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Lab Perspectives Now and Next

A report on the evolving diagnostic landscape

Welcome to Lab Perspectives Now & Next, an overview of the key priorities and drivers shaping the decision making of laboratory leaders now and in the future.

The last two years have seen the work of diagnostic laboratories take centre stage as part of the Covid-19 response. Yet behind the headlines and before this health emergency, the importance of diagnostics has been steadily building as new technologies started to transform the diagnosis and treatment of chronic diseases.

As the world recovers from the pandemic, and attention shifts to how to create sustainable healthcare systems that deliver the best possible patient outcomes most efficiently and effectively, the role of labs will become pivotal. Lab leaders are already anticipating that they will be asked by clinicians to cover more diseases at higher volumes and need to have plans in place to meet this ask.

There are a number of questions that must be answered if they want to respond to this call:

- **Can labs build resilience in their diagnostic system to cope with surges in demand?**
- **Do they have the ability to identify future threats?**
- **Do they have the capacity, technology and knowhow to support a shift towards more personalised, preventative care?**

To explore these questions and discuss the biggest issues facing laboratories today, Hologic commissioned independent researchers to interview 88 key decision makers in purchasing and laboratory management across Europe, the Middle East and Canada. We wanted to gather their perspectives on the challenges they face today and what they anticipate the future will hold¹.

This report is based on the insights and perspectives that emerged from the research and explores five key areas of focus for labs:

- 1. Optimising processes for efficient workflow**
- 2. Balancing cost now with investment for the future**
- 3. Achieving speed and accuracy through automation**
- 4. Staffing for success today and tomorrow**
- 5. Embedding a culture of innovation**

We hope this report provokes ideas on how you and your team can handle the increased pressures of today, face the heightened expectations of speed and testing accuracy head-on, and set a path for future growth.

1: Optimising processes for efficient workflow

Our research revealed that workflow is the second most significant challenge lab leaders face, surpassed only by budget concerns². It probably comes as no surprise that Covid-19 exacerbated the situation with over half of decision makers (55%) saying the changes to workflow and processes brought about by the pandemic have been the most difficult aspects of their job³.

The challenge facing lab leaders

Of course, discussions about processes and workflow—whether within the lab or where diagnostics sits in the patient pathway—were already front of mind for decision makers prior to Covid-19. However, the desire to address and solve these issues has crystallised in the past two years.

Nearly a third of decision makers said improved lab operations and workflow has been one of the greatest successes since the onset of pandemic⁴. There is a drive to strengthen this further - the majority of lab leaders consider improving lab operations and workflow to be their top priority for the years ahead, outranking financial matters and departmental management⁵.

A shift towards greater use of automation was considered to be one of the most important ways of optimising workflow, by removing manual processes, increasing turnaround times and consolidating testing. Lab leaders recognised that they play a core role along the patient pathway and cannot afford to become bottlenecks. What's more, their ability to further streamline workflow, remove unnecessary repeat tests and increase performance will enable them to be more commercially competitive.

Steps to building resilience in lab diagnostics

“Central to building resilience in lab diagnostics is future proofing infrastructure to enable efficient and reliable delivery every day,” says Michael Bronsdijk, General Manager Benelux-Nordics at Hologic.

“As personalised, preventative healthcare becomes increasingly important to stem the growing burden of chronic diseases, labs need to balance the costs of today with investments for the future. Working in close partnership with suppliers can enable labs to scale and grow at a sustainable rate and implement the system change that can transform their operations.”



2: Balancing costs now with investment for the future

Staying at the cutting-edge of technology enables staff to meet the ever-changing needs of a dynamic lab environment. This naturally requires investment and the momentum created by the pandemic has demonstrated that investment can pay dividends. However, working within tight budgets is not always straightforward. Managing budgets and cost constraints is the top challenge facing lab leaders⁶ and their second most important organisational priority⁷.

We look at the cost pressures that labs are up against and how they can work with suppliers to co-create bespoke solutions, to chart a scalable and efficient path to growth.

The pressure to ‘do more for less’

The pressure to ‘do more for less’ was a recurring theme when decision makers spoke of budget constraints and the importance of value for money. However, despite these financial tensions, there was clear consensus that patient care came first, with lab leaders always expressing their commitment to quality and accuracy. The importance of getting the right results to the right patient at the right time within cost drove all actions.

Ensuring quality performance at each stage of the diagnostic process was foremost in decision makers’ minds. Some of the positives stemming from Covid-19 were increased budgets and investment cited by 23% as one of the greatest upshots since the pandemic’s onset.⁸ It is clear that the role of the diagnostics sector is being recognised as awareness and understanding around its relevance to our daily lives has increased.

