Using Real-Time Analytics with AI to Align Clinical Lab and Pathologist Staffing in Advance of Daily and Weekly Changes in Patient Demand and Test Volumes

Presented by:

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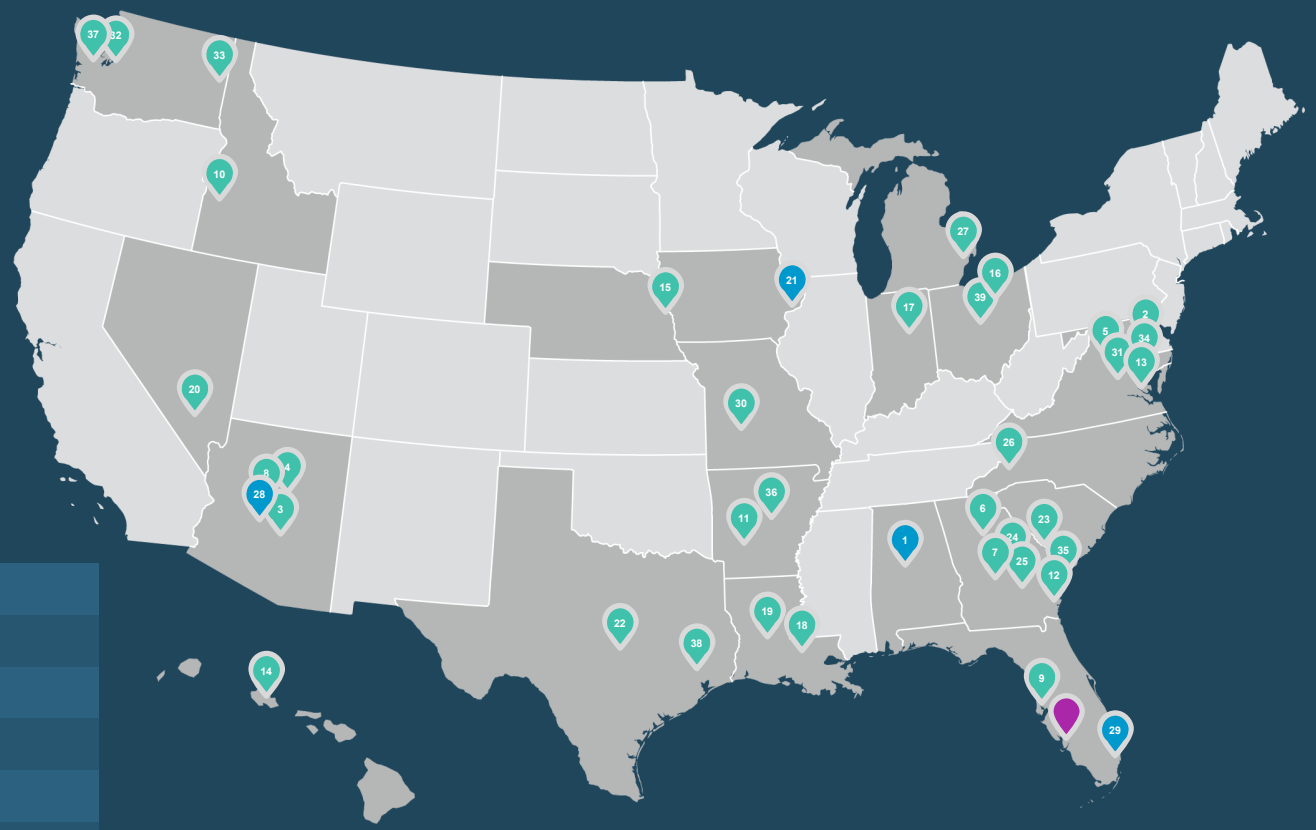
Agenda

- AON Vision
- Lab Industry
- Problem / Challenges of Understaffing
- hc1 Workforce Optimization
  - Origins
  - hc1 / AON Collaboration
  - How it Works
- Impact on AON
- Learnings
- Future Vision

