

FROST & SULLIVAN

VERANA HEALTH

2022
NEW
PRODUCT
INNOVATION

*NORTH AMERICAN REAL-WORLD
EVIDENCE SOLUTIONS INDUSTRY*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Verana Health excels in many of the criteria in the real-world evidence solutions industry.

AWARD CRITERIA	
<i>New Product Attributes</i>	<i>Customer Impact</i>
Match to Needs	Price/Performance Value
Reliability	Customer Purchase Experience
Quality	Customer Ownership Experience
Positioning	Customer Service Experience
Design	Brand Equity

Real World Evidence: A Solution for the Healthcare Industry

Real-world evidence (RWE) has become the focus of pharmaceutical and biotechnology companies, health technology assessment boards, the Food and Drug Administration (FDA), payers, and providers. Chiefly, the healthcare industry finds RWE as a potential solution to high drug prices and low research & development (R&D) activity.

“IT solution providers explore value creation and extraction from the growing real-world data (RWD) volumes to enhance patient recruitment and engagement, reduce trial costs, and increase longitudinal trials and digital patient data (...) most RWD is unstructured and historically inaccessible, a significant headwind preventing companies from achieving these targets.”

**- Lal, Unmesh,
Senior Industry Analyst: Healthcare**

Information technology (IT) solution providers explore value creation and extraction from the growing real-world data (RWD) volumes to enhance patient recruitment and engagement, reduce trial costs, and increase longitudinal trials and digital patient data. The RWD leveraged usually comes from claims, clinical trials, electronic health records (EHR), electronic medical records, diverse laboratory data, and market data. However, most RWD is unstructured and historically inaccessible, a

significant headwind preventing companies from achieving these targets.

Frost & Sullivan estimates the RWE solutions market will reach \$1.5 billion in revenue by 2025, increasing at a compound annual growth rate of about 16%.¹ Commercial applications constitute the most significant opportunity area during the forecast period, followed by the clinical segment.

Verana Health: An Exemplary Digital Health Company

Verana Health[®] (Verana) uniquely leverages its expertise to meet current market unmet needs, cementing its leadership in the RWE solutions space. Founded in 2018 and headquartered in San Francisco, the innovative digital health company delivers quality drug lifecycle and medical practice insights from curated RWD. Verana has an exclusive network entrusted by key-specialty medical societies, enabling it to manage data from over 20,000 healthcare providers and 70 EHR systems.²

A secure population health data engine, VeraQ[®], powers its ecosystem by transforming structured and unstructured data into quality, curated datasets (Qdata[®]). Its powerful capabilities assist life sciences partners in generating RWE, advancing business insights, and developing medical innovations.

Pioneering Digital Health with an Exclusive Real-world Data Network

Historical data sources, such as medical claims, are easy to access only after months of processing. Without timely structured data available, physicians rely, for instance, on self-interpretation, pathology, biology, and magnetic resonance imaging. In contrast, Verana provides insights closer to real-time into the overall drug lifecycle. While traditional RWD takes two-to-three months to be helpful, it ingests data directly, generating insights more quickly. The company has a direct connection to a complex EHR data network. It uses advanced technologies to curate data at scale—with speed and quality— producing relevant clinical data points for the patient journey.

EHR data is difficult to access for many reasons: much of it is unstructured information from specialty-specific EHR systems and community-specific practice areas. RWE IT innovators need the best EHR data providers in the space to ensure maximum data quality. Outperforming the competition, Verana has exclusive partnerships with the American Academy of Ophthalmology[®], the American Urological Association, and the American Academy of Neurology. Subsequently, three large data registries are utterly accessible:

American Academy of Ophthalmology IRIS[®] Registry. First comprehensive eye disease clinical registry and the most extensive medical specialty database in the US. It helped its participating ophthalmologists to save more than \$1 billion in penalties from 2017 to 2020. The IRIS Registry (Intelligent Research in Sight) provides Verana with:

- 540+ million de-identified patient visits
- 75+ million unique, de-identified patients
- ~16,000 contributing clinicians

¹ *Shifting Spotlight from Product- to Value-based Outcomes Intensifies Growth in the US Real-world Evidence IT Solutions Market* (Frost & Sullivan, February 2021)

² Verana Health website: <https://www.veranahealth.com/> (Verana Health)

