

# Jahan Fahimi & UCSF Value Improvement Program: Enabling Doctors To Provide Instant Answers

Healthcare

## Key Takeaways

Go from 2 months to **2 minutes** to run an analysis

Over **2,000 analyses** performed by value improvement physicians in a year

Make **real time decisions** during meetings

## About Jahan Fahimi, MD, PhD And UCSF Value Improvement Program



Jahan Fahimi, MD, PhD  
Associate Professor of Emergency Medicine,  
Director of Value Improvement at UCSF Health

The UCSF Value Improvement Program is designed to empower physicians at all levels to measurably reduce waste, improve processes, and create capacity to serve UCSF's growing organization. As the Director of Value Improvement at UCSF, Dr. Jahan Fahimi is always looking for new ways to create efficiencies and increase his team's capacity to serve the demand for the Financial and Administrative Services community.

## Challenges

To improve the quality of care and reduce the cost of operations, the Chief Innovation Officer and Director of Value Improvement were looking for a new way to support UCSF's growth. As physicians themselves, they wanted the ability to explore the financial data so that they could find ways to improve outcomes and reduce costs.

Given their frontline experience in delivering care, physicians are uniquely qualified to drive value improvement initiatives if they have access to the financial data associated with patient care. There is an immense amount of clinical knowledge and experience held by providers, and coupling that information with the financial information of an institution unlocks the long-promised potential of value-driven healthcare. This melding of clinical and financial knowledge was constrained by a lack of access to data and self-service analysis tools.

### Lack of coding skills

The problem was: most physicians do not have the knowledge nor the time to learn how to run SQL queries. To get relevant patient data from a database, physicians need to:

- Run SQL queries to extract the data
- Run R scripts to do cohort analysis, include/exclude populations, and create rules for grouping data
- Use SAS to run statistical analysis for statistically significant differences between cohorts

This lack of coding skills meant that they always needed to rely on their decision support team to extract data and run analyses for them, even for the most basic questions, such as "how much does albumin cost?"

### Two-month wait to get answers to pre-qualified questions

However, the decision support team was also burdened by questions from hundreds of other physicians and teams as well, leading to two-month analysis turnaround times. Because of the inherent resource constraint, physicians would meet in advance to prioritize and pre-qualify analysis requests.

It also imposed a significant burden in asking follow-up questions, since each successive analysis led to another two-month analysis cycle. This process was time-consuming, inefficient, and limited the number of questions that UCSF could ask of their data.

### Lack of standard approach to data analysis

Furthermore, it was difficult for cross-functional teams to communicate their discoveries because they didn't have a standardized language to evaluate the data.

### Tough security

From the technology side, UCSF has very stringent security requirements. We had to provide a compliant solution that integrated with their SSO and existing security infrastructure.

## Solutions

In order to comply with UCSF security workflows, we work with their data on-premise. We integrated with their SSO and had their IT team deploy an appropriate VM for our application. Then we took their analysis-ready dataset comprised of clinical and financial data and deployed a copy of the data into our data node.