AON Presence

1. Alabama Cancer Care
2. Bay Hematology Oncology
3. Cancer & Blood Specialists of Arizona
4. Cancer & Blood Specialists of Arizona Flagstaff
5. Cancer & Blood Specialists of NOVA
6. Cancer and Blood Specialists of Georgia
7. Central Georgia Cancer Care
8. Desert Hematology Oncology
9. Florida Oncology & Hematology
10. Gem State Cancer & Blood Specialists
11. Genesis Cancer & Blood Institute
12. Georgia Oncology Hematology Consultants
13. Greater Washington Oncology Associates
14. Hawai'i Cancer Care
15. Heartland Oncology & Hematology
16. Hematology Oncology Center
17. Hematology Oncology of Indiana
18. Hematology Oncology Clinic
19. Hematology Oncology Clinic Alexandria
20. Hope Cancer Care of Nevada
21. Iowa Cancer Specialists
22. Lone Star Oncology



23. Low Country Cancer Care
24. Low Country Cancer Care Vidalia
25. Low Country Cancer Care Waycross
26. Messino Cancer Centers
27. Michigan Cancer Specialists
28. Oncology Care Partners of Arizona
29. Oncology Care Partners of Florida
30. Oncology Hematology Associates
31. Oncology/Hematology of Loudoun & Reston
32. Panacea Oncology
33. Summit Cancer Centers
34. The Center for Cancer & Blood Disorders

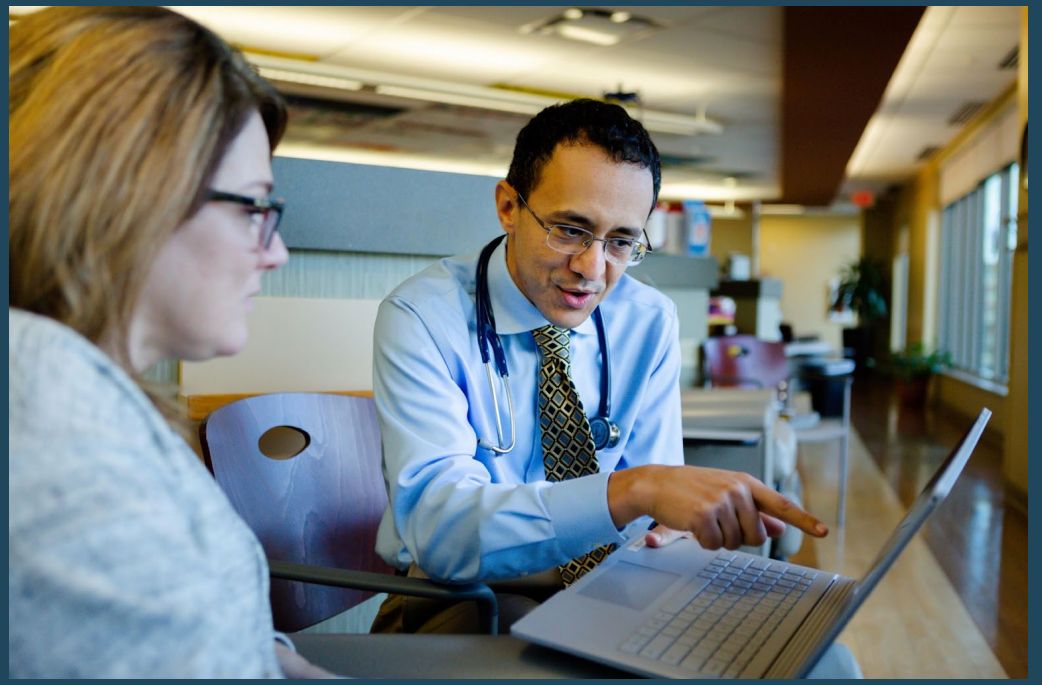
35. Trident PET/CT of Savannah
36. Triple Crown Urology
37. Vista Oncology
38. Woodlands Cancer Institute
39. Zangmeister Cancer Center

39 Practices | 240+ Providers | 110+ Locations | 21 States

AON Headquarters

AON Vision: Delivering Better Care Together

- AON is one of the fastest growing networks of community oncology practices in the US.
- We are an aligned partnership of dedicated oncologists and veteran healthcare leaders working collaboratively to ensure the strength and viability of equitable cancer care in community-based settings.
- Our mission is to preserve and enhance access to the highest quality, innovative and cost-effective cancer care in the communities where our patients live.



