



Simplicity Through Standardization: M Health Case Study

After years of acquisitions and mergers, along with the increasing demands on the health system, M Health Fairview faced the significant undertaking of standardizing its labs across multiple sites in order to reduce care variation for physicians, unwarranted resource utilization and costs. To meet those needs, it redefined its RFP process, focusing on partnership as well as technical capabilities, to find a vendor who could provide the best solution.

Quick Look:

	Nationally ranked cancer center at M Health Fairview Cancer Care*			
	10 hospitals	60+ clinics	1,140+ active clinical trials	
3.3k providers	100+ specialties	~15M annual billable tests		

*U.S. News and World Report 2023-24 Best Hospitals.

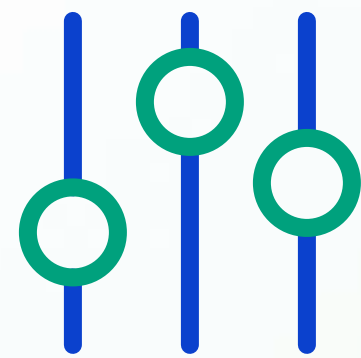
MHealthFairview.org. Accessed Sept 2024.



M Health Goals

M Health's mission is to create an easier, simpler healthcare experience – making sure each moment shared with every customer matters.

To accomplish that mission, M Health identified these core business priorities when evaluating vendors.



Reduce care variation

- Optimize care pathways
- Standardize reference ranges
- Surgery center goals: 85% of testing volume within 45 minutes from collection to result
- System goals: 80% of testing volume within 60 minutes from collection to result



Reduce unwarranted resource utilization

- Minimize sample volume requirements to align with organizational blood conservation goals
- Minimize unnecessary tasks and waste



Reduce cost per case

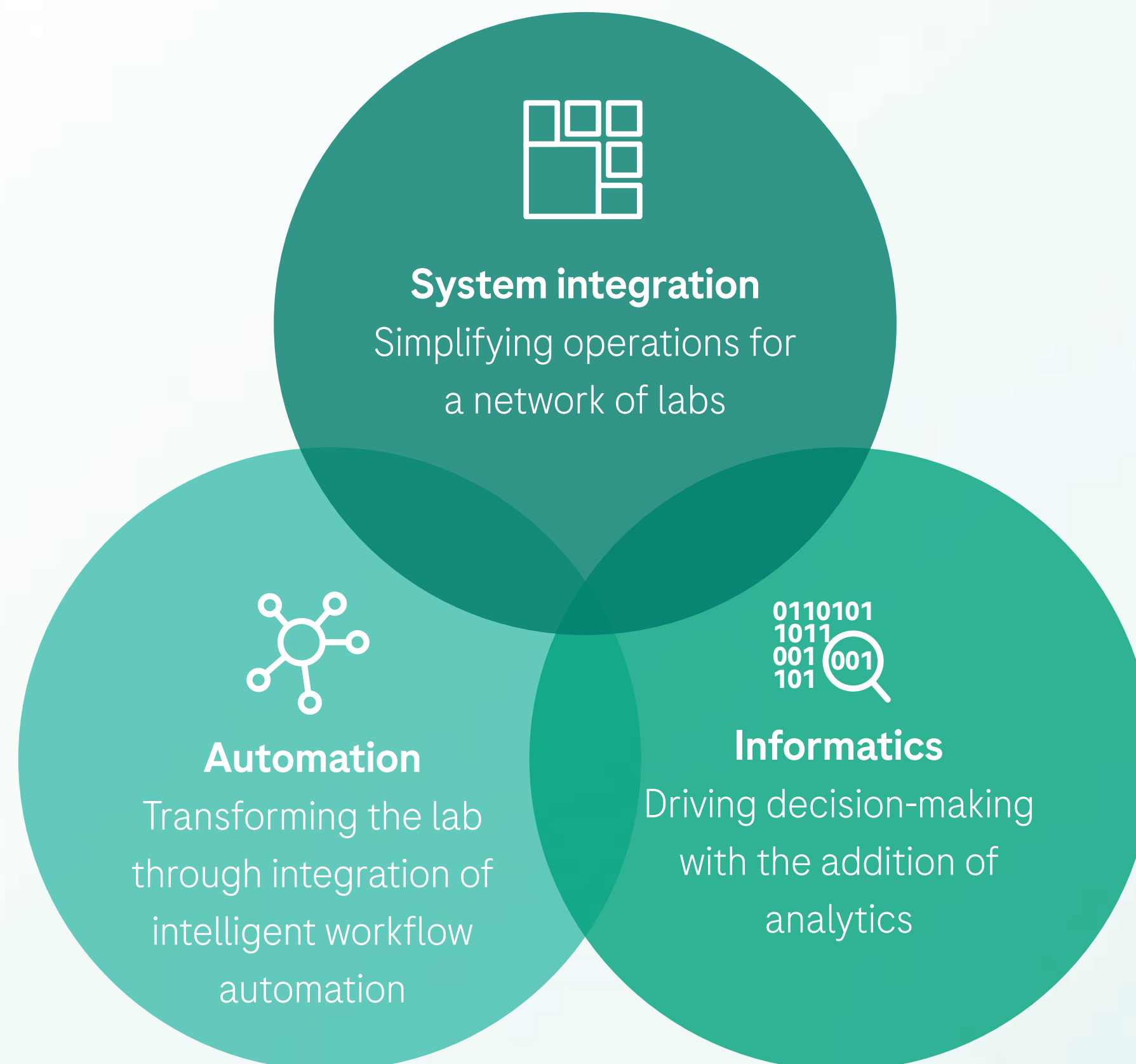
- Incorporate strategies for LEAN processes in and outside the lab
- Use value-based contracting ties to optimize the care pathway

