AN EXECUTIVE DISCUSSION

# Excellence in Laboratory Medicine: A Catalyst for Healthcare Transformation

## INITIATIVES AND WINNING EXPERTS

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## GUEST EXPERTS AND HEALTHCARE LEADERS

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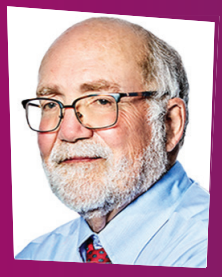

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Around the world, healthcare organizations are continually challenged with improving the quality of care they deliver while confronting rising costs and increasing numbers of patients presenting with chronic diseases that consume greater resources. The COVID-19 pandemic amplified these challenges, as most health systems had to rapidly adapt to ensure that patients continued receiving quality care in the face of the increased risks posed by the virus. Collaboration across medical disciplines and specialties to create pathways that improve care is vital to the innovations needed to address the complex and ever-changing healthcare environment. A particular asset that has often been overlooked in strategic planning discussions is laboratory medicine, even though the information and insights garnered from laboratory diagnostic tests have the potential to significantly improve and advance patient care.

The UNIVANTS of Healthcare Excellence awards recognize the role and value of laboratory medicine in elevating patient care. This global prestigious program inspires improved patient care by spotlighting and celebrating the exceptional outcomes attained by multi-disciplinary clinical teams whose initiatives have had a measurable impact on patient care and the health ecosystem. Several top healthcare organizations, IFCC, AACC, EHMA, Modern Healthcare, HIMSS, NAHQ, IHE and Abbott, have partnered together to develop and sustain success for the UNIVANTS of Healthcare Excellence award program, which is celebrating its 5th year.

Fawn Lopez, publisher of Modern Healthcare and vice president of Crain Communications, sat among experts and healthcare leaders when interviewing several members of the top three winning teams from 2021 awards. With the goal of exploring their best practices for streamlining care delivery and strengthening the experiences of both patients and clinicians, the discussion focused on how strategic collaboration across disciplines, including the core laboratory, can enhance patient lives, demonstrably improve healthcare delivery and inspire further transformative work by care teams around the world.


**Fawn Lopez: A collaborative approach to clinical decision-making has the potential to improve patient care and outcomes. Understanding how laboratory insights can be harnessed to advance care, what is your approach to breaking down silos and facilitating collaboration across departments and roles?**

**TIMOTHY HERSOM:** At Banner Health, we have a laboratory clinical consensus group that invites physicians and clinical staff from across our system to bring issues forward to us and discuss those issues. This particular project has allowed us to build those relationships and trust, so much so that the other departments want to get more involved. We're getting calls from them saying, 'We want to do this again. Let's try this process on this particular project.'

**SANDI STOUDENMIRE:** The need to adapt quickly to pandemic-related issues broke down a lot of barriers, and people were willing to change in ways that they never had before. There's an opportunity to continue growing from that, and I plan to take full advantage of it. But it is not easy developing a tool when you have multiple team members involved, so it has to be a passion project. Our initiative became a passion project for the stakeholder from our IT team, Stephanie Flippin, whose title is Epic analyst. She follows Dr. Guichard's clinic, she studies his workflow, and she is constantly tweaking the process to improve.

## TIPS FOR SUCCESS

### Automatic blocking of repeat testing

can result in significant financial savings for healthcare organizations. At Croydon University Hospital, by ensuring that the same individual is not tested for HIV more than once in a six-month time frame, the cost savings that have been generated amount to about 160,000 pounds. This is in addition to the savings realized from minimizing late presentation of HIV and costly late-stage treatment.