Being at the cutting edge is a necessity

Laboratories operate in a highly competitive environment with the drive to increase capacity and reduce turnaround times a recurring pressure. Having the flexibility to invest in cutting edge technologies was regarded as being vital in meeting their contractual obligations and to improving decision making along the patient pathway.

Digitalisation and data integration are helping optimise workflow and efficiency in the lab environment. This has accompanying benefits in improving working conditions and raising job satisfaction as clinicians can work at a more considered pace while throughput is increased. This in turn increases profitability allowing labs to reinvest in their staff and facilities creating a virtuous cycle which ultimately translates into better patient outcomes.

Long term partnerships to enable scale and growth

“Hologic continually invests in research and development to improve our instruments and assay portfolio to meet the rapid turnaround times that our customers require. We focus on automating manual processes so labs can increase efficiency and flexibility, helping leaders do more with less and meet productivity, reliability and capacity targets,” said Michael Bronsdijk, General Manager Benelux-Nordics at Hologic.

“Choosing to invest with us is the start of a long-term partnership. One which enables us to grow and scale together and will keep you at the forefront of the ever-changing field of diagnostics as your testing needs change.”

3: Achieving speed and accuracy through automation

With investment in staff training and the right technology in place, labs can automate and scale to meet demand with faster speed and higher accuracy. Indeed, the possibility of faster and automated test processes emerged as one of the biggest trends to impact labs in the mid- to long-term from our research⁹.

The pandemic increased awareness of, and respect for, robust testing capabilities and lab leaders believe now is the time to push for innovation.

With that in mind, let's explore what automation looks like in the lab of today and tomorrow, and examine the opportunities it can create to lead to better patient care.

Operational excellence through automation

Unprecedented demand is the 'new normal' in the diagnostics world, which means time is always of the essence. However, the need to work at speed should never be at the expense of accuracy of the diagnosis. Lab leaders are looking to platform consolidation and testing integration as a way to improve performance and reduce turnaround time.

By removing steps along the way and introducing automated technology that offers multiplexing and processing flexibility, labs can effectively streamline operations.



Building breadth and scale with a supplier

As diagnostic capabilities improve, decision makers told us they need a partner that can help grow their service portfolio, to get more complete information from assays and respond to emerging challenges. As laboratory automation becomes more capable and more widely adopted, lab leaders are increasingly looking to deploy a single platform that avoids the duplication, delay and waste that can occur with multiple platforms.

“Hologic has extensive expertise in helping labs build highly flexible and scalable processes. Our high-throughput system with continuous random-access loading removes many of the restrictions of batch processing,” said Michael Bronsdijk, General Manager Benelux-Nordics at Hologic.

“With on-demand testing we can help deliver clinical confidence when needed most, from a single patient rapid result in an hour to population level screening. Our high multiplex capability assesses maximum targets simply and effectively in a single sample.”

4: Staffing for success today and tomorrow

While technology is transforming the lab environment at a formidable pace, it is important to recognise that people remain at the heart of the operation. Highly skilled staff are one of a laboratory's greatest assets and having the right team in place is key to success. Yet recruitment and retention are cited as a top three challenge by decision makers¹⁰.

Here we explore the factors behind that challenge and solutions which can help to create the right conditions for staff to stay and succeed.

A workforce overlooked

The pandemic has exacerbated the financial pressures and difficult job market, making it harder than ever to attract the right talent. Once staff have been hired, the challenge then becomes how to retain them, with investment required to train and develop their expertise.

Sustained, working pressures on top of existing skills gaps further heightens the problem. Retaining a satisfied and motivated workforce is a recurring challenge within the diagnostics sector, but one which decision makers must take steps to overcome today to ensure their laboratory is fit for tomorrow.

Only 7% of the C-suite executives and lab leaders we spoke to feel their organisation performs very well when it comes to staff training and retention¹¹, pinpointing a clear area for further focus and attention. competitiveness within the industry to attract skilled talent was noted as fuelling the problem, with employers investing in employee training only to then lose them to a competing organisation.



Creating the right environment by deploying new technologies

New technology can deliver countless benefits in the laboratory, not least improving the conditions for staff and providing the right environment for them to feel motivated and thrive in their roles. Automating manual processes and using artificial intelligence (AI) to improve workflows and efficiency frees up their time. This allows them to put their valuable skills to best use, analysing more complex cases, whilst also continuing to develop their expertise.

Additionally, technology can support the shift to remote working. Remote-based AI-driven imaging in cervical screening, for example, opens up new flexible, remote working opportunities through multiple user review and consultation over the Internet. This support for a distributed workforce helps give people the space they need to strike the right work life balance and feel more satisfied at work as a result.

Supporting growth through continuous professional development

Today's workforce has high expectations when it comes to training and access to continuous professional development is important. With advances in testing technology evolving so quickly, staff need to be supported so they can keep up with the pace of change.

