

CASE STUDY:

# PROTEAN BIODIAGNOSTICS



Realizing the promise of precision care with  
Proscia®'s Concentriq™ digital pathology platform

## OVERVIEW

Protean BioDiagnostics turned to Proscia®'s Concentriq™ digital pathology platform to create and support a modern pathology service grounded on a flexible information system. In doing so, it eliminated the pathology data silo and improved access to advanced diagnostics, enabling full integration of all aspects of pathology analytics into a cohesive diagnostic package.

## KEYWORDS

- Pathology
- Oncology
- Complex workflows
- Remote access and collaboration
- Accurate diagnosis
- Access to care
- Personalized medicine
- Precision oncology
- Digital image analysis
- Telepathology
- Archiving
- Artificial intelligence
- Immunohistochemistry
- In situ hybridization

## INTRODUCTION

While medicine in general has shifted towards a focus on personalization, most cancer patients cannot currently readily access the advanced diagnostics driving precision care. Only about 15% of patients are treated at the leading national academic medical centers where the latest diagnostics and therapies are available. And although academic centers produce cutting-edge science, most operate on legacy informatics systems that fail to support an integrated network of services beyond the walls of their labs and cannot handle the new explosion of big data applications, including digital image analysis, proteomics, and molecular genomics. This means that pathologists are often forced to make treatment decisions based on an incomplete set of diagnostic data just as patients struggle to aggregate their own medical information for their care teams.

For Dr. Anthony Magliocco, President and CEO of Protean BioDiagnostics, it was time to overcome these challenges to treat each and every cancer patient with a personalized approach. “We’re living in revolutionary times affecting diagnostic pathology, particularly regarding the treatment of cancer. There has been an explosion in the number of treatment options, in the number of therapies, and in the number of biomarkers critical to informing the diagnostic process,” he explained. “Now more than ever before, ensuring accurate and complete diagnoses from the pathology allows patients and their oncologists to select the best treatment, avoid toxicity, and enter clinical trials. It saves lives.”



## SITUATION

Dr. Magliocco founded Protean to help cancer patients and their doctors navigate the rapidly advancing world of cancer treatments by delivering the comprehensive diagnostic information required to identify the most effective therapies. “We began Protean by taking a fresh look at how to best design the next generation of diagnostic pathology services to support the new era of precision oncology and its unique data-intensive demands,” said Magliocco.

He envisioned a modern lab environment that deployed the latest technologies to offer a wide variety of pathology services for patients, regardless of their location. These services would be grounded on flexible information systems that would create, manage, and monitor workflows to maximize the efficacy and efficiency of the lab’s world-class team. To achieve this vision, the lab needed to navigate a changing industry, complex regulations, and expected shortages of pathologists – while also finding a way to manage big data, including genomic data, molecular diagnostic data, liquid biopsies, and digital imaging.

Protean knew that digital pathology would be essential to quickly delivering on its vision of complete and confident cancer diagnoses. Using digital assets for managing the traditional pathology workflow would reduce dependence on physical

glass slides. Unlike glass slides, digital images are stable over time, can be instantly moved through lab workflows, and are easily shared during rapid consultations among experts, including distributed teams. Digitization also allows for the use of algorithmic analysis, which can spot abnormalities that may be invisible to the human eye. Furthermore, the lab could centralize pathology data – and improve information access – by integrating its digital image management system into existing systems, such as laboratory information systems (LIS), billing systems, informatics platforms, and Electronic Health Records (EHR).

Committed to implementing digital pathology, Protean was then presented with a challenge that would shape the future of its lab:

**How could it best leverage digital pathology to eliminate the pathology data silo and provide a technology-empowered personalized and patient-centric service offering?**



## SOLUTION

Creating a digital image workflow management system for its digital pathology adoption is what initially brought Protean to Proscia. But what it found in Proscia's Concentriq platform was image management plus much more – a foundation upon which to build the revolutionary end-to-end digital pathology workflow and informatics system it had envisioned.

“As we began building prototypes for our lab, we looked for products that fulfilled our vision such as integrating molecular data and genomics. Concentriq fit the bill,” said Magliocco. “The real magic is having a system that will integrate data in a way that serves the unmet needs of patients and medical oncologists. Proscia's Concentriq platform achieves this by merging what has historically been disparate data in a manner that is similar to a conventional pathology workflow, eliminating what would otherwise be a huge learning curve. Concentriq also adds in the advanced capabilities that are updated for the modern pathology lab we have envisioned.”

Protean chose to go with the Concentriq Clinical Enterprise Edition given its robust set of features for optimizing workflows. The lab's team collaborated closely with Proscia to configure the platform to perfectly align with its day-to-day processes. Behind the scenes, Proscia also worked closely

with LigoLabs Information Systems to develop an integration that enabled the seamless flow of information between all of Protean's key systems.

The deployment of Concentriq ultimately encompassed a broad range of functionality, including:

- A routine workflow for managing the majority of case volume among users
- Integration with the lab's LIS
- Access to an Analysis module for launching home-brewed or third-party image analysis applications
- An API for third-party integration with other information, including digital image analysis, proteomics, and molecular genomics
- A robust stain and reagent ordering portal to automate and track requests for additional lab work
- Access to the Performance Analytics Dashboard to track and visualize historic trends in productivity and quality across the laboratory operation

## LOOKING AHEAD

The Concentriq platform has empowered Protean BioDiagnostics to achieve its vision of helping doctors obtain the information needed to treat cancer patients, regardless of their location, with the most effective personalized therapies. “Instead of designing information systems around testing silos, we’re building a patient-centered data environment,” Magliocco explained.

“Our first priority is delivering a patient-friendly service, which means capturing the data that a patient needs as they move between physicians,” he continued. “A journey with cancer is a long one, and patients may have multiple biopsies by several specialists over many years. They get a diagnosis of cancer, they go to surgeons, they go to different oncologists, they go to different clinical trials. The one constant is the patient. The patient is on this journey - and they need a way to easily bring their image records with them.”

“Not only does Proscia’s AI-enabled digital pathology platform give us a way to improve the management of pathology reports, but it also improves the accuracy of diagnoses,” said Magliocco. “Moving

from glass into digital introduces the opportunity to monitor stain and pathology performance while also building a network of experts to perform quality assurance. Higher quality service leads to higher customer demand, which allows us to grow our business.”

With Concentriq, Protean is leveraging innovative technologies to develop a complete solution for patients and for providers, encompassing routine pathology, second opinions, liquid biopsy, genetics, and genomics, all with the very latest technologies available – even for patients served by medium or small-sized cancer centers. The lab is overcoming the legacy of pathology’s past, charting a new path forward into the era of personalized medicine to improve patient outcomes with access to advanced diagnostics and information.

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Concentriq can prepare your lab  
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