> **"A major indicator of success was the effect of the project on our staff. They were dropping like flies, quitting, stressed out. Our rapid performance improvement initiative alleviated much of the stress they were experiencing and kept critical staff with us to continue delivering patient care."**
>
> – TIMOTHY HERSOM

**FL: While managing competing priorities and limited bandwidth, what enabled your teams to identify specific areas for improvement and what was the outcome of the initiatives you implemented?**

**DR. IAN CORMACK:** The need for improvement arose because Croydon is an area of extremely high-prevalence HIV. Not only that, but we had the highest rate of late HIV diagnoses in London in 2012. When patients present late with HIV – when their immune system is very weak – they are complex to manage. It's a lot of work for us, it's very dangerous for the patient, and it's also expensive for the hospital. I've been working on changing that since 2005. In May 2020, we received the funding to launch opt-out HIV testing in our emergency department. We've been testing 40,000 patients per year, sustained for two years, at a testing rate of 97%.

**DR. JASON GUICHARD:** Our initiative originated from the fact that Greenville Memorial has two advanced heart failure physicians, and we have 40,000 patients. That's a hard mountain to climb. So, it's important for us to see the sickest patients first. We worked flags into the EMR so that if a patient hit a high-risk score, it would flag them to indicate the need to consult us in the hospital, because we have a hospital presence as well as an outpatient office presence. Then, upon discharge, there was an automatic referral for all these high-risk patients to come and see us. That's one area where the strength of our risk-scoring

## TIPS FOR SUCCESS

**IT contributions,** such as automatic flagging or automatic test orders, help to mitigate the potential for bias. In Prisma's initiative, for example, automatic referrals to advanced heart failure specialists based on risk score help to offset assumptions that older patients might be ineligible for certain treatments. The risk score was independent of age, race and gender, enabling Prisma to realize a 14% increase in clinic visits within the Black/African American population.

initiative showed itself: running all these things in the background to lower the administrative and attention burden on physicians and providers inside and outside the hospital, to get patients in to see us.

**KIMM WUESTENBERG:** For Banner Health, the opportunity for improvement came about at the start of a significant pandemic surge. We had a COVID-19 crisis in our state, so we had an increase in test volumes and also an increase in our patient census. At the same time, we were suffering from loss of our staff due to the Great Resignation. We were short-staffed on the nursing side as well as on the laboratory side, and we found that physicians were having a difficult time getting all their information prior to morning rounds, so planning continuity of care was quite difficult. Physicians started duplicate testing for STAT orders, which caused even more bottlenecks. So, our team met to implement integrative process improvement methodologies. As a facilitator, my role was initiating that discussion, brainstorming for solutions, and then finding one that would work for us. We ultimately implemented a new practice which included an improved communication process throughout the house and altered scheduling for laboratory collections.

**FL: All three of your initiatives involve improving timeliness and accuracy of diagnoses that empower the care team to provide the patients the level of care they need. How does efficient, expedient clinical decision-making transform healthcare within your communities?**

**IC:** Improved decision-making has transformed healthcare for our community by reducing AIDS-defining illnesses. From 2005 to 2010, our database showed that 78% of people who were undiagnosed with HIV and admitted to the hospital as an inpatient had an AIDS-defining illness. Post-implementation, we have reduced that rate to just 4%. We are catching HIV diagnosis in people before they present with a catastrophic, life-changing condition. Instead of that patient having an AIDS-defining illness, and therefore, a long admission – the average stay would have been 35 days – that changed to just 2.4 days per patient in the first round of COVID-19. None of our newly diagnosed patients ended up in intensive care [as opposed to 15% previously], so we freed up those resources for other patients.

**LINDA CHEYENNE VACCARI:** Outside of our newly diagnosed patient group, one of the most direct impacts of our efforts to facilitate improved clinical decision-making at Croydon is the reduction in onwards transmission. Just in the first year of the program, there were at least seven regular sexual partners of newly diagnosed patients who were confirmed HIV-negative through contact tracing that was done after diagnosing the index patient. Obviously, that is an enormous cost saving to the community, but it also has an exponential effect in terms of reducing transmission in the community.

**DR. ALEX CARTERSON:** I'm especially interested in how this has benefited the community, because HIV and AIDS-defining illnesses have such a stigma and so many other aspects of morbidity and mortality. I'm also thinking of extended economic benefit of people being out of work, of not being at their jobs, not being able to care for their family. There is a ripple effect in the community in general.

