



Is It Necessary? Lab Trends and Best Practices for Improved Outcomes.

Welcome!



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- Responsible for assisting CareSelect® clients in:
 - optimizing their laboratory and imaging ordering practices
 - achieving their clinical decision support goals
- Served as the Director of Patient Relations at a health system in the southeast, providing strategic leadership and oversight for all patient experience initiatives

Session objectives

- Utilize trends highlighted in the session to recognize areas of improvement within your lab.
- Explore the benefits of using analytics to leverage your providers' ordering data against laboratory-appropriate use criteria to better understand ordering patterns and clearly identify misutilization trends.
- Gain insights into the strategies and approaches of organizations that have effectively employed these best practices to improve outcomes.

Agenda

- 1 State of the industry
- 2 Data trends
- 3 Strategies for success and customer outcomes
- 4 Key takeaways
- 5 Q&A

State of the state

Increasing volume

Approximately **13 billion** laboratory tests are performed annually in the U.S.¹

Consumer driven testing. **Genetic testing** became **the top direct-to-consumer test type** in 2022, with over 3,000 new genetic tests introduced in the U.S.²

Utilization

20-40% of labs are inappropriate⁵

Common causes include frequency; commonly confused tests; superior test options; sex, age, or location specific

Staffing shortage

Nearly 40% of labs are understaffed³

U.S. faced a shortage of **20,000 to 25,000** medical laboratory science professionals in 2022⁴

Financial pressures

Turnaround time: **Misdiagnosis or delayed diagnosis** accounts for nearly **one-third (32%)** of medical malpractice claims⁶