AON Vision: Personalized Medicine

Personalized medicine concept - uniquely identify individual need and provide that solution.

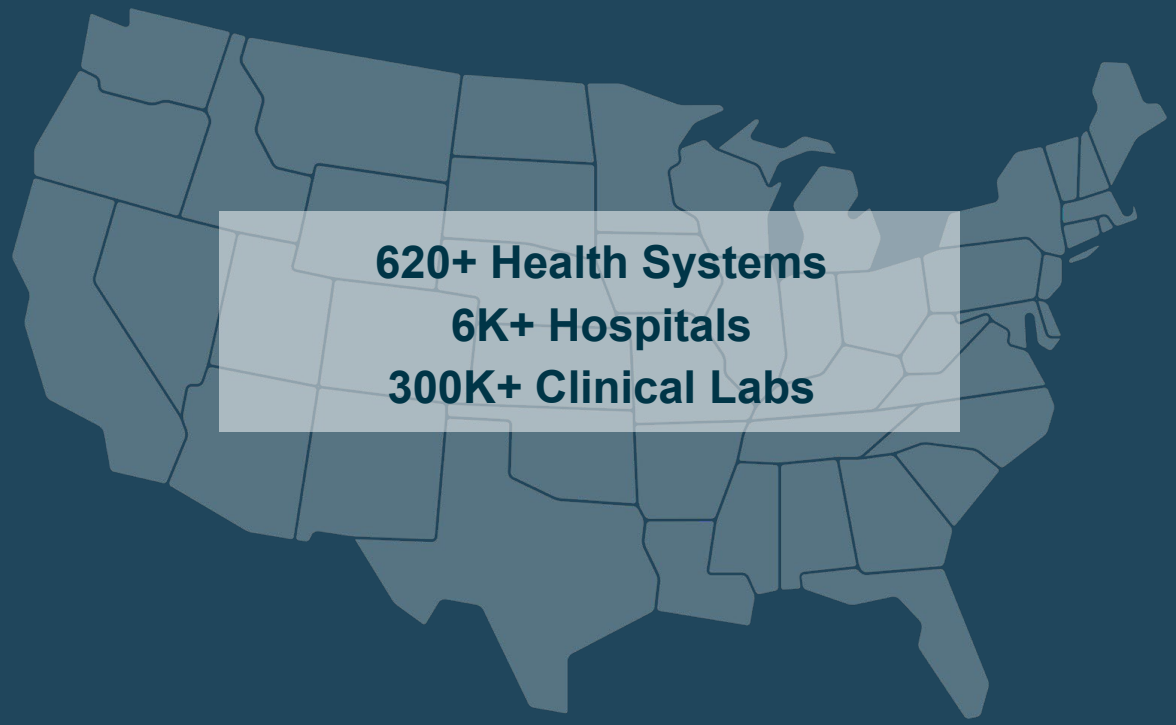
- Most expensive therapy in chemo or infusion is the wrong treatment
- Most drugs work in 4/10 people - figure out an average dose - practicing medicine to the average

Guide workforce and what needs to be done with the patient with their treatment

- Lab operations needs to match the offering of precision medicine
- How do I use talent in the lab to get the most bang for my buck?
- Best pathway to get patient what they need in the timing they need

The U.S. Laboratory Market

Total Lab/Health System US Market:



Key Insights*

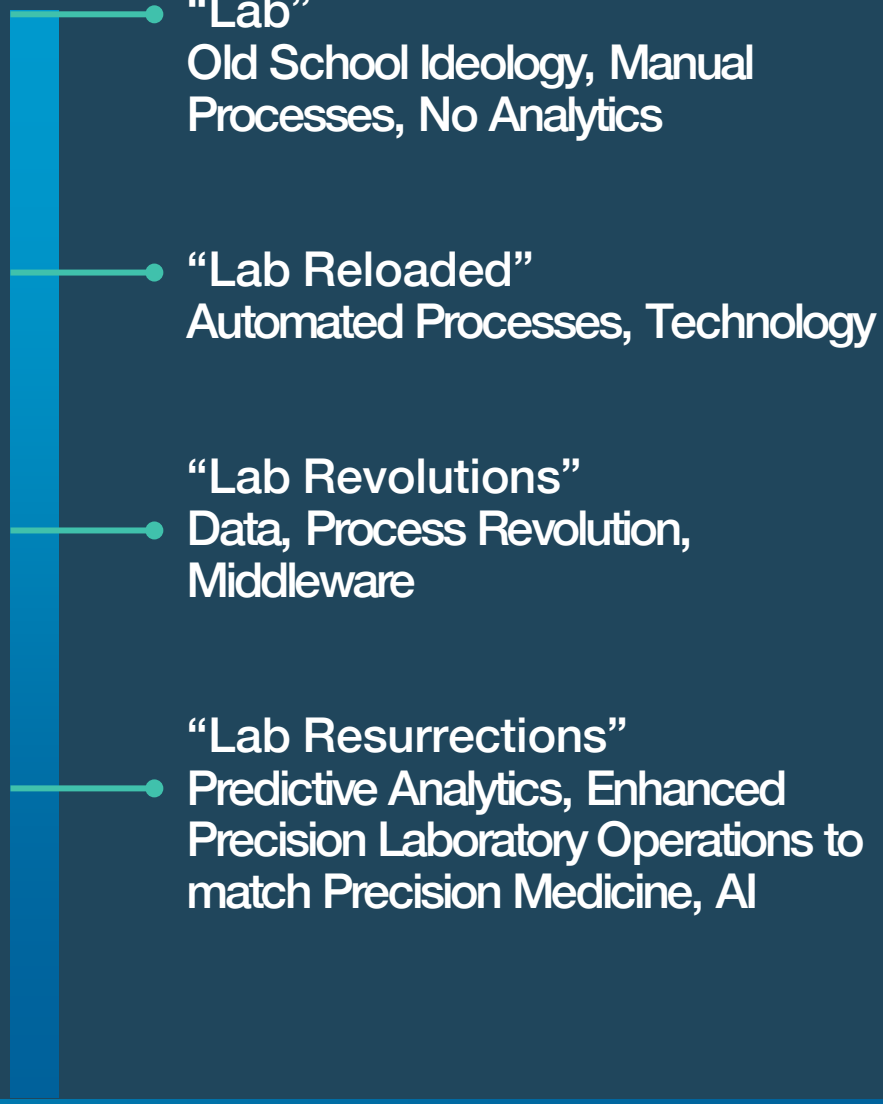
1. The U.S. clinical laboratory market was valued at $93 billion in 2022
2. $2B+ in Lab IT spend on LIS alone
3. Top Budget Priority: Tech investments to ease the labor shortage were cited as the top budget priority by 48% of laboratory executives

* Source: 2023 U.S. Laboratory Market Report

Lab Industry Evolution

- Fewer folks going into the lab market – puts more pressure on labs
- Cultural attribute – we have to start attracting staff and we need to facilitate the care to where technology is going or we'll be behind the 8 ball
- Doing more with "less" – Doing "better" with the same and creating "more"

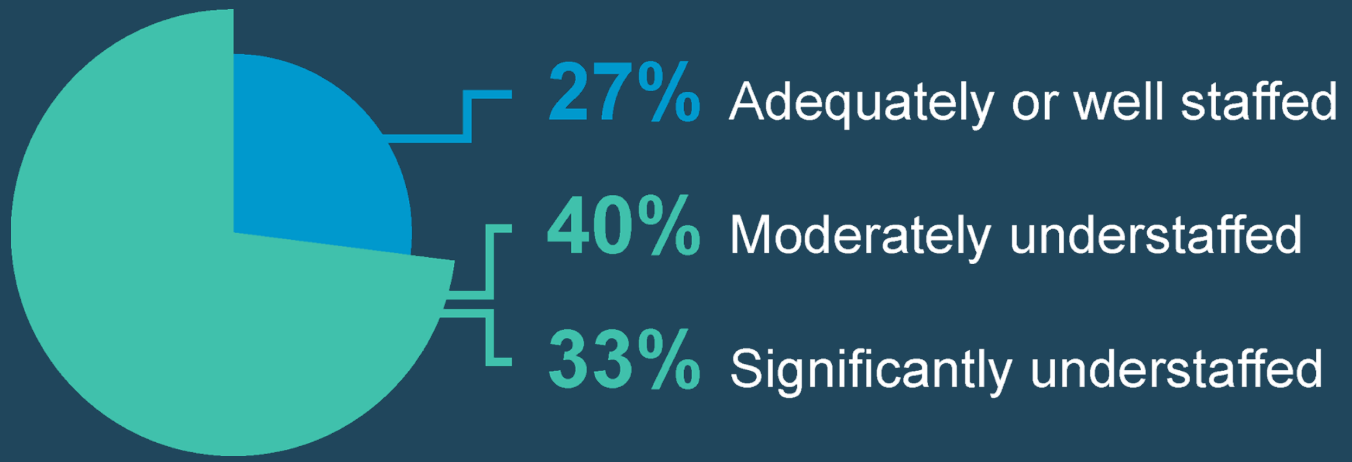
"We're preparing for the Future, not the Now."
Alti Rahman, AON Chief Strategy and Innovation Officer



