



CASE STUDY

# How **Cognoa** Improved Data Governance Practices for AI-Based Medical Diagnostics with Immuta

Immuta Provides Cognoa's Data Science Team with Granular Policy Enforcement to Accelerate HIPAA Compliant Machine Learning.

2019



## The Customer

Palo Alto, CA-based [Cognoa](#) is a digital behavioral health company that develops AI-based digital diagnostics and personalized therapies that are designed to provide accurate, earlier diagnosis and more effective treatments to improve outcomes and lower behavioral healthcare costs. When physicians are empowered to identify behavioral conditions and developmental delays early, children have the opportunity to benefit from interventions within the critical window when they have the greatest potential for improved lifelong outcomes.

## The Challenge

Cognoa trains algorithms to diagnose behavioral health conditions, including autism and ADHD, with highly-sensitive data from its Amazon Aurora MySQL instance in the AWS Cloud (a HIPAA environment containing patient identifiers and electronic protected health information [ePHI]). Data privacy and security are of paramount concern for Cognoa, and it needed a software platform that could help enforce data access roles, permissions, and policies beyond the standard resource or table-based control levels.

Cognoa's legacy practice of providing its data scientists responsible for building its run time engine for diagnostics software with all of the data their team required to build models, while removing ePHI and HIPAA sensitive information, was extremely time and labor intensive. It

became clear to Cognoa that in order to advance the innovation of its work, it was essential for the company to expedite this process, and also find a way to anonymize sensitive information for reporting.

In the past, Cognoa created custom scripts in which it would do data dumps through its production database, then it would cleanse and import to another database where its data science team would run queries against that data. The problem was, every time it went through this process, it needed to update the cleansing strip – format, change columns – before its data scientists could get access. In addition to the time and effort involved in this process, latency problems would often arise, so Cognoa's data scientists were constantly looking at historical data snapshots, of which the custom scripts could be up to one month old.

“We have a group of very talented data scientists who build our run-time engine for diagnostics software. Our legacy practice of providing them with all of the data they required to build models, while removing the ePHI and HIPAA sensitive information, was extremely time and labor intensive. It was essential to expedite this process, and also continue to anonymize sensitive information for reporting.

Halim Abbas,  
Chief AI Officer, Cognoa

Abbas, continued, *“With Immuta in place, we have been able to streamline both data science and engineering teamwork, dynamically adapt in real time, and accelerate overall productivity. All the while, we’re able to define and enforce detailed data access policies that guarantee the security and anonymity of sensitive data to meet or surpass industry regulations.”*

## The Solution

Cognoa is a digital behavioral health company, so data privacy and security concerns are paramount.

After investing time developing its own methods, Cognoa realized that it needed to evaluate and deploy an outside software platform that could help it enforce data access roles, permissions, and policies beyond the standard resource or table based control levels.

To meet data demands and compliance requirements, Cognoa enlisted the support of Immuta, the automated data governance company.

- The Immuta Automated Data Governance software platform, applies purpose-based restrictions to Cognoa’s data, dynamically enforces in real-time data access and policy restrictions based on the needs of the customer’s data scientist/s.
- Immuta also applies masking techniques to create a view of Cognoa’s data wherever sensitive information is and automatically anonymizes identifiers presenting compliance issues such as names and birthdates.
- Policy enforcement is all done through dynamic query rewrites that allows Amazon Aurora to continue to manage all the processing of the data in a highly scalable and reliable way, but also, in compliance with the data privacy policies authored in Immuta.
- In conjunction with Immuta, Cognoa can also leverage the performance and availability benefits of the Amazon Aurora relational database — doing so allows for the scalability of compute for Cognoa’s complex query workloads, and helps lower system administrator costs.

## About Immuta

Immuta was founded in 2014 based on a mission within the U.S. Intelligence Community to build a platform that accelerates self-service access and control of sensitive data. The Immuta Automated Data Governance platform creates trust across security, legal, compliance and business teams so they can work together to ensure timely access to critical business data with minimal risks. Its automated, scalable, no code approach makes it easy for users across an organization to access the data they need on demand, while protecting privacy and enforcing regulatory policies on all data.

## Results

1. Immuta also solved latency challenges for Cognoa. Prior to the relationship, Cognoa's data scientists were constantly looking at historical snapshots of data of which the cleansed script could be up to a month old. With the Immuta platform in place, Cognoa can now dynamically adapt in real time — and when data scientists make a query, it hits the system live.
2. Immuta automated the data management process that is required to build compliant algorithms, a process that previously required complex data engineering, manual policy enforcement, and labor-intensive reporting.
3. Immuta empowers Cognoa's data scientists to self-service their own data needs for exploration, experimentation, and analytics, and run any queries they wanted without taking additional steps to ensure HIPAA compliance.

This lessens the data burden on Cognoa's backend and data engineers, accelerates overall productivity, and streamlines both data science and engineering teamwork. All the while, the company can define and enforce detailed data access policies that guarantee the security and anonymity of sensitive data as required by industry regulations.

## Why Immuta?

**Cognoa's implementation of the Immuta Automated Data Governance platform accelerated its machine learning innovation in the medical field, thereby benefiting a greater number of families and children impacted by behavioral health issues.**



Cognoa is on the cutting edge of AI-

based medical diagnostics with the important goal of helping families facing difficult behavioral health conditions. Immuta's mission is to ensure the legal and ethical use of data through self-service access and control of highly sensitive information used in the development of machine learning and AI. We're proud to partner with Cognoa and support its delivery of HIPAA compliant algorithms within the most stringent of regulatory environments.

— Matt Carroll

Co-founder & Chief Executive Officer, Immuta