Price pressure from national reference laboratories

Laboratory services represent just 2.3% of total U.S. health care expenditures.⁷

What the data shows

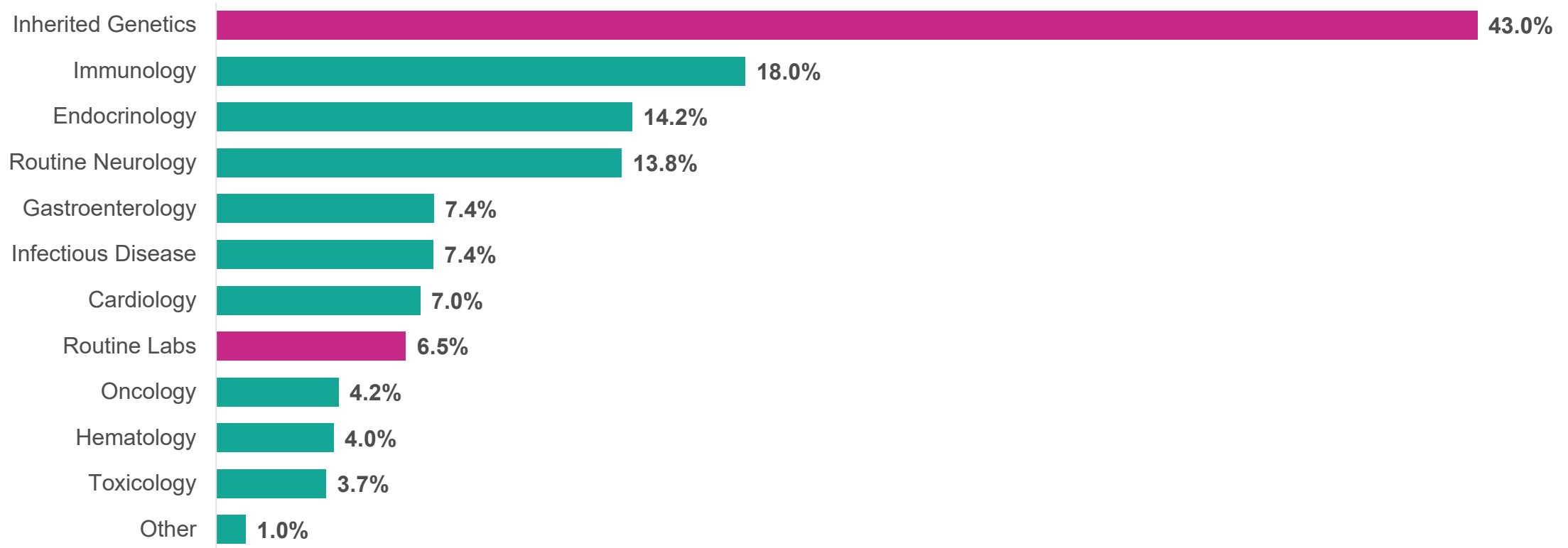


Based on ~52.4 million laboratory ordering transactions processed by the CareSelect® Lab decision support solution in 2023.

1. Don't discount low-cost testing
2. Inherited genetics testing, while ordered less frequently than other labs, has the highest % of order inappropriateness compared to other test categories
3. Endocrinology tests are commonly misutilized and represent the highest spend by testing category
4. Specific instances where tests with similar clinical utility are being ordered concurrently