**JG:** We were just beginning to use our EMR to mine data and look for high-risk patients, so we took advantage of that, using a cluster of abnormal laboratory values and abnormal echocardiogram imaging values – all the high-risk things that trigger people to be classified as worsening heart failure or advanced heart failure. Right out of the gate, we identified about 40,000 patients at risk, and then applied our risk-scoring tool, which used about 16 different parameters. Instantly, we were able to see the wide scope of severity of heart failure within our system, and we were able to use that to target medical interventions. It meant the right patient getting the right therapy at the right time, on a large scale.

**KW:** With our initiative, we were able to get our morning results ready for the physicians to review by 7 a.m., which helped with their discharge planning for patients. They were able to decide in a timely manner whether to continue treatment in the hospital, perhaps discharge home, or find a skilled nursing facility or a rehab center – whatever a patient needed. So, it was really helpful with increasing throughput, reducing bottlenecks,

> **"One of the barriers in HIV testing is the awkwardness in talking about it because of fear of upsetting the patient. Opt-out testing normalizes and massively destigmatizes the discussion around HIV testing, and it means much increased awareness of the natural history of HIV. It enables understanding and realizing, as a general physician, that it can present in all these different ways."**
>
> – DR. LINDA CHEYENNE VACCARI

and improving the team's workflow. Our 1 p.m. discharge has improved by 35%, so we are able to open those beds to other patients coming into the facility for care. This was at the start of the pandemic – during what ended up being the largest pandemic surge that Arizona had seen – so it was a crucial time for this to take place.

**FL: Lab medicine is often considered backbone of quality care and positive outcomes, but the insights are often under-utilized in strategic planning and clinical pathway changes. What are important strategies for leveraging laboratory medicine to improve success?**

**SS:** Leveraging laboratory insights to improve patient care requires lots of dedicated time from stakeholders, but also involvement by leadership. We had the chief medical information officer involved from the first meeting to discuss the initiative. He saw the opportunity to extend the platform across multiple disease states. It gave us permission from the top – from the beginning – to take on our heart failure initiative and continue that work.

**JG:** In heart failure, there's a lot of research identifying high-risk parameters. We used a cluster of laboratory markers that have all been shown previously to be good markers for worsening heart failure. Elevated creatinine, brain natriuretic peptide, troponin, and blood urea nitrogen (BUN) are bad in heart failure, indicating liver congestion as well as other things. The other lab marker we use is chloride — low chloride is a signal of diuretic resistance — and on the imaging side, we used echocardiography to assess ejection fraction and cardiac filling pressures. So, by marrying laboratory medicine and imaging medicine, we were able to identify patients at risk and increase the number of high-risk patients being seen by about 48%.

**DR. ROBERT CHRISTENSON:** That's a great example of how you can guide therapy with your metrics. The lab can do basic metabolic panels (BMPs) and creatinine tests and all the other tests we've talked about, but unless we can partner and have that used correctly – like in what Croydon is doing with opt-out testing and in what Prisma is doing for heart failure – then the positive implications on outcomes are not realized. The lab really has to partner with clinicians because they are the ones who will make the decisions about how to use these lab results.

**KW:** I am a clinical laboratory scientist who moved into the lab quality and then transferred over to hospital-wide quality, and having that experience really allowed me to foster collaboration. Having worked in the lab, I know how efficient they are. They're very on top of KPIs and processes and ensuring their turnaround times and quality of results are great. I was able to utilize that background to bring the four teams together and establish effective communications, and our nursing teams were impressed by the laboratory – how quickly they were able to move and make adjustments, their flexibility, and their Lean Six Sigma thinking. It was great to be in that position to showcase what the lab does.