Industry Problem: Understaffing

- Lab staffing has always been an area of focus
- "Do more with less" constraints year over year
- During the pandemic, it became a more acute pain point
- Lab testing & volume returning to normal… but staffing, retention, talent acquisition still an issue

73% of labs are currently understaffed.*



* Source: Mitchell, A. (2022 Jul 19). 2022 Wage and Morale Survey of Medical Laboratory Professionals. Lighthouse Lab Services. https://www.lighthouselabservices.com/2022-wage-and-morale-survey-of-medical-laboratory-professionals/

Three Major Challenges

Employee burnout and turnover

(People Impact)

Operational inefficiencies

(Patient Impact)

Contracted and overtime staffing

(Financial Impact)

The average cost to hire and train a new employee is $8k+.[1,2]

Poor TaT and delayed results can lead to a 43% treatment delay.[3]

Travel Techs cost 1.5x more than FTEs on average.[4,5]

1. Sandage, E. (2021 Mar 9). How Much Does it Cost to Hire & Onboard an Employee? Arcoro. https://arcoro.com/cost-to-hire-onboard-employee/
2. Vasconcellos, A. (2023 Feb 21). What Does It Cost to Hire an Employee? BND. https://www.businessnewsdaily.com/16562-cost-of-hiring-an-employee.html
3. Dawande P P, Wankhade R S, Akhtar F I, et al. (September 06, 2022) Turnaround Time: An Efficacy Measure for Medical Laboratories. Cureus 14(9): e28824. doi:10.7759/cureus.28824
4. Castanho, Gail. (2022 Feb 23). MLO's 2022 Annual Salary Survey of laboratory professionals. MLO. https://www.mlo-online.com/management/careers/article/21257623/mlos-2022-annual-salary-survey-of-laboratory-professionals/
5. Travel Laboratory Technician Jobs data via Vivian. https://www.vivian.com/allied-health/medical-lab-tech/travel/

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How hc1 Workforce Optimization Was Born

Pre-Pandemic | During Pandemic | Post-Pandemic

1. Staffing focus & challenges on productivity
2. hc1 Data Science team ramped up in 2019
3. COVID-19 pandemic exacerbated staffing challenges
4. Discussed ways to leverage AI/ML capabilities for staffing
5. hc1 Workforce Optimization using predictive model was born

Collaboration to Solve “The Problem”

The Problem

Employee burnout and professional dissatisfaction.