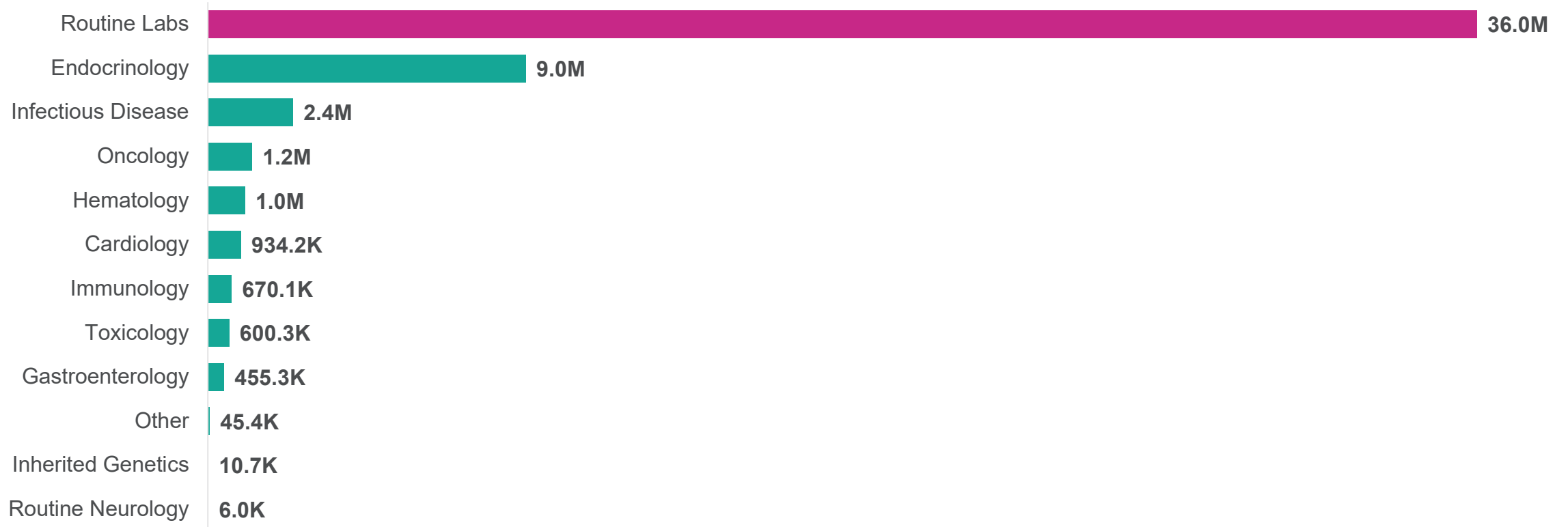
Inappropriateness % by testing category

2023 – Clinical sources of inappropriate ordering



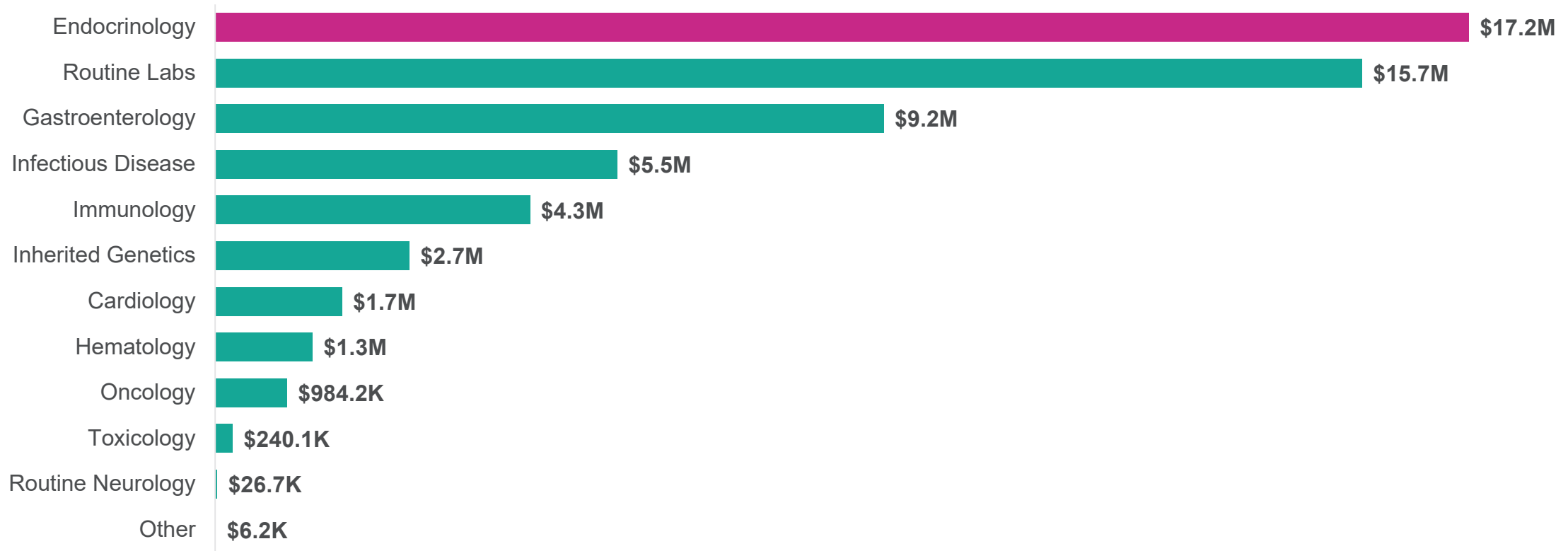
Ordering volume by testing category

2023 – Clinical sources of inappropriate ordering



Spend by testing category

2023 – Clinical sources of inappropriate ordering



Concurrent order trends



Concurrent Orders

Two tests ordered simultaneously by a clinician

Inferior/superior

Only one test is recommended as the inferior test adds minimal clinical value

245,728

Erythrocyte Sedimentation Rate + C-Reactive Protein

Redundant analytes

Panels with overlapping tests causing duplicate testing

15,156

CBC w/ Differential + Hemoglobin and Hematocrit

Duplicate orders

Similar clinical utility or may reflex which will result in a duplication of testing

105,828

Urinalysis + Urine Bacterial Culture

Ordinal logic

Testing should be performed sequentially

83,288

Thyroid-Stimulating Hormone and Free T4

*Based on annualized lab test volumes from 2023.

How to solve for this?

A comprehensive laboratory utilization management solution

CareSelect Lab



Adjudicate

Adjudicate the appropriateness of every unique lab, pathology and genetic test order with 1,800+ guidelines authored by Mayo Clinic.



Analyze

Analyze laboratory ordering patterns to identify acute areas of overutilization and opportunities for improvement.



Guide

Address areas of acute need with point-of-order guidance or alternative interventions.

