

KLAS Spotlight

Smile CDR

FHIR-BASED DATA SOLUTIONS
FOR PAYERS AND PROVIDERS



FHIR-Based Data Solutions for Payers and Providers

Why This Spotlight?

In 2021, new CMS rules came into effect requiring CMS-regulated health plans to have a patient access API and a provider directory API. These regulations, aimed at increasing the interoperability of personal health data, have prompted payers to look at new ways of facilitating external information sharing. This report offers a first look at Smile CDR, a fast-moving, healthcare-specific solution provider that has recently delivered interoperability solutions to payer customers to help meet the new mandates.

What Does Smile CDR Do?

"The core of what the vendor does is offer a centralized FHIR-based clinical data repository. They provide a FHIR-server platform that then allows us to plug in other things to make us compliant with different mitigations. In our scenario, that was interoperability. The core of their platform is a HAPI FHIR server. Then they add on solutions for single sign-on or other technologies." —Manager

Bottom Line

Feedback from early adopters of Smile CDR has been positive, especially regarding the company's technical expertise and company culture. Clients see value in the product and are optimistic about where the vendor is headed. Because of rapid growth, at least one organization said scheduling appropriate resources took longer than expected. Another reported challenge is that training can be difficult for staff new to FHIR.

Key Competitors

IupHealth, Cognizant, Edifecs, InterSystems, Onyx

Number of Customers Interviewed by KLAS

6 individuals from 6 unique organizations (out of 11 live at time of data collection)

Top Reasons Selected

Partner relationships, technology, expertise, pricing model

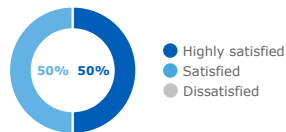
Survey Respondents—by Organization Size (n=6)

Healthcare corporations (IDNs) Payers Provider-sponsored health plans

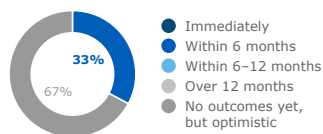


Smile CDR Customer Experience: An Initial Look

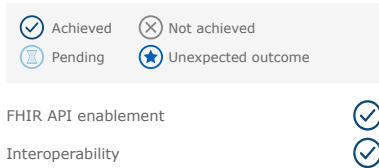
Overall Customer Satisfaction (n=4)



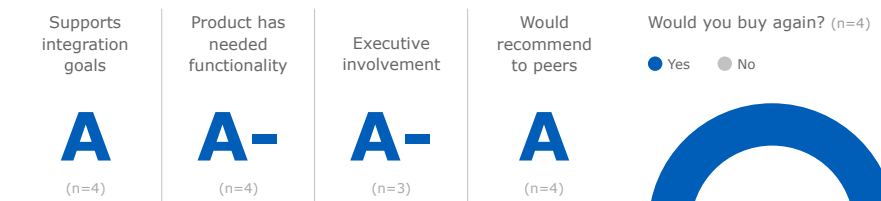
Time to See Outcomes (n=6)



Outcomes Expected by Clients



Smile CDR—Key Performance Indicators (1-9 scale)

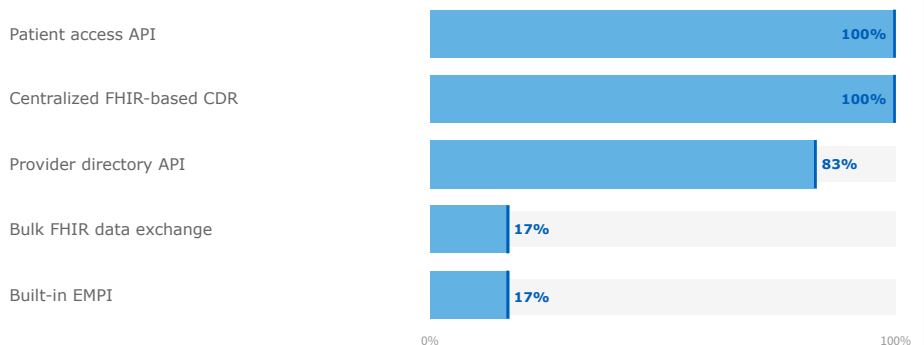


Grading Scale

A+ = 8.55-9.0	B+ = 7.65-7.91	C+ = 6.75-7.01	D+ = 5.85-6.11	F = <5.22
A = 8.19-8.54	B = 7.29-7.64	C = 6.39-6.74	D = 5.49-5.84	
A- = 7.92-8.18	B- = 7.02-7.28	C- = 6.12-6.38	D- = 5.22-5.48	