- 60+ EHR systems
- 9-year longitudinal database

American Academy of Neurology Axon Registry®. One of the largest real-world clinical data registries for neurology. By the numbers, the Axon Registry provides Verana with:

- 18+ million de-identified patient visits
- 3+ million unique, de-identified patients
- ~1,000 contributing clinicians
- 35+ EHR systems
- 6-year longitudinal database

American Urological Association AQUA Registry. The world's largest clinical data registry for urology. The AQUA Registry provides Verana with:

- 75+ million de-identified patient visits
- ~10 million unique, de-identified patients
- 2,100+ contributing clinicians
- 25+ EHR systems
- 8-year longitudinal database

"The American Academy of Ophthalmology's partnership with Verana Health has only strengthened over the years. As a steward of the Academy's IRIS Registry data, Verana Health continues to advance its technology and develop valuable new offerings for medical practices to ensure our ophthalmic community has meaningful insights and innovations that help to improve patient care."³

- Stephen D. McLeod, MD, CEO, American Academy of Ophthalmology

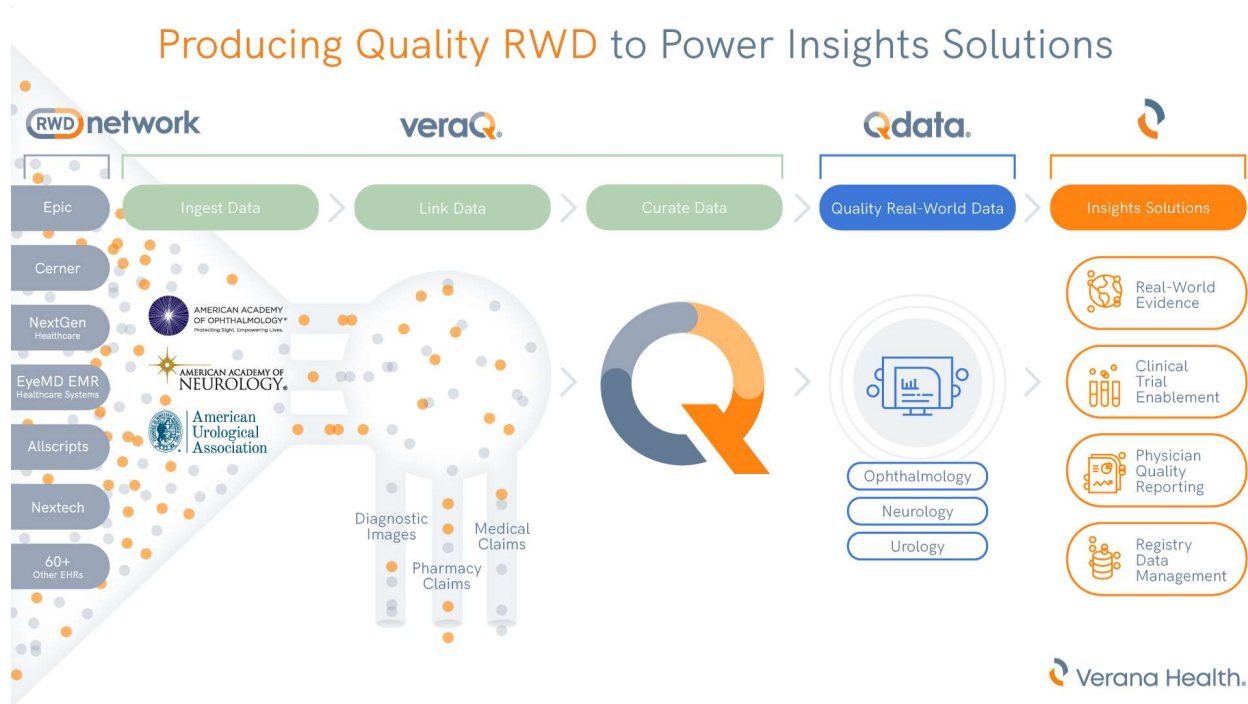
The VeraQ engine ingests, de-identifies, normalizes, and harmonizes EHR data from these clinical databases. The data is then curated and often tokenized and linked with other data sources such as medical claims, pharmacy claims, images, genomics, and mortality data. Verana maintains, protects, and curates the results using clinician oversights, natural language processing (NLP), and machine learning (ML). By the numbers, the VeraQ platform leverages information on:

- 500+ million de-identified patient visits
- 20,000+ contributing clinicians
- 9+ years of longitudinal data
- ~90 million de-identified patients
- 70+ contributing EHR systems

³ Courtesy of Verana Health

- 3 therapeutic Areas

VeraQ creates disease-specific, fit-for-purpose modules called Qdata. These modules help answer complex questions requiring real-world clinical context, often from observational inputs within physician notes (critical information such as symptoms, diagnoses, and outcomes).



