

# Cal INDEX - A New Model for Collaboration



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## An Evolving Healthcare Landscape

The issue of competition has significantly hampered healthcare reform efforts. Providers and payers have historically rejected the open exchange of data for their member and patient populations, fearing that access to their data could contribute to consumers opting to use a competitor's services and providers opting to move into the insurance industry.

Many organizations are beginning to recognize that effective reform cannot occur within the competitive siloes that have long dominated healthcare. These innovative organizations have instead created unique partnerships that seek to leverage the combined power of data from different sources to improve patient care. One such organization is Cal INDEX, one of the largest statewide health data exchange in the U.S.

## Collaborating for Change

Though normally competitors in the health insurance market in California, executives at Blue Shield of California and Anthem Blue Cross realized that optimizing revenue, reducing costs, and improving the quality of patient care using only their internal data was becoming increasingly difficult. Patients often traverse the care continuum while moving in and out of established provider and payer networks and a single healthcare organization is frequently unable to maintain a comprehensive view of a patient's care from the data they possess. According to Dr. Kenneth Park, Vice President of Research Environments and Business Solutions at HealthCore (a wholly owned subsidiary of Anthem), "We've been trying to do all these things just using our own data, but our ability to get incremental gains and improvements is pretty limited at this point." Competitors often hold a critical section of the missing information.

With the increased focus on quality and cost brought about by the fee for value era, Anthem and Blue Shield of California faced challenges about how they used their data to support care. Leaders at Blue Shield of California and Anthem decided it was in their best interest to collaborate around data instead of competing to acquire it. They envisioned the creation of a public utility to serve all of California and facilitate the collection of, and access to healthcare information. The new entity would not only feature data from payer organizations, but would also incorporate data from participating healthcare providers. With such an infrastructure in place, participants would instead compete around their smart use of the data. "We put a lot of money into trying to acquire data, but the data itself doesn't actually generate direct value. The way we should all be competitively differentiating is on how we analyze data, interpret it, and then apply those results to change our business decisions and operations," said Dr. Kenneth Park.

## Powering New Opportunities with Open Data

To date, Cal INDEX has data for 9 million members, including "medical information from claims records, prescription, and lab data," explained David Watson, CEO of Cal Index. Over the next few months, providers will be able to participate in Cal INDEX and contribute data such as lab results, electronic health records, and admission/discharge/transfer (ADT) data to the system. Providers will have access to the structured information through a clinical portal. Cal INDEX will enhance the clinical usability of the system by offering the capability for participants to download and import data directly into their analytics and data warehousing solutions.

Aggregating data into an integrated database offers a slew of potential benefits. For payers, combining data affords economies of scale. Dr. Kenneth Park described how costly the process of building complete patient records can be in the current environment. “The cost of doing a chart abstraction can be anywhere from \$20-\$30 per member. Right now, we can only do chart abstractions on a tiny handful of our members.” By investing in a technology infrastructure that enables data exchange, “there is a large upfront investment, but the cost of transmitting data afterwards is significantly lower per member.” Collaborating with other organizations will help to reduce the costs of the upfront technology investment.

Similarly, aggregating data across institutions can contribute to revenue optimization. Various quality measurement and reporting systems like HEDIS and Medicare’s Star Rating System evaluate the performance of health plans on dimensions of care and service such as customer service, receipt of preventative care, chronic disease management, and prescription medication benefits.

Employers and consumers often use these scores to help them select the best health plan. According to Dr. Park, “these translate into meaningful revenue, but the ability to report on measures is largely dependent upon how accurate our patient data is. As a payer, we’re missing out on a lot of clinical data.”

Health plans also need clinical data on their member populations for internal risk calculations. Having access to that entire dataset allows payers and providers to risk stratify their patient populations and proactively target patients before they get sick. Preventative measures can reduce downstream costs and alleviate health issues.

For providers, combining claims and clinical data is essential to establishing a comprehensive view of a patient’s care. Clinical data is often incomplete, particularly if a patient has visited with clinicians outside of a given network. Claims data add depth to the clinical record by contributing additional information about the patient and their medical history.

Access to timely information can also improve care coordination and population health management. Cal INDEX can help close communication loops between members of a care team, and even different facilities using admission, discharge, and transfer (ADT) data. “The primary care provider or specialist on a care team can be notified when one of their patients is admitted or discharged from the hospital,” stated David Watson. With this information, clinicians can know to look for a discharge summary or care plan to promptly follow-up with their patient. Comprehensive datasets can improve operational efficiency for individual clinicians, hospitals, and health systems. A complete longitudinal patient record can save clinicians valuable time otherwise spent tracking down missing data.

## **A Platform for Large Data Volume**

Beyond the unprecedented cooperation between competitors, Cal INDEX is unique in its capabilities as

a data platform. Integrating data from two large health insurers and a large number of participating provider organizations presented a host of new challenges to ill equipped traditional healthcare data management practices.