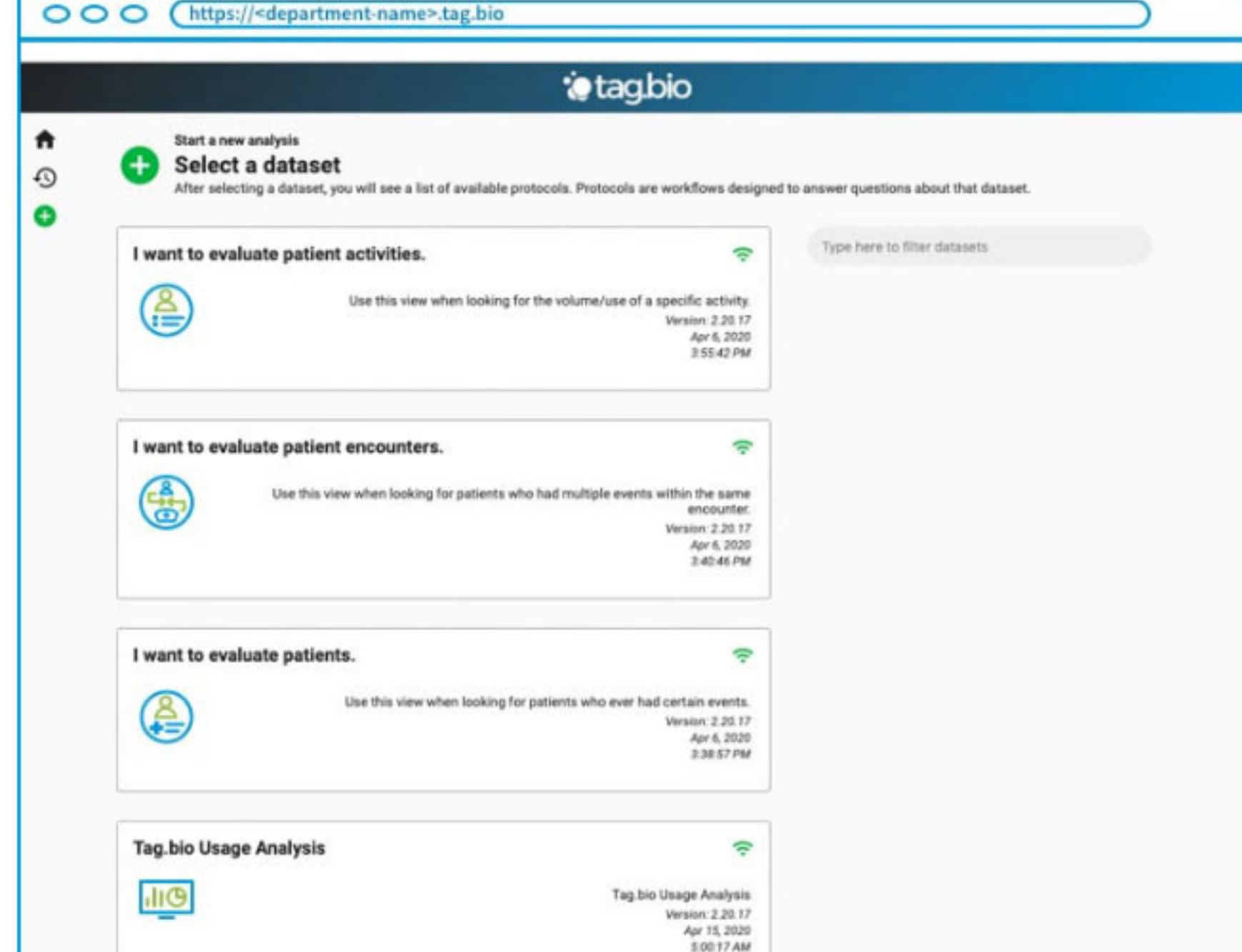
### Turn questions into analysis apps

Soon, a handful of physicians, including Dr. Fahimi, received access to the analysis site and were able to sign in using SSO. From there, the physicians and our team got together to narrow down the scopes of the questions into analysis apps.

### Large amount of data split into three data nodes

Because of the wide range of specific questions, the financial data was split into three data nodes to target different types of questions:

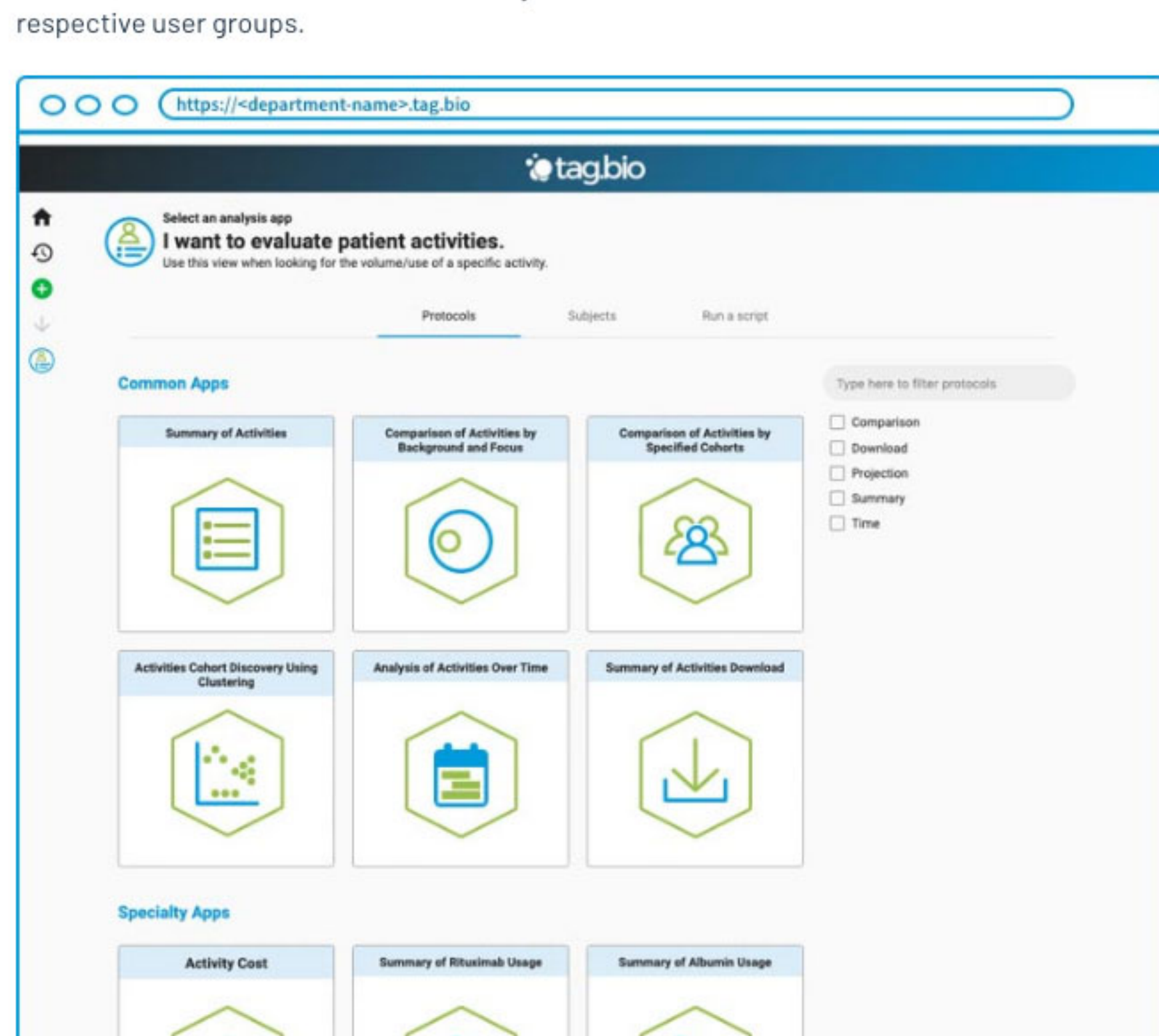
- **Patient activities:** To analyze the volume and the use of a specific patient activity
- **Patient encounters:** To analyze patients with multiple medical events within the same hospital encounter
- **Patients:** To analyze patients with certain medical events