“We will rise to meet this moment in order to create healthcare that is more affordable, accessible and equitable. Healthcare that makes our community better, for everyone, today and long into the future.”

President and CEO of M Health Fairview

Defining the solution

Roche designed a fully integrated solution to support LEAN strategies across the network. M Health's East Bank lab conversion now supports outpatient and inpatient testing while improving service levels for patients.



Eye on efficiency

It was critical to the M Health team to make workflow efficiency gains and improve turnaround times (TATs).

They needed to:

- **Consolidate** the test menu
- **Create a central core lab** that would serve both as a reference lab and an acute care facility
- **Automate** the total lab
- **Gain both pre-analytical and analytical redundancy**, in the same footprint, to ensure that the lab would be best positioned to run 24/7 without interruption
- Accommodate increases in volume and **capacity for continued growth**

Overview

Goals

Standardization

Optimizing
resources

Better, faster
results

Patient-centric
partnership

Network

Timeline

Network transition

Transitioning from regional sites to a hub-and-spoke model meant standardizing instrumentation across the organization.



*“Labs typically want to standardize to a single platform. The benefits are having the same reagents, the same reference range, and the same critical values for all tests. This means results are reported in the same way across the board. The most important reason to have a standardized platform across an organization, is so that **any provider across your system will be able to interpret results the same for every patient.**”*

Jina Forys, Acute Laboratory Director

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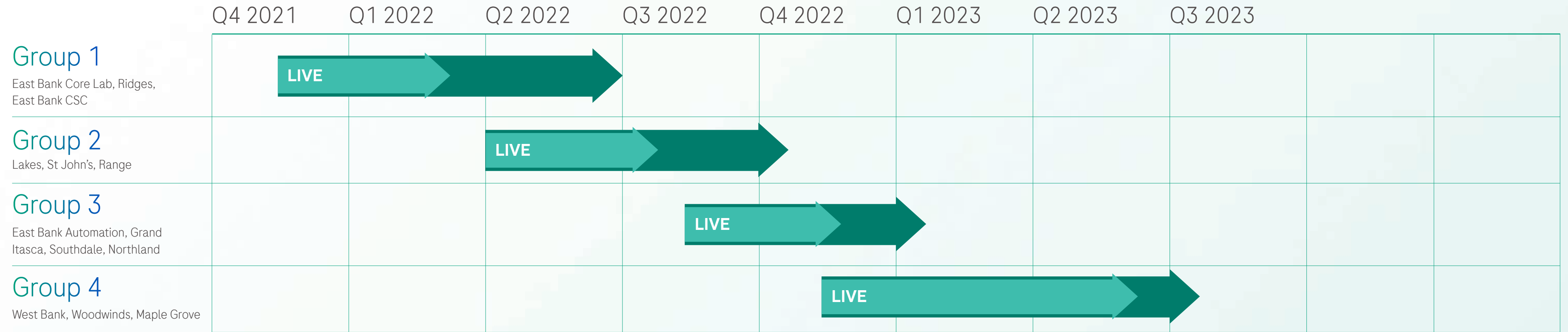
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Network