Cal INDEX is intended as a utility service for all of California and needs to handle a large volume and variety of data and process that data quickly. Instead of using a relational

model, Cal INDEX leverages an open-source NoSQL database called Cassandra. Cassandra is fast, flexible, and more scalable than standard relational databases.

For Cal INDEX, this flexibility is especially important because of the different types of data being hosted in the database. In general, clinical data is fairly well structured but claims data is a different beast. Integrating claims data with clinical data and merging the two types of data required new thinking about how to integrate the information in a cohesive fashion, and Cassandra provides the flexibility to address the issue.

Cal INDEX takes advantage of application programming interfaces (APIs) to enhance participants' abilities to use the data in the database. APIs enable developers to interface directly with Cal INDEX's database and hold great importance for Cal INDEX's long-term sustainability.

Dr. Park believes that one of the issues that has plagued traditional health information exchange (HIE) organizations is the question of value. "To create value to support charging usage fees to providers, they start building proprietary services and analytics tools." While this may have been an effective strategy at one point in time, healthcare organizations have now committed to improving many of the same issues that these HIEs seek to address.

As a result, "the largest providers, the ones with the most money to pay for HIE, have already invested in their own analytics tools and software. They see the HIE's software as competitive with their own." By leveraging APIs, Cal INDEX can reduce competitive concerns while also fostering a more collaborative environment where data supports innovation and accelerates overall improvements in healthcare.

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## Supporting the Research Community

In addition to offering a robust longitudinal view of patient records to providers and payers, Cal INDEX plans to support the research community. "When you have longitudinal records for 10, 20, or 30 million people, there's a lot that you can learn. The medical research community is very interested in having access to that data." said David Watson.

As Cal INDEX evolves, its progressive technical architecture is designed to support new capabilities. The scalability and flexibility afforded by Cassandra could be put to use for other types of healthcare data.

## Big Data Brings Big Responsibility

For all of the potential advantages brought about by creating a public data infrastructure, there are also new risks to consider. Health information has grown as a popular target for digital attacks. Consumerization has led to a population that is more aware of how companies are using their data and more demanding for protections on that data. Recognizing the risks involved, Cal INDEX combines carefully crafted governance policies with technology to guarantee the greatest degree of privacy and security.

To maintain data security, all information in the database is encrypted at rest and in transit. Standard security mechanisms like firewalls work to detect and prevent intruders. There are also systems monitoring user access to rapidly alert security staff to patterns that appear abnormal. The platform uses a roles-based delegated security model to govern who can view patient records, and how much data they can see.

Cal INDEX's privacy controls begin with a standard business associate (BA) agreement and participation agreement establishing a trusted relationship between organizations and outlining fundamental expectations around data access, management, and use. BAs then designate a security administrator to oversee the authorization of users with access to Cal INDEX and determine their roles. Physicians have access to all of the data for patients with whom they have an established care relationship, but administrative staff would see less information. Clinicians without an established care relationship can view patient data in emergency situations, so long as they attest to having a valid reason to access the system. All such cases are reviewed by Cal INDEX's privacy officers.

Cal INDEX utilizes an opt-out consumer model to bolster patient choice about whether their data is accessible through the platform. The participation agreement instructs participating organizations to notify patients that their data is being sent to Cal INDEX and that at any time, the patient is free to opt-out. The participation agreement also states that patients have the right to see what's in their record and make corrections, as well as to request a disclosure of who has viewed their record, as required under HIPAA. In the future, Cal INDEX plans to allow patients to access their records directly in order to further empower consumers to manage their care and protect privacy.

Cal INDEX has established other governance controls to reduce the risk of inappropriate access and protect participants. For instance, sensitive data such as behavioral health information, substance-abuse status, HIV status, medical records for persons of public interest, and financial information won't be included in the database.

"You have to protect the privacy of individuals, the security of the system and you have to be trusted. Trust means protecting the interests of the stakeholders participating in the system," explained Dr. Kenneth Park. Data from Cal INDEX cannot be sold for profit, and all research must go through a formal approval process.

## **An Important Step Toward Healthcare Interoperability**

Cal INDEX is taking the important next step in the healthcare system's evolution toward value-based care. Unlike many other efforts before it, Cal INDEX represents a restructuring of the competitive culture that has contributed to the lack of data sharing currently stifling care management. With thoughtful governance to protect the interests of patients, and technologies that have contributed to innovation and growth in other industries, Cal INDEX may reach unprecedented levels of participation. In the words of David Watson, Cal INDEX is "an experiment at scale" of a privately funded data exchange platform to "create a consistent way for participants to consume data and make it valuable for their enterprise and consumers alike." It is likely that many will be watching Cal INDEX as a potential model for the future of healthcare interoperability.

## Learn more

To learn more on how Orion Health helps Blue Shield of California and Anthem Blue Cross create new models of collaboration, please visit:

<https://orionhealth.com/blog/the-cal-index-model-the-future-of-value-based-care/>



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