**FL: In your programs, how did minimizing acute care utilization ultimately help to reduce stress and mitigate losses from a financial perspective?**

**TH:** With the pandemic, everybody's financial resources were stretched to the limits. It was hard to think of a solution that would not stress those resources and our staff further, so we developed a rapid cycle improvement process to decrease overall patient length of stay about 2% through incremental changes. Anytime you can reduce length of stay, it's a great accomplishment; the return is phenomenal. In addition, we realized a 36% improvement on the timeliness of patient discharge before 1 p.m. Getting patients out of the hospital during the pandemic was critical, as we had patients in the ED waiting for beds. Again, these changes were not monumental, but the return on investment was significant.

**JG:** We reduced ER visits by 59%, and each visit, on average, is about $866. As Tim mentioned, unloading the ERs – especially during the pandemic – was a big deal. For any sort of project, you have to show it's financially responsible for the hospital. Demonstrating financial benefit is even better, especially with a project like ours that requires lots of resources. We had to justify those FTEs and the time that they spent.

**"My advice is to study the problem and do your homework. Identify the barriers and be innovative and pragmatic in overcoming them – but also learn from existing programs. Identify effective champions in each key department of the team, and play to your strengths. Then, in overcoming barriers, take a transformational approach rather than an autocratic approach."**

**– DR. IAN CORMACK**

## TIPS FOR SUCCESS

**From Dr. Robert Christensen's perspective,** it is essential to present foundational, longitudinal data at the outset — even before implementation — to prove how the changes you make are effective. He said data must be embedded in the design of the initiative, especially to help demonstrate effective and responsible use of health system resources.

**FL: What advice would you give to other care teams and leaders who are attempting or considering similar initiatives, and what hurdles should they anticipate?**

**LV:** Take full ownership of your program. As much as success is about collaboration, sharing of ideas and changing culture, if you don't have that ownership and a very clear idea of what everybody's role in the chain is – where it starts and where it ends as well – then I think it can get diluted and become less effective.

**KW:** My advice to other organizations is courageously innovate. If there's a particular methodology that organizations are used to, just be aware that they all stem from total quality management. There are so many different methodologies for performance improvement, and when we can innovate and integrate these methodologies, it's amazing what can be achieved.

> **"I want to applaud the winning teams for breaking down barriers and reaching across floors to achieve healthcare excellence."**
>
> **– DR. ALEX CARTERSON**

**Can you share one powerful example of how your care initiative positively impacted a patient?**

**JG:** The analysis and risk score allowed us to drill in for the first time on some of the sickest patients. One patient who had been hospitalized every week for a couple months with multiple ER visits in between was found to have the highest possible risk score. This was an end-stage heart failure patient who we were able to identify and transition into end-of-life care, stopping that cycle of constant back-and-forth between the ER and the hospital. That's important, and it is what the initiative's success enabled us to do.

**IC:** A Caucasian lady in her 50s who had no perceived risk factors for HIV and was diagnosed through ED testing said to me, 'I thought I was losing my mind. I was becoming forgetful, I couldn't walk properly, I've been seeing different doctors and nobody knew what was wrong with me.' After diagnosis, she started HIV treatment and said her mental state went back to normal. She narrowly avoided developing severe cognitive impairment. That was a big change for her life, and she never stops telling me how grateful she was to have the correct diagnosis.

Each of the participating UNIVANTS winners featured in this roundtable discussion were recognized for the collaborative multi-disciplinary initiatives they implemented to address and improve management of a challenging clinical condition or obstacle. Their achievements underscore the importance of working together as a team, not just utilizing technology but combining it with clinical evaluations and laboratory diagnostic information to unite differ ent disciplines with the goal of improving clinical outcomes. Every improvement, no matter how small it may appear, contributes to the advancement of healthcare by impacting a clinical area in need of concerted effort.T he UNIVANTS of Healthcare Excellence awards provide a forum to recognize and applaud these achievements, and importantly, provide visibility to inspire care teams around the world to adopt these initiatives or develop their own — for the benefitofpatients,pr oviders, organizations and the healthcare system as a whole.

**To learn more about the award and apply for recognition by Nov. 15, visit UnivantsHCE.com.**

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