Comprehensive clinical content

Addressing common root causes for overutilization

1,800+

Laboratory care advisories
authored by the
Mayo Clinic



Frequency

Repetitive ordering that is not clinically necessary



Genetic tests

High cost of hereditary genetic tests



Superior testing

Provides alternative test option based on updated standards



Cost

Provides generic cost information on expensive tests



Commonly confused

Tests that may be confused with other tests



Value-based testing

Provides guidance on appropriate clinical use



Location

Tests that shouldn't be available in certain patient care locations



Sex/Age

Tests that should be restricted based on patient sex/age

Actionable insights

Comprehensive utilization metrics and analytics



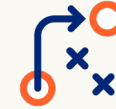
Identify overutilization

Leverage ordering data to provide rich clinical insights, reveal ordering patterns and identify areas of overutilization.



Compare providers

Compare utilization practices among health care providers and across institutions.



Intervene strategically

Engage and educate clinicians and optimize EHR setup to improve order appropriateness.

Point-of-order guidance

Deliver appropriate guidance through provider ordering workflows to enable informed clinical decisions

- Alerts only fire when clinically necessary
- Alerts are actionable and flow smoothly within the ordering workflow
- When available, relevant clinical data and results are featured in the alert to guide decision making
- Detailed cost analysis based on provider actions in the alert

Clinical Decision Support for
CBC WITH DIFFERENTIAL [LAB293]

Frequency Alert

This test should not be ordered more frequently than once per day.
When monitoring an abnormal result, consider ordering the specific analyte or a smaller panel.

Date	Name	Value	Unit	Range
1-27-2023	WBC	8.00	tho/cmm	4.00 - 10.00 tho/cmm
1-27-2023	RBC	5.00	mil/cmm	4.40 - 5.70 mil/cmm
1-27-2023	Hemoglobin	14.0	g/dL	13.5 - 17.3 g/dL
1-27-2023	MCV	90.0	fL	81.0 - 96.0 fL
1-27-2023	RDW	12.0	%	11.0 - 15.0 %
1-27-2023	Platelet Count	200	tho/cmm	150 - 400 tho/cmm

You ordered CBC WITH DIFFERENTIAL.
What would you like to do next?

Remove CBC WITH DIFFERENTIAL from patient order?
[Cancel Order](#)

Keep CBC WITH DIFFERENTIAL?
[Keep](#)



Edward Smith

History:

A 65-year-old male presents with joint pain in the knees and shoulders. Seen by primary care physician who observes no joint deformities, swelling or erythema. Joint tenderness noted with no signs of inflammation or instability.

Labs ordered:

- Complete Blood Count
- Erythrocyte Sedimentation Rate (ESR)
- High Sensitivity C-Reactive Protein (hs-CRP)
- Uric Acid Test

All data is fictional and not based on real patient data.

Case scenario

Issues

- hs-CRP is the wrong test
- ESR is elevated. However, ESR is a non-specific indicator of inflammation.

Interventions

With point of order guidance, the physician would have known:

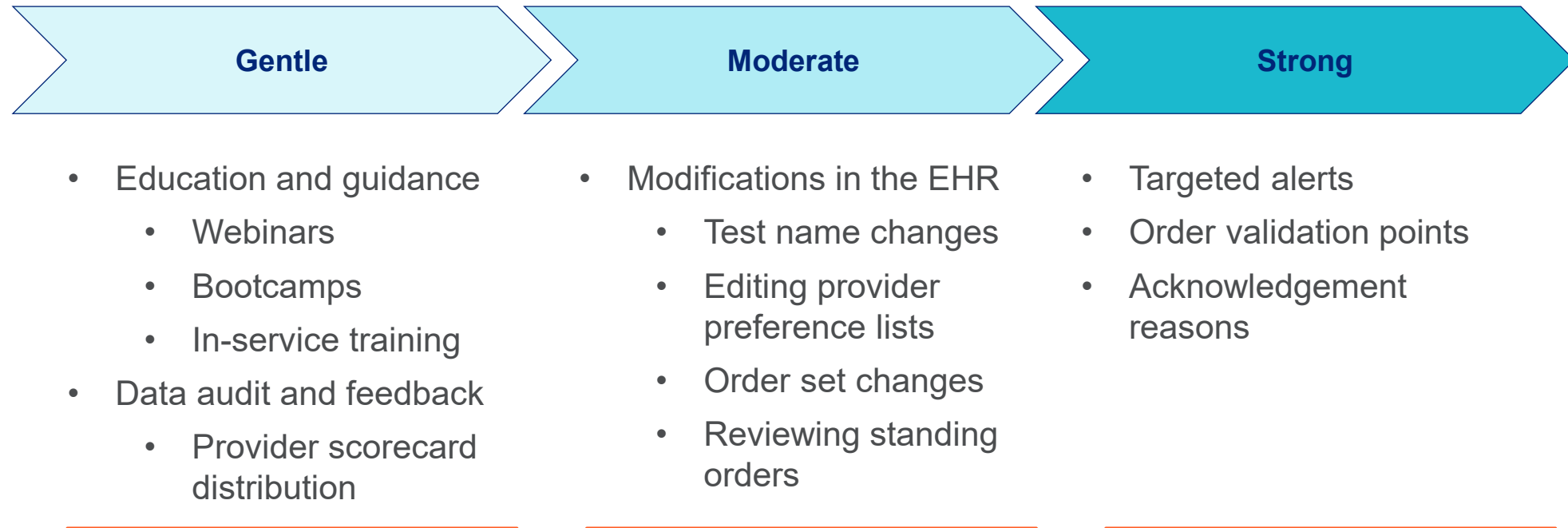
- CRP is the correct order since patient has no known history of cardiovascular disease.
- ESR testing is not necessary. CRP is a more sensitive indicator of inflammation.

Results

- Reduced lab resources
- No delays in getting appropriate tests and results
- No unnecessary cost to the patient

Strategies for success and customer outcomes

Intervention strategies



Gentle intervention: Education

Customer strategies



“Bootcamps” for provider groups

- Allows for targeted education based on data trends and findings
- Follow up with a quality project to demonstrate the impact of education for the providers



One site held bootcamp sessions for the following tests

- TSH, Vitamin D, Inflammatory Markers, Lipid Panel, Tick-borne Testing, Urine Drug Screens, Colorectal Cancer Screening, Liver Function Testing
- Saw a reduction in TSH + Free T4 being ordered concurrently with a subsequent increase in Thyroid Function Cascade and also saw a reduction in Vitamin D ordering



Another organization held a large-scale meeting with more than 100 primary care providers

- Did a data overview, discussed goals for lab efficiency, and tasked the attendees to bring this training back to each of their office groups then followed up with email-based training

Moderate intervention: EHR updates and communication

Moderate

Customer success

Intervention

450-bed health system in the Midwest used non-interruptive interventions such as tweaks to the EHR order entry process and an email memo to providers.

Results



77% reduction

in inappropriately-ordered High-Sensitivity C-Reactive Protein tests




1/3 reduction

in inappropriately-ordered 1,25 dihydroxyvitamin D tests.

Moderate intervention: EHR build updates

Customer success

Goal	Solution	Results
<ul style="list-style-type: none">• Identify areas of overutilization and or inappropriate lab orders• Reduce or eliminate unnecessary, expensive testing	<ul style="list-style-type: none">• Audited utilization trends with CareSelect Lab analytics• Quickly identified Lyme Disease Tick Testing as a lab with low clinical utility• Worked with infectious disease to remove the Lyme Disease Tick Test from their order catalog	<p> \$41,000¹</p> <p>Estimated annual savings from the elimination of one lab test</p>

1. Based on an average of the volume of performed Lyme Disease Tick Panel tests in 2022 and estimated annual volumes for 2023.