### Evolution of analysis apps

Once the data were loaded into the platform, initial, broad-scope analysis apps were deployed. Through an agile development process with UCSF we quickly evolved the analysis apps to capture the desired workflows of physicians and administrators in value improvement, population health, pharmacy, and finance.

As a result, the suite of analysis apps spans simple summary analyses to sophisticated clustering and cohort comparisons. User-level apps were also deployed to reflect the desired data stratification based on the sensitivity of the financial data as well as the needs of the respective user groups.



## Results

With Tag.bio's analysis site, physicians were able to confidently run their own analyses to ask and answer their own questions – without writing code scripts to extract and analyze data. The time to insight went from two months to two minutes.

### Freedom to explore

With direct access to the data and a wide range of analysis apps, physicians have the freedom to explore an unlimited number of questions. They no longer need to have meetings to pre-qualify their questions first, nor do they need to wait two months for another team to answer the questions for them. When a physician has a question, s/he can simply log in to the Tag.bio platform, pick a data node to analyze, select an analysis app, input some parameters, and hit "run." The results are returned in seconds.

“Having on demand information completely changes the culture. I can't imagine doing my job without the Tag.bio platform.”

– Jahan Fahimi, MD, PhD,  
Director of Value Improvement at UCSF Health

### Empowered to take ownership

The organization and flexibility of our platform allows a number of teams and leaders throughout the organization to utilize different components and analysis apps. They now have ownership over the process of identifying opportunities for improvement and cost reduction.

### Sample use cases

Some of the use cases that emerged are:

- The financial health management team can track value improvement initiatives with exploratory analyses and longitudinal tracking
- The population health management team can create custom cohorts of patients in various alternative payment groups to oversee the financial details of the cohort populations
- A clinical pharmacy team can analyze high-cost medications throughout the organization to reduce waste and cost

“We are using Tag.bio to explore, confirm and evaluate care delivery using a variety of clinical, financial and operations data, including claims data generically.”

– Ralph Gonzales, MD, MSPH,  
Associate Dean for Clinical Innovation and Chief Innovation Officer Internist at UCSF  
Department of Medicine

### Standardized approach to data analysis

With multiple teams using the same platform, cross-functional teams are able to standardize their approach to data analysis to help them speak the same language. The platform facilitates the sharing and communication of insights, allowing physicians to glean in common terms which previously didn't exist before.

With a 360-degree view, physicians are able to make informed decisions on where to direct care, decrease costs, and increase revenue.

### Model for other healthcare providers and hospitals

From the technology side, because we are fully compliant with UCSF's security, we are able to use the security protocol as a model for other healthcare providers and hospitals.