Adoption of Key Functionality

Percentage of interviewed customers using functionality (n=6)



Strengths



Great documentation

"Smile CDR's documentation is the best. Their implementation of the product is pretty clean and neat. The system has all the information that is needed, even for somebody who has not looked at the product to learn quickly. It is publicly available, so that is pretty nice. The detail of the system is actually very good." —Manager

Excellent executive engagement

"The executives we work with from Smile CDR are topnotch. They are phenomenal, and all the people underneath the executives follow suit. The culture permeates down. The executives will fly in, and they are also on regular calls with us." —Director

Strong technical expertise

"Smile CDR impressed us a great deal with their professionalism and knowledge of the industry. The vendor definitely knows where their role is with HL7, and they are open source for what we generally look at as a commodity. These are just transactions; this is just a bidirectional connectivity play with an emphasis on acquisition to start. Smile CDR's heads are in the right place when it comes to HL7, and that is huge." —Director

Challenges



Scheduling needed resources from vendor can take time

"My only caveat with Smile CDR has been that there is sometimes a delay in getting resources. The only negative I have about Smile CDR is that their business has really exploded because of the amount of attention on the FHIR standard. It is sometimes difficult to schedule resources in their company that have the knowledge we need." —Analyst

Uncertainty about where the company fits in the market

"Smile CDR is learning the payer side and trying to create a roadmap. They are trying to blow out their roadmap and do more things to serve the payer community. The vendor just has to learn where they fit in the payer community ecosystem. I would like to see the vendor improve on that." —Director

Training can be challenging for those not familiar with FHIR specifications

"Smile CDR's training is good, and I am comfortable with it. However, for individuals on our team that don't understand the FHIR specs, the training can be a challenge. FHIR is a new technology, so we wanted deeper insight into it. The training is probably at a level where we need to have people with maturity in the subject matter." —Manager

KLAS' Points to Ponder

The Positives: Smile CDR provides a SMART on FHIR framework to capture data from many sources for efficient data management and use. The clinical data repository provides standard data indexes and formats that are highly secure. The company has also developed an EMPI, patient access API, and provider directory to provide quick benefits to clients. The solution is well documented and provides a well-structured process for designing and implementing the data flow that feeds into the Smile CDR solution.

Organizations should consider the following:

The Solution's Long-Term Viability in Healthcare

For the ONC and CMS, interoperability is their key focus and the next step in the evolution from meaningful use. Healthcare organizations will be expected to create data exchanges with other healthcare entities using HL7 FHIR guidelines. As the industry moves forward, using SMART on FHIR will become a critical requirement for implementing innovative digital solutions on top of existing healthcare IT systems to make healthcare more efficient and make patient care safer. Smile CDR is well positioned to help healthcare organizations create data exchanges and establish standardized databases to transform healthcare.

Impacts and Tradeoffs of the Underlying Technology

Smile CDR uses Apache Kafka and Apache ActiveMQ, paired with an RDBMS or MongoDB to improve data processing efficiency. They are also

using Kubernetes to manage and analyze large data sets (data lakes). Solutions with large data lake architectures are migrating to Kubernetes. Smile CDR is well positioned to make this technology move. Smile CDR uses common security and encryption security standards for processing and managing the data. Mobile applications are currently in development. Data is associated with standard coding/medical vocabulary terms. The architecture is designed for long-term viability.

Considerations for FHIR Data Streams

Healthcare organizations should evaluate the implementation of FHIR data streams with a focus on improving patient care and provider efficiency. Provider organizations who have disparate EHR systems in various modalities of care need to determine what patient information is the most important for providing consistent, high-quality care services to their patients.



Mike Davis

HCIT market research and analysis expert with 40+ years of experience

A component of this process is ensuring that data is standardized with controlled medical vocabularies to codify the data. Data streams with codified data elements will drive more value relative to trending and analyzing patient data.

The Importance of SMART on FHIR for Transforming Healthcare

SMART on FHIR creates a platform for emerging digital technology solutions to integrate into existing legacy healthcare IT solutions. The need for this interoperability was highlighted by the COVID-19 pandemic. Healthcare organizations and emerging technology vendors have created digital solutions to help manage key clinical processes not previously supported by the EHR. These digital solutions have resolved key gaps in monitoring patients or capturing patient data and improved care delivery and patient satisfaction. SMART on FHIR guidelines will serve healthcare well.