Timeline

Implementation timeline



“Weekly implementation meetings were helpful to keep us on track- including minutes/timelines”

“Don’t have to order often; supplies always arrived on time or sooner than expected”

“Go- live was well supported by LIS/Roche and issues were well documented and taken care of right away”

“Good job anticipating the differences between current and future workflow”

“IT Chat in Teams with MHFV IT, Roche IT, and our site on go live days to fix IT issues in real time”

“Collaboration for improved Roche materials storage, inventory management, and lot separations”

“One thing that went well from a communication and education standpoint- Troponin T. I felt that Roche provided resources, help with coordination, and support for this transition for our clinical users”

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Integration

System

Automation

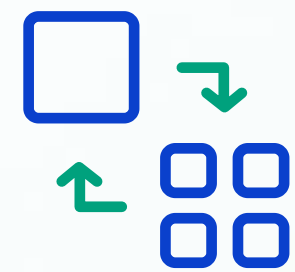
Informatics

Core Lab “before” snapshot

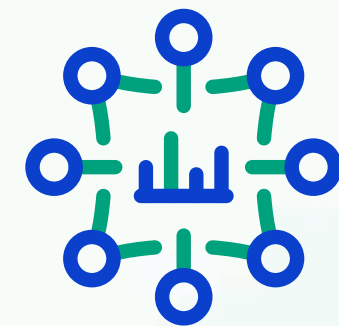


TATs

66 minutes at 90% for ~2M tests
(excludes samples over 100 minutes)