Employees generally relish the opportunity to work with the latest technologies, finding it motivating and exciting, and training for the laboratory community is key to stay ahead of the game. Our research revealed that 62% of those surveyed want support from their diagnostics supplier with staff training in the year ahead¹².

“We are proud of the training and ongoing support we provide to our customers for our diagnostic solutions either in country or at our Learning and Experience Centre in Brussels.

We endeavour to make our equipment and software intuitive, accessible and reliable so clinicians never have to worry about whether the technology works. This peace of mind we strive to deliver lets them focus on the job at hand, namely providing exceptional patient care day after day,” said Borg Vanden Berghe, Director Sales Training & Development.¹³



5: Embedding a culture of innovation

Decision makers in the field are excited by the vast potential for innovation, hoping to explore on-demand testing, overcome antibiotic resistance and decentralise the lab to bring the diagnostics experience closer to the patient. However, when pushed, the top trend they were most excited about was the potential of AI¹⁴.

So what can leaders do to foster a culture of innovation in the lab, particularly when day-to-day pressures often end up taking priority? We look at some of the latest technological advancements moving the dial in diagnostics and how leaders like yourselves can stay on the front foot when it comes to innovation.

Keeping up with the pace of change

We are living through a golden age for technology and innovation, brought about by advances in connectivity and computing power. Lab leaders said they have an obligation to implement cutting-edge technology to fulfil the evolving needs of their clinicians.

However, this pace of change can be daunting and knowing where best to invest makes it difficult for labs to stay ahead in a competitive market. That is probably why 72% of those we surveyed said they wanted support from their diagnostics supplier on what new technologies could be used to aid speed and efficiency for the year ahead¹⁶.

Digitising diagnostics to give you the edge

When you start your innovation journey, it is important to think through how digitalising diagnostics could give you an edge, whether that is through automating testing to free up time or delivering more accurate test results. It is also vital that any investment considers the needs and wants of the clinicians because their performance with the equipment will be the difference in whether a project is deemed a success.

AI is starting to transform what is possible in diagnostics. The ability to rapidly analyse test results, build complex diagnostics models and highlight areas of concern are helping labs evolve their practice, accelerate and improve patient detection, diagnosis and treatment.

We recently put this into practice with a pilot at University Hospital Monklands, Scotland, that used AI to analyse digital images of HPV positive cervical smear slides¹⁷

“Preliminary results from the pilot are promising, as the team at University Hospital Monklands has increased capacity by around 25% in the slide assessment and improved analysis turnaround times, as well as allowing screeners to dedicate more time to training on the latest technologies and dealing with difficult-to-diagnose cases.

We are now undertaking a retrospective study, using Hologic’s digital cytology system to test its performance against previous known results. This will then provide the clinical data to make a recommendation on the use of digital cytology in the cervical screening programme in Scotland.

Through AI and digital diagnostics, we have the potential to improve outcomes for women not only in Scotland, but around the world,” said Allan Wilson, consultant biomedical scientist at NHS Lanarkshire.¹⁵

Summary

From staffing to investment, automation to efficiency and innovation, the challenges in the diagnostic laboratory environment are numerous, but they are far outweighed by the opportunities.

There is vast potential for labs to play a significant role in shaping more sustainable healthcare systems for the future, supporting better patient health outcomes.

Realising this potential relies on labs and suppliers coming together to find solutions to challenges and optimising operations for growth and success.

We look forward to discussing how we, as an innovative diagnostics supplier, can partner with you to help your lab reach its full potential in a highly dynamic landscape.

To find out more about Hologic's diagnostic solutions, visit:

www.hologic.com

If you would like to discuss the challenges outlined in this report and your lab's needs both now and in the future, contact your Hologic representative:

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About the research

This report draws on qualitative research conducted by an independent research provider on behalf of Hologic.

The first study aimed to understand the challenges facing diagnostic laboratory decision makers across Europe, Middle East, Africa and Canada (EMEAC) and was conducted in February and March 2020. 88 interviews took place with participants drawn from Canada (5), France (12), Germany (12), Italy (10), Saudi Arabia (8), Spain (11), Sweden (7), the Netherlands (3) and the UK (20). They identified as C-suite executives (56) and Head of Lab, Lab Director or Lab Manager (32) – all with involvement in management and purchasing decisions for their laboratory.

The second study was conducted in December 2020 – January 2021 with the objective of understanding the impact of Covid-19 on laboratory decision makers, including challenges, successes, channel use and supplier relationships, and mid to long term effects. 60 interviews took place with participants drawn from Canada (4), France (9), Germany (9), Italy (6), Saudi Arabia (5), Spain (11), Sweden (4), the Netherlands (3) and the UK (9). They identified as C-suite executives (41) and Head of Lab, Lab Director or Lab Manager (19) – all with involvement in management and purchasing decisions for their laboratory.



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