Strong intervention: Alerts

Customer success

Intervention

341-bed hospital in the midwest targeted 4 low-value “daily labs” with an alert

Results



20% reduction

in labs per discharge within the first month of turning on an alert



22% reduction

in orders for the four targeted tests within the first 30 days

Laboratory stewardship



Leadership endorsement and commitment is crucial to the success of a laboratory stewardship program.



A dedicated laboratory stewardship committee is necessary as it facilitates opportunities and ensures the right stakeholders are at the table.

How to create a laboratory stewardship committee

- 1 Secure leadership endorsement**
Institutional, clinical practice, and laboratory endorsement ensures resources will be allocated and strategies will be integrated into practice.
- 2 Identify members**
Clinical providers, laboratory medicine subject matter experts, administrative leadership, genetic counselors, IT (EHR or LIS are ideal).
- 3 Operationalize activities**
Develop a formal organizational chart, create a recurring schedule for meetings and consider internal webpage
- 4 Goal Setting**
Develop a committee charter and define the overall goals the committee would like to achieve

Best practices

Start small, focus on quick wins to gain momentum

Don't immediately disregard low-cost testing

With high utilization, routine testing can quickly add up to a sizable opportunity

Underutilization may be just as important as overutilization

Consider starting your interventions on inpatient or outpatient practice

- Operationally, endorsement from different committees or practice groups may be needed for inpatient and outpatient testing
- For inpatient testing, identify a small subset of tests for the initial focus (likely <10)
- For outpatient testing, concentrate on the “family” of tests
 - Example: for tick-borne disease, look at all tests available in the test menu — serology, PCR, individual tests and panels

Q&A

Duration of segment

References

1. “Laboratory Medicine: Advancing Quality in Patient Care.” ADLM (Formerly AACC), Oct. 2015, www.myadlm.org/Advocacy-and-Outreach/ADLM-Policy-Reports/2015/Laboratory-Medicine-Advancing-Quality-in-Patient-Care.aspx.
2. “United States Laboratory Industry Report 2023: Analysis of New Services, Technological Innovations, Sustainable Practices, and Impact of Regulatory Changes - Researchandmarkets.Com.” Business Wire, 9 Jan. 2024, www.businesswire.com/news/home/20240109552210/en/United-States-Laboratory-Industry-Report-2023-Analysis-of-New-Services-Technological-Innovations-Sustainable-Practices-and-Impact-of-Regulatory-Changes---ResearchAndMarkets.com.
3. Garcia, Edna, et al. “The American Society for Clinical Pathology’s Job Satisfaction, Well-Being, and Burnout Survey of Laboratory Professionals.” OUP Academic, Oxford University Press, 21 Feb. 2020, academic.oup.com/ajcp/article/153/4/470/5741819.
4. “United States Laboratory Industry Report 2023: Analysis of New Services, Technological Innovations, Sustainable Practices, and Impact of Regulatory Changes - Researchandmarkets.Com.” Business Wire, 9 Jan. 2024, www.businesswire.com/news/home/20240109552210/en/United-States-Laboratory-Industry-Report-2023-Analysis-of-New-Services-Technological-Innovations-Sustainable-Practices-and-Impact-of-Regulatory-Changes---ResearchAndMarkets.com.
5. Devis L, Catry E, Honore PM, Mansour A, Lippi G, Mullier F, Closset M. Interventions to improve appropriateness of laboratory testing in the intensive care unit: a narrative review. *Ann Intensive Care*. 2024 Jan 15;14(1):9. doi: 10.1186/s13613-024-01244-y. PMID: 38224401; PMCID: PMC10789714.
6. Christy Bieber, J.D. “Medical Malpractice Statistics of 2024.” *Forbes*, Forbes Magazine, 5 Feb. 2024, www.forbes.com/advisor/legal/personal-injury/medical-malpractice-statistics/.
7. “Laboratory Medicine: Advancing Quality in Patient Care.” ADLM (Formerly AACC), Oct. 2015, www.myadlm.org/Advocacy-and-Outreach/ADLM-Policy-Reports/2015/Laboratory-Medicine-Advancing-Quality-in-Patient-Care.aspx.

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