Interview series

An interactive dashboard to revolutionize orthopedic care

The Steadman Clinic and Philippon Research Institute (SPRI), led by Managing Partner and Co-Chair Dr. Marc J. Philippon, is globally recognized for its pioneering research in sports medicine, patient-centered research, osteoarthritis, regenerative medicine, and injury prevention. Since 1993, SPRI's database (one of the largest and richest of its kind) has been collecting patient information that has led to significant treatment advances in these areas.

Intuition+ builds leading-edge architectures on Google Cloud Platform to create business value from data, combining world-class data skills with client intuition to create innovative results.

The Google Cloud Healthcare and Life Sciences team spoke with Grant Dornan, Director of Clinical Outcomes Research for The Steadman Clinic and SPRI, and Tammy Henderson, President of Intuition+, about their pioneering dashboard platform for orthopedic physicians, which they're developing in partnership with Google Cloud.

You both love data. What fascinates you about it?

Grant Dornan: My background is in statistics and I'm kind of a data nerd. At The Steadman Clinic and SPRI, we do a lot of scientific research that backs up the treatments our doctors perform in the orthopedic clinic. We're always interested in how patients are doing following their surgery, and trying to learn and iterate on different treatment choices.

Tammy Henderson: I'm a data geek. I've been doing data warehousing for about 30 years and I love data. I enjoy making value out of data and changing people's lives with data. My company, Intuition+, leverages the client's intuition, plus our data skills and the Google Cloud platform, to innovate and drive results.

Let's get solving.

The Steadman Clinic and Steadman Philippon Research Institute, Intuition+, and Google Cloud are solving…

"…for world-class care of patients with orthopedic injuries by integrating diverse datasets in real time and implementing research-backed prediction algorithms."

Grant Dornan,
Director of Clinical Outcomes Research,
The Steadman Clinic and SPRI

"…for modernizing The Steadman Clinic and SPRI's data platform to integrate research-backed data science predictions into the daily clinical workflow."

Tammy Henderson, President, Intuition+

Grant, when you started working with Intuition+, what were you hoping to achieve?

Grant Dornan: We were looking at an opportunity to better utilize our data. Historically, we've run a database to track patient outcomes and the treatment they receive, but it's always been fire-walled off from our other data systems. We saw an opportunity for better integration with our Electronic Health Record system and other sources of data, including our biomotion lab, our imaging research group, which has a tremendous amount of DICOM and gene files, and our regenerative medicine lab, which has a lot of biomarker data that can shed light on patients' recovery paths after surgery.

We wanted to create a dashboard platform for physicians to use at clinically relevant time points. They could have all the data we have to offer right at their fingertips, and oriented in a way that lets them not only drill through, subset, and visualize data, but also predict post-surgery outcomes in real time: tweaking values, talking about what-if scenarios, and really educating patients on the process and what to expect.

Tammy, what approach did you take to building this dashboard?

Tammy Henderson: The doctors at the Steadman Clinic needed the ability to adjust surgical factors and perform what-if analysis with patients during their appointments. This technology was not available in any BI tool, so we turned Looker into a data capture tool. The doctor can actually type in values and hit a calculate button to run an algorithm to produce new surgical outcome results. This enables the what-if approach that provides the doctor with the best information and the patient with the best possible care when the doctor and the patient are meeting.

We had to think about the physician's workflow and how they would provide that evidence-based care to their patients based on predictive

Tammy Henderson,
President, Intuition+

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algorithms. Fortunately, Google BigQuery and its companion tools for ETL (extraction, transformation, and loading) and visualization put the power we needed into one platform, so we didn't have to merge different approaches from different vendors. All of our deployments are about speed to delivery. We marry our ability to quickly absorb the requirements and then implement the tools and data so the end users can easily see how to leverage the data. Once they see the data, then their intuition kicks in, and the business requirements become more clear and more valuable.

How did the team work together to deliver what the clinic needed?

Grant Dornan: In Google, we found a group that was really eager to catch us up to speed on an area that we knew we wanted to get into, but didn't know a lot about. Google Cloud gave us educational opportunities, great engineers, and a referral to Intuition+. We all hit it off immediately, and really started geeking out about what we could do together. It became a really cohesive team.

Tammy Henderson: We were surprised by the amount of support and follow through we received from the Google sales engineers and the project product engineers, as well as the access we had to the product engineers. It all resulted in a fast, flexible deployment.

What was your favorite thing about working on this project?

Grant Dornan: It was really a new way to connect research data into the clinic. This was a proof of concept project and we wanted to innovate something that we hadn't seen out in the world before. We've been getting a lot of traction and a lot of interest in moving this forward into the next steps.

Tammy Henderson: My favorite part is the ability to have each team and team member bring their deep knowledge to the table to create a better and more comprehensive result. SPRI is steeped in research and data science, Intuition+ has the data

Grant Dornan,
Director of Clinical
Outcomes Research,
The Steadman Clinic at
and Steadman Philippon
Research Institute

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skills and project management skills to glue all the pieces together, and Looker had an open mind to extend their toolset. So everybody was an expert in their own area, brought everybody else up to speed with their expertise, and then we melded that all together into one solution.

To learn more about
Google Cloud Healthcare and Life Sciences visit:

https://cloud.google.com/solutions/healthcare-life-sciences

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