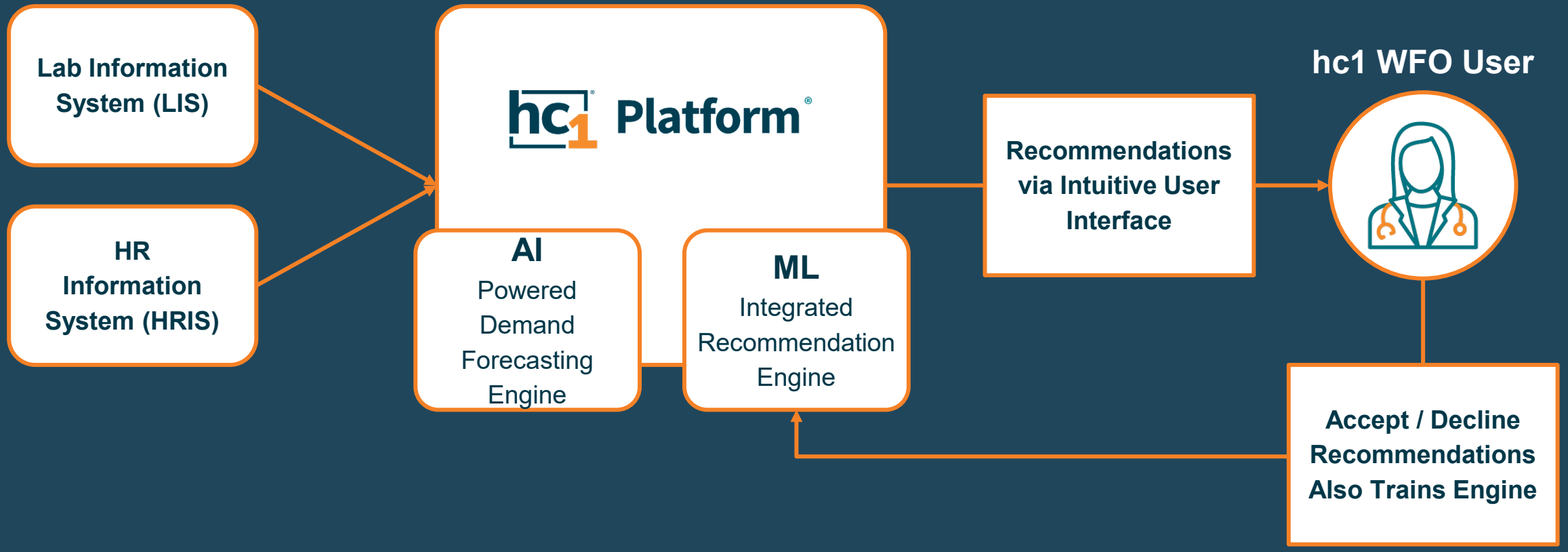
- Missing expansion opportunities in testing
- Inability to uncover spend/waste and staff utilization/productivity

The Results

- Satisfaction on lab KPIs
- Optimized staffing model for Ft. Myers AON lab
- Reduces costs/waste; Reallocates staff based on data points
- Real-time data analysis to optimize operational effectiveness
- Increases efficiency and productivity while remaining cost neutral
- Critical time to look at this area based on the current unpredictability
- Informed decisions based on intersection of timekeeping and lab data

Unique Approach Using AI & ML to Drive Outcomes

Workforce Optimization uses real-time data + AI to align clinical lab & pathology staffing in anticipation of changing patient demand from week to week.