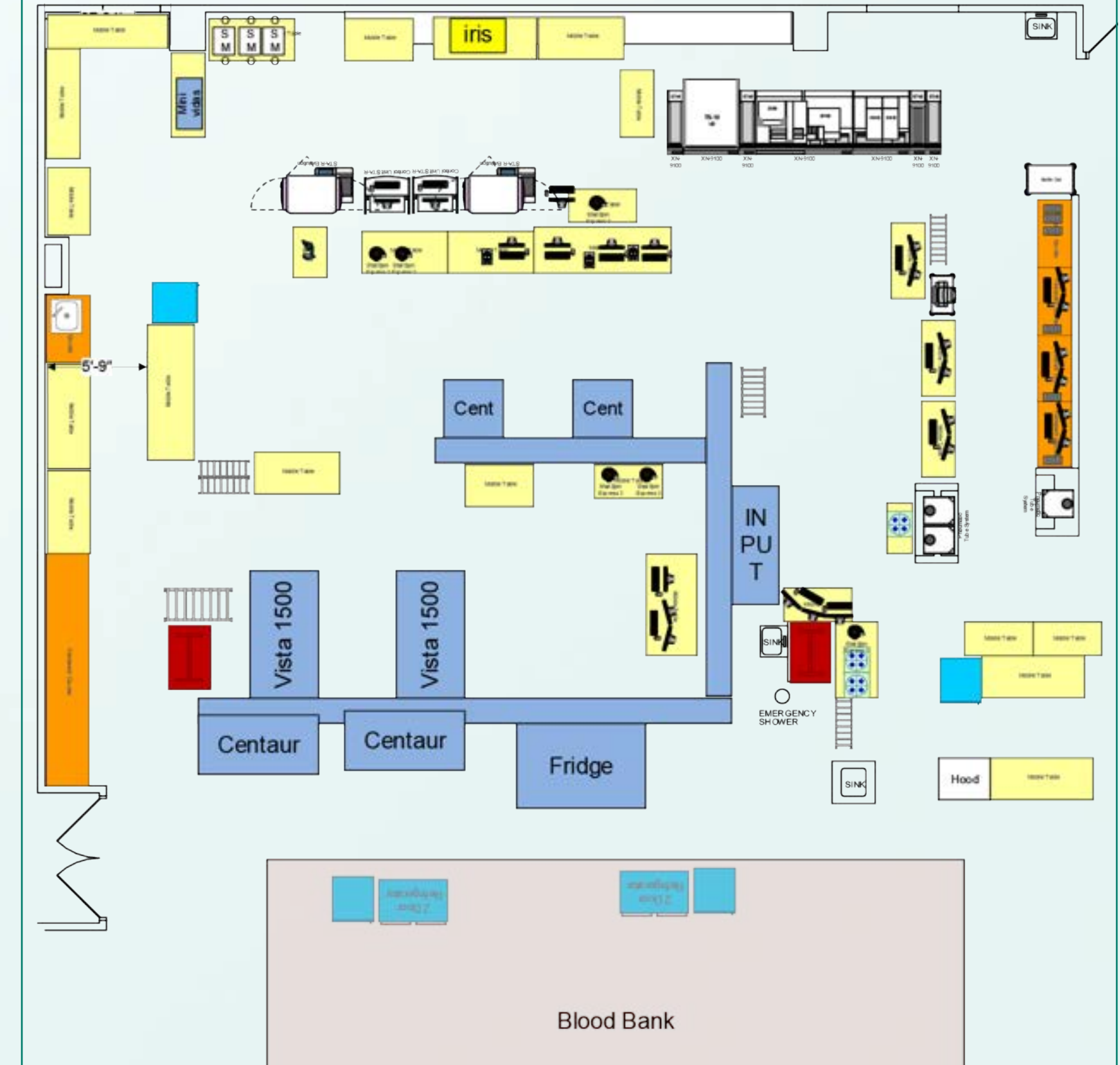
Workflow



Digital Experience

- 11 workstations for receiving, aliquoting, and sendouts (6 work areas)
- Centrifuging emergency department samples offline
- Scanning all samples to receive in LIS
- Multiple vendors
- Poor visibility
- 2-week turnaround for reporting requests

Previous layout of M Health Fairview UMMC East Campus



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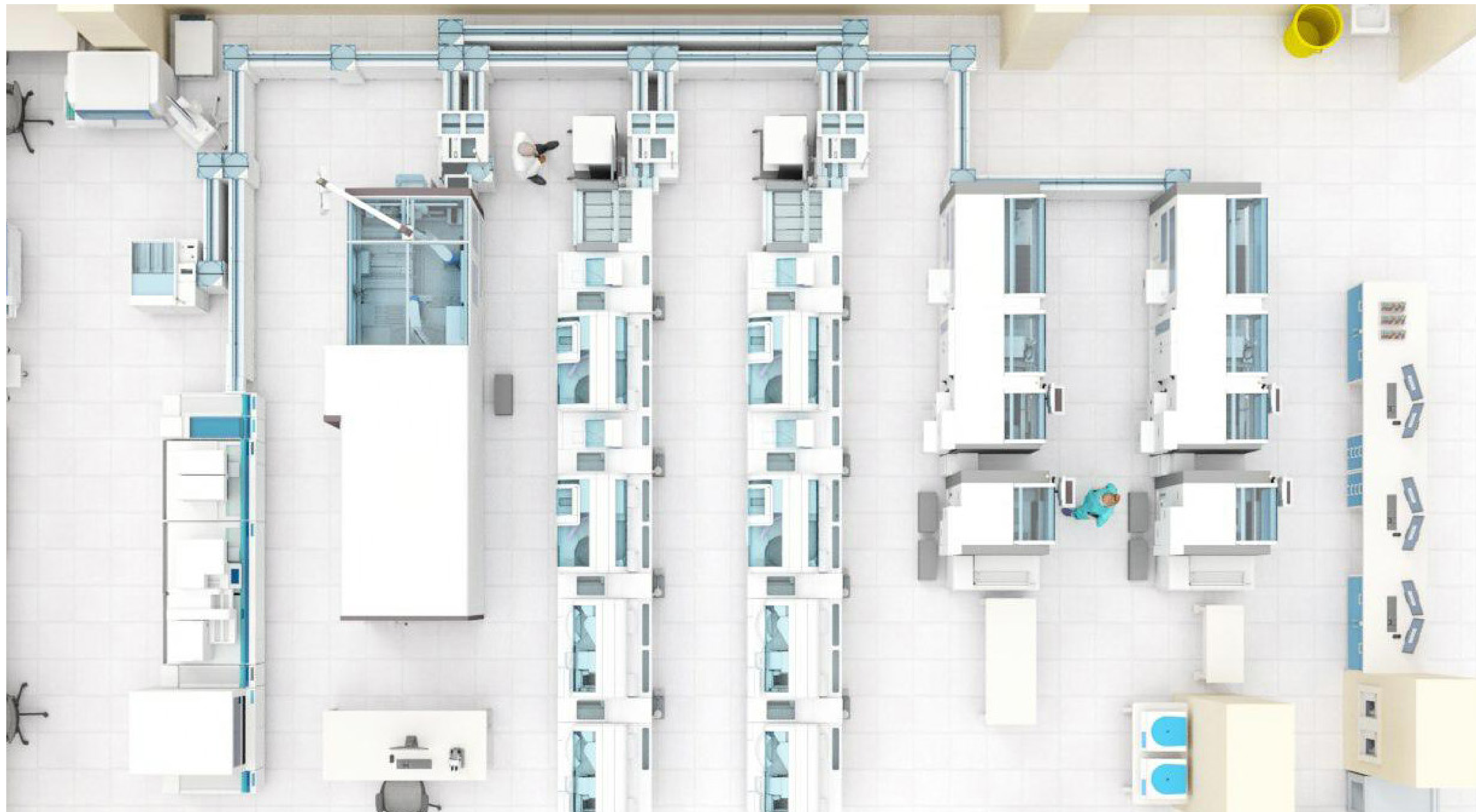
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Fully integrated core lab

The unique combination of system and data solutions now enables the East Bank core lab to handle send out testing from other laboratories.



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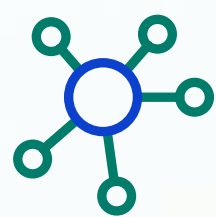
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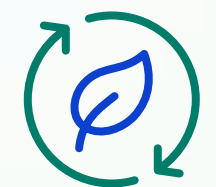
Simplify operations through systems integration

Next generation cobas® integration is foundational to simplifying lab operations. Reducing the number of vendors with different reference ranges and interpretations of results can reduce variations in care.

Roche further enables operational excellence across key measures:



Standardize the lab network



Improve sustainability



Maximize staff efficiency



Improve TAT for critical tests

* Clinical chemistry assay menu and reagent specifications analysis. Data on file. Source: Reagent method sheets Roche Diagnostics cobas c pack green, Siemens Atellica® CH 930 analyzer. Status as of July 2022

† Internal market research of immunoassay and clinical chemistry vendors (Roche and Siemens). Data on file.

‡ The stated data represents the respective minimum and maximum incubation times per vendor. Atellica Solution Spec Sheets, Operator Manual and excerpts from OM

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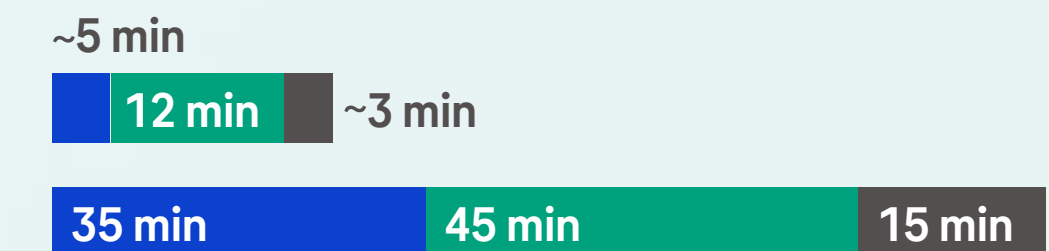
2.8x ↑
calibration stability*

2.6x ↑
onboard stability for clinical chemistry*

3.5x ↑
onboard stability for immunochemistry*

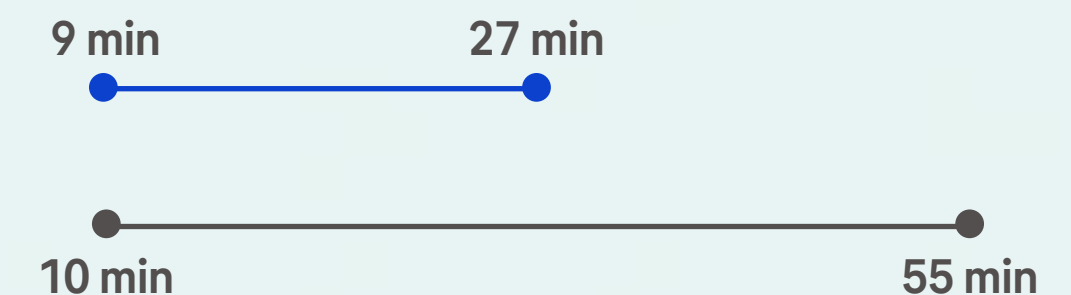
Daily maintenance comparison†

Roche cobas® pro
Siemens Atellica



Immunoassay (IM) incubation times by vendor‡

Roche cobas® pro
Siemens Atellica



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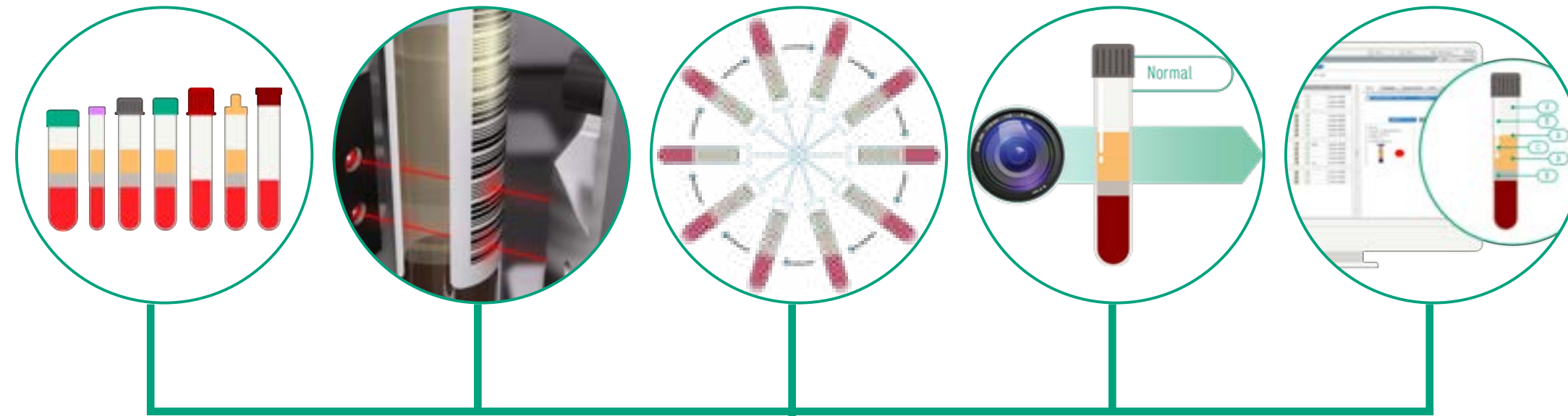
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cobas[®] connection modules



cobas[®] p 471 Centrifuge

1. Self-balancing centrifuge processes up to 495 samples per hour and dynamically interfaces with LIS to determine spin status based on location ID or cap color

cobas[®] p 612 pre-analytical system

2. Input buffers offer continuous loading for up to 600 samples
3. “Quality check”: tube type identification
4. Liquid level and volume detection
5. Spin status detection
6. Qualitative serum indices
7. View sample images on an instrument or in navify[®]
8. Aliquoter supports multiple sample types, including nucleic acid testing

Empowering data-driven decisions through lab analytics

Previously, M Health was not meeting TATs and unable to access key data to aid in optimization when using the LIS analytics. M Health tapped the power of navify® analytics to inform and drive its actions. Now they have access to insights in seconds to help identify opportunities to improve. Here are some of the key questions they asked:

How do we drive improvements?

Why are resulting times slowing down daily between 9–11 am during high volume?



Conclusion: M Health recognized that they were performing daily maintenance from 9–11 am, reducing capacity from two analyzers to one during the busiest time of the day.



Action: Change daily maintenance from 9–11 am to 7–9 pm, a less busy time of day.

How do we measure the current state?

Is analyzer use balanced?

M Health needs to ensure they are not overworking one analyzer, causing reduced result times or higher levels of downtime due to overuse.



Conclusion: Staff are manually loading onto 6K2 more often than 6K1 because it is closer to the centrifuge.



Action: Move the centrifuge to a neutral location and encourage balanced loading to maximize analyzer uptimes. Share results with staff.

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How do we identify opportunities?

Can more test volumes be added without impacting throughput for current patient testing?



Conclusion: We are only at 20% and 21.7% capacity for these instrument modules and can add anticipated volumes without impacting analyzer performance.



Action: Consolidate testing as planned to reduce the total cost of performing laboratory testing.

Can we modify our ordering volumes to maximize existing storage?



Conclusion: We could reduce onsite volumes of several supplies without the risk of running out between deliveries.



Action: Reset ordering par levels, reorganize the existing refrigerated storage, and avoid ordering an extra refrigerator.

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Results

Costs

Transformation delivers results

M Health met all three core reduction goals and delivered increases in standardization, efficiency, quality and resource optimization.



“The main indicator we track for just routine chemistry testing is the potassium turnaround time. Our goal is to have 85% of those results within 45 minutes, from collect to result. And after staff became acquainted and used to the routine operation, we meet that 90-95% of the time now.”

Graham Gregorich, Technical Lab Supervisor

Improved TAT



33%

Reduction of receipt to result

From 66 minutes receipt to result pre-Roche to 44 minutes after.

Increased testing capacity



411%

Increase in capacity at the Core Lab

From 1,396 samples per day pre-Roche to 7,141 samples per day, the Core Lab now supports over 12M tests per year.

Test volume growth



29%

Annual YoY growth since converting to a Core Lab

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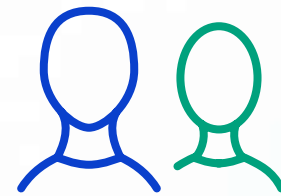
Patient-centric partnership

Results

Costs

Impact the bottom line

Since consolidating to a single core lab, M Health has experienced the following savings:



40 ↓

fewer FTEs needed through attrition



\$4M

annual savings on labor through attrition



\$5M

annual savings on operating spend



1

vendor to support 11 hospitals



“From a medical director point of view, I was most interested in the quality of the results that we would get and the reliability and the reputation of the company for important areas like the quality control within the company so the products that are delivered to the lab are top notch.”

Dr. Anthony Killeen
Director of Clinical Laboratories at the University of Minnesota Medical Center

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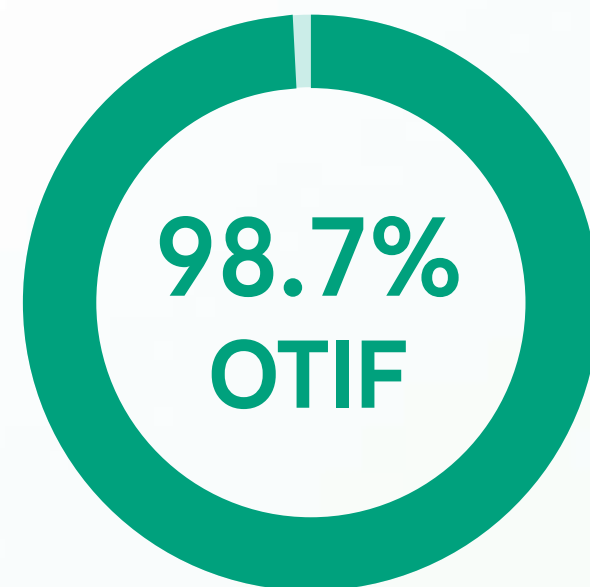
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The power of partnership

Shifting the RFP process to include partnership criteria with the traditional technical criteria played a key role in vendor selection and final solution design.



Supply chain certainty

98.7% OTIF
(On-Time-In-Full)



24/7 service and support

99% uptime across
core lab analytics



LEAN strategies

East bank conversion now supports both outpatient and inpatient testing while improving service levels to patients

Long-term, partnership-focused RFP process



“We’ve been very happy with the Roche equipment that we’ve been using now for over a quarter of a century [for clinical trials]; the results have been very stable over long periods of time.”

Dr. Anthony Killeen
Director of Clinical Laboratories at the
University of Minnesota Medical Center

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