Smile CDR: Company Profile at a Glance

Founders

James Agnew,
Duncan Weatherston

Year founded

2016

Headquarters

Toronto, Ontario, Canada

Number of customers

21 in production, 40 in pre-production, 7 under contract

Number of employees

105

Estimated Revenue

\$12M-\$15M

Revenue model

Annual licensing fees based on the number of users; one-time professional service fees for configuration, deployment, and technical projects

Target customer

Providers, payers, researchers, suppliers, government

Healthcare Executive Interview



Duncan Weatherston
Co-founder

What is your background?

Duncan Weatherston is an enterprise architect, innovator, and entrepreneur who has spent 20+ years as an independent consultant in healthcare. During this time, he grew familiar with the complex needs of the healthcare system and, in conjunction with James Agnew, founded Smile CDR. Duncan participated in the creation of various population health solutions including labs, drugs, a provincial health data platform, and the architectural framework for electronic health in Ontario. His 30+ years of I&IT background has gained him expertise in system and solution design, systems integration, and information architecture and management.

Why was Smile CDR started?

Co-founders Duncan Weatherston and James Agnew were working together on a population health solution and felt that they could significantly improve performance, implementation effort, and interoperability of then-current market offerings. In their search for a better approach, James came across FHIR, and the pair immediately saw the value in using it as the base for the Smile CDR solution. They built Smile to deliver enterprise-grade data platform services to all sectors of the healthcare industry, built on top of FHIR.

What is Smile CDR's biggest differentiator?

We have proven our ability to implement health platform solutions with FHIR at scale for high-volume transactions. However, our biggest differentiator results from our commitment to our vision of driving value in healthcare. Product decisions are made to enable capabilities rather than simply to make data available. With this in mind, we continue to build on our robust technology with enhancements like Kafka and Live Bundles. We ensure the comprehensiveness of our FHIR APIs and intentionally add out-of-the-box capabilities such as Master Data Management that are not baked into other solutions. We are currently working towards ISO 13485 certification.

Solution Technical Specifications (provided by Smile CDR)

Cloud environment

Azure (partner), AWS, Red Hat OpenShift, or private-hosted cloud

Development platform

Java and JavaScript

Database environment

Supports relational and non-relational databases, based on the FHIR standard

Mobile application environment

Mobile apps in development

Security platform

Built following principles of Security by Design and Privacy by Design

Confidentiality

HIPAA compliant

Data encryption

Supports modern authentication and authorization mechanisms

Integration approach

Comprehensive data integration capability

HITRUST Certification

In process

REPORT INFORMATION

Reader Responsibility

KLAS data and reports are a compilation of research gathered from websites, healthcare industry reports, interviews with healthcare, payer, and employer organization executives and managers, and interviews with vendor and consultant organizations. Data gathered from these sources includes strong opinions (which should not be interpreted as actual facts) reflecting the emotion of exceptional success and, at times, failure. The information is intended solely as a catalyst for a more meaningful and effective investigation on your organization's part and is not intended, nor should it be used, to replace your organization's due diligence.

KLAS data and reports represent the combined candid opinions of actual people from healthcare, payer, and employer organizations regarding how their vendors, products, and/or services perform against their organization's objectives and expectations. The findings presented are not meant to be conclusive data for an entire client base. Significant variables—including a respondent's role within their organization as well as the organization's type (rural, teaching, specialty, etc.), size, objectives, depth/breadth of software use, software version, and system infrastructure/network—impact opinions and preclude an exact apples-to-apples comparison or a finely tuned statistical analysis.

KLAS makes significant effort to identify all organizations within a vendor's customer base so that KLAS scores are based on a representative random sample. However, since not all vendors share complete customer lists and some customers decline to participate, KLAS cannot claim a random representative sample for each solution. Therefore, while KLAS scores should be interpreted as KLAS's best effort to quantify the customer experience for each solution measured, they may contain both quantifiable and unidentifiable variation.

We encourage our clients, friends, and partners using KLAS research data to take into account these variables as they include KLAS data with their own due diligence. For frequently asked questions about KLAS methodology, please refer to klasresearch.com/faq.

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Note

Performance scores may change significantly when additional organizations are interviewed, especially when the existing sample size is limited, as in an emerging market with a small number of live clients.



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Our Mission

Improving the world's healthcare through collaboration, insights, and transparency.

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