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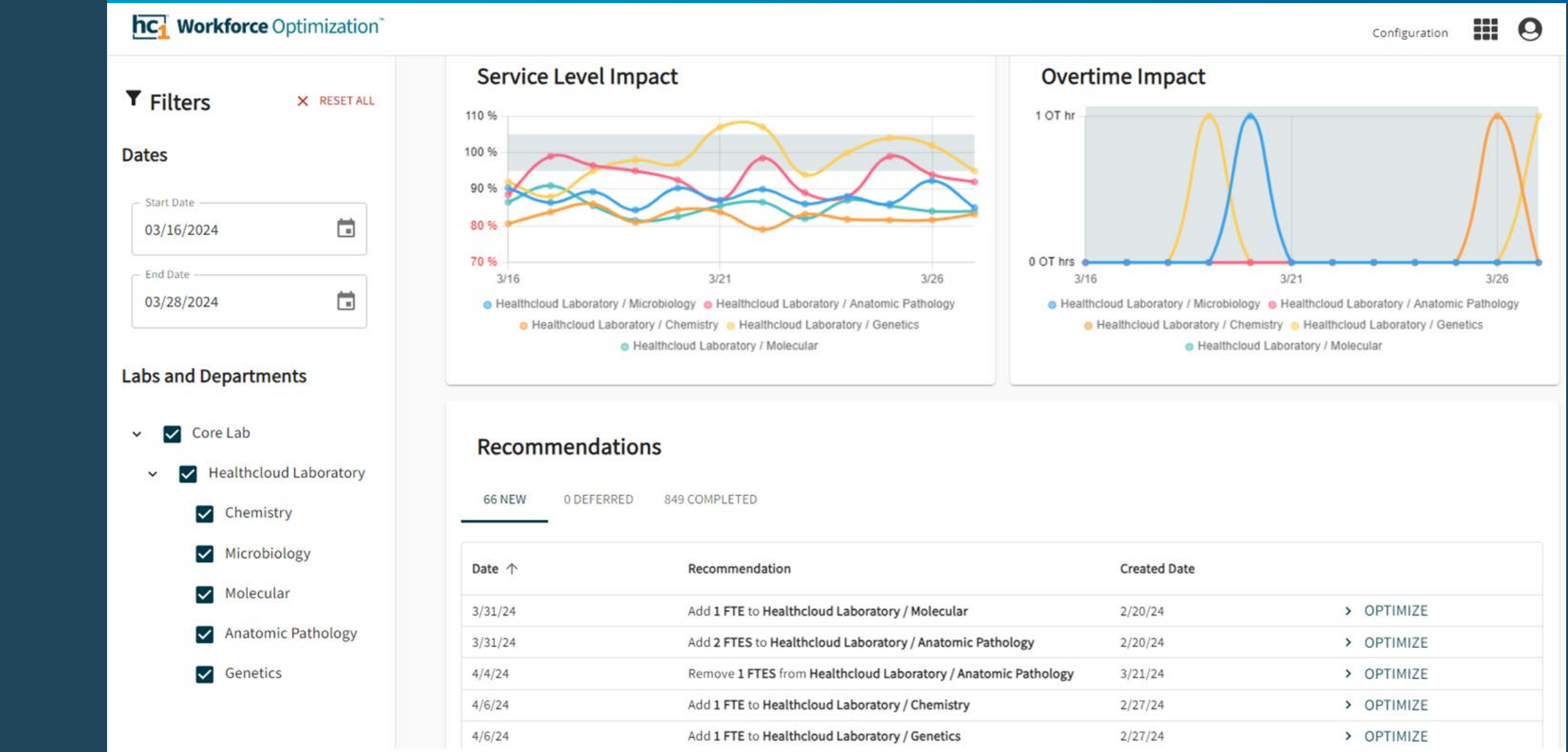


Real-Time Data → Predictive Analytics → Actionable Recommendations

How WFO Will Impact AON

- Helps understand DNA of workforce of my lab
- Pathology processes hard to quantify
  - Case assignment
  - Skillset assessment
  - Quality
  - TaT
- Tailor-made oncology lab approach for our tailor-made infusion solutions (Precision Medicine).
- "Trifecta"
  - Lab Operations (all staffing levels) – Effective workflow across all departments
  - "3P" – People, Process, Product (Physicians/Providers/Patients)
  - Bottom Line – Efficiencies, Cost consciousness (resources)

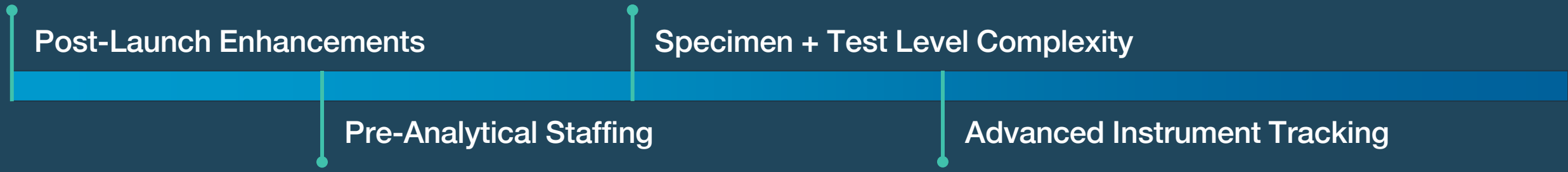
What We've Learned

- Outside the box thinking needed
- The way we "usually" do it mentality
- Workforce (talent) changed….work ethic changed
- Resources and processes didn't match need
- Target moved from Generalized to Precision Medicine

Vision for the Future

- Expansion beyond core lab – becomes even more critical to implement more of this automation and technology.
  - Need to assess preanalytical lab process (outputs are only as good as the inputs)
  - Need data and metrics around decentralized lab testing and processes
  - "Predictive Logistics" – predetermining how samples are transported depending on geographic area

hc1 Workforce Optimization Roadmap



Q&A

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RIGHT PATIENT.
RIGHT TEST.
RIGHT PRESCRIPTION.®