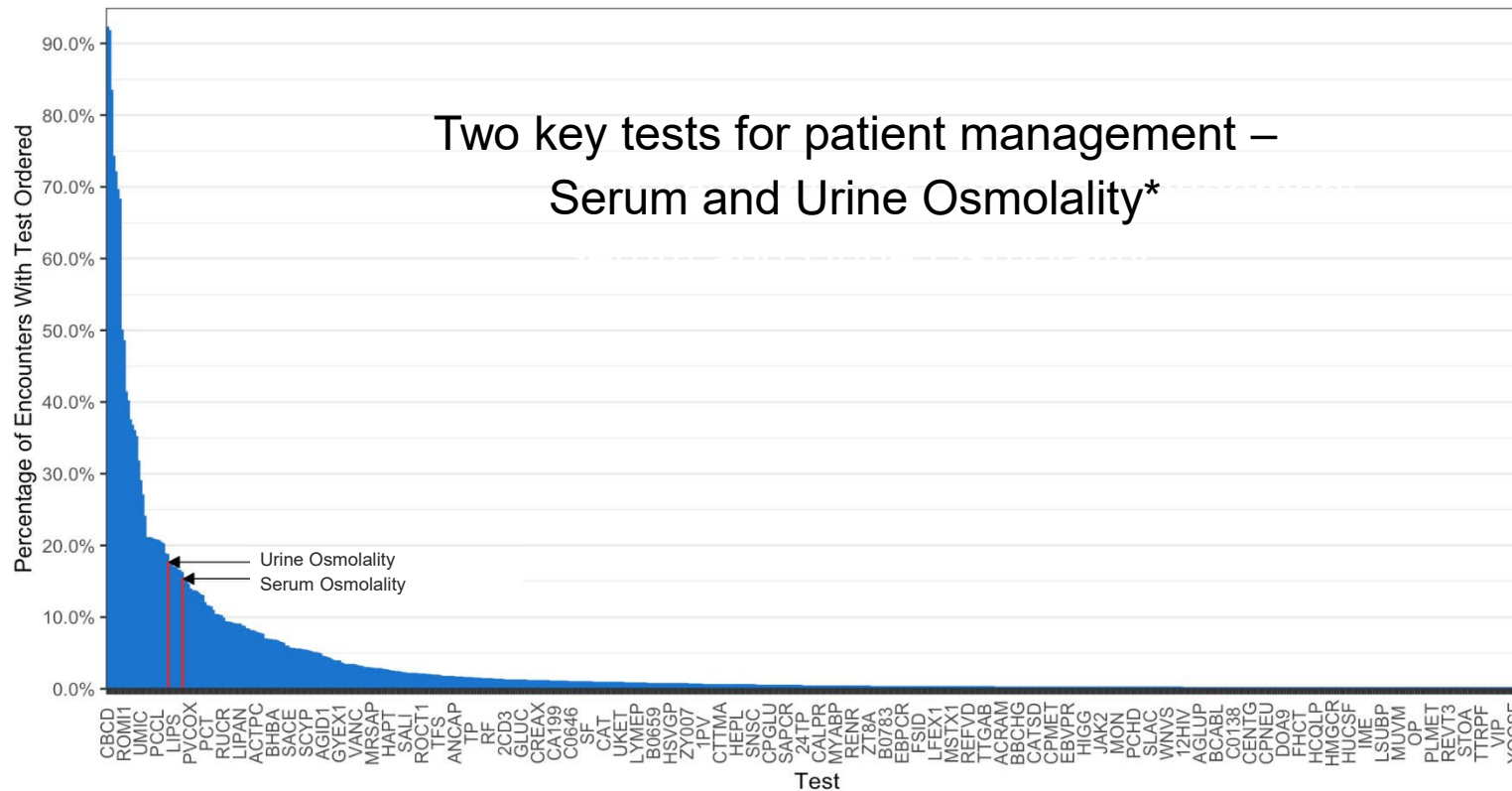
- with low sodium 9.3 days,
- without low sodium 6.7 days

## Cost impact

\$1.1 million annually



# Two or More Low Sodium Values (Multiply ICD-10s)



Over 700  
Encounters

\*Source: R Dineen et al. Clin Med June 1, 2017 vol. 17 no. 3 263-269. R Wald et al. Arch Intern Med 2010;170(3):294-302 and Corona G, et al. (2013) PLoS ONE 8(12): e80451

# Dx Optimization

# Patient Benefits



Ensuring that the right test is ordered at the right time



Receiving their definitive diagnosis in the shortest possible time



Shortening hospital stays and achieving better outcomes

# Dx Optimization

# Health System Benefits

- ✓ Improving patient outcomes
- ✓ Lowering episode of care costs
- ✓ Increasing provider efficiency and support
- ✓ Improving operating margins
- ✓ Reducing LOS and 30-day unplanned readmissions

All will help to defend the health system against disruption



# Dx Optimization

# Laboratory Benefits



Expanding strategic health system roles, akin to pharmacy's evolution beginning in the late '80s



Reinforcing that the local hospital laboratory is a key health system resource and a critical core competency in value-based care



# Summary

1

Clinical Lab 2.0 Concepts and Laboratory Medicine Principles represent tremendous opportunities for the hospital clinical laboratory in value-based care

2

It is much more fun to disrupt than to be disrupted



**The secret of all victory lies  
in the organization of the  
nonobvious.**

Marcus Aurelius, Roman Emperor and Philosopher

**Thank You!**