Verana does rigorous quality testing on the Qdata modules. The curation process includes insights from its clinician and quantitative science data teams. To upscale this process, the company is creating internal infrastructure tools for clinicians to add their insights. For example, it is building a service for labeling data as well as sampling notes and images. Similar tools do quality assurance and control on the produced modules.

Unlocking Powerful Insights through Quality Data

Verana integrates high reliability and quality in its products. The company collaborates closely with clients and partners to guide its product roadmap, developing robust, user-friendly solutions and continuously enhancing and adding features. For example, many subtle differences between different medical specialties make many life-sciences companies reluctant to use RWE approaches. To address this constraint, Verana concentrates on three therapeutic areas: ophthalmology, neurology, and urology.

Another instance relates to social determinants of health, becoming increasingly crucial as a growing market focuses on enhancing patient diversity, equity, and inclusion in clinical trials. Verana strives to ensure enhanced diversity and enable several use cases.

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**- Manuel Albornoz,
Best Practices Research Analyst**

VeraQ is the foundation for quality insights across clinical research. Alongside Qdata, observational research studies in ophthalmology, urology, and neurology are its backbone, empowering, for instance, accelerated trial activity by helping identify patients who may qualify for a clinical trial.

When paired with the IRIS Registry and the Axon Registry, Verana enables compliance with Merit-based Incentive Payment System (MIPS) reporting standards. The company takes the data from clinicians’ EHRs, including notes, and scores them across more than 40 quality metrics.⁴ It compares data from a quality care perspective and aids physicians and providers in gaining bonuses. By allowing participation in Qualified Clinical Data Registries (QCDR), Verana contributes to saving physicians thousands of dollars annually.



Overall, the company helps providers with quality measures, MIPS, clinical trial support, and academic research support. For life sciences, Verana developed a lifecycle solution model for its services. Specifically, it helps in the following areas:

1. **Clinical Development:** Study Design, Site Identification, Trial Recruitment
2. **Pre-Approval:** Patient Journey, Disease Burden and Epidemiology

⁴ Verana Health Interview with Frost & Sullivan (Frost & Sullivan, October 2022)

3. **Peri-Approval:** Health Economics and Outcomes, Launch Planning, Pricing and Market Access
4. **Commercial:** Forecasting, Market Share, Market Assessment
5. **Post-Approval:** Safety Studies, Comparative Effectiveness, Regulatory Commitments
6. **Market Expansion:** Label Expansion, Label Modification, Drug Utilization

“Our collaboration with Verana Health to run a real-world post-marketing study enabled us to meet safety requirements that would have been a trial that was too large and costly to carry out.”⁵

-Rabia Gurses Ozden, M.D., Chief Medical Officer, Ocular Therapeutix

Building Trust through a Customer-centric Approach

Verana goes beyond its extensive expertise and best-in-class capabilities, with customer value as a strategic imperative. Its unique value proposition relates to the synergy it establishes between human knowledge and technology.

VeraQ combines various viewpoints, e.g., scientists, physicians, and medical imaging engineers, to generate a labeling protocol to understand and manage expectancy. The company also maintains a highly transparent workflow, ensuring customers know how VeraQ and its data scientists derived insights from the data. The explanation covers essential details, including the training dataset size, its coverage, potential notes intensity rating, and numerous accuracy-preserving performance criteria. Over and above, sales representatives receive training for reducing the entry barriers for non-programming people when piloting early looks of the Qdata module.

“Verana Health has played a critical role in supporting our real-world evidence generation and research. They have been a true extension of our HEOR team, helping to deliver credible data and solid scientific expertise that has helped to generate quality therapeutic insights.”⁶

- David Tabano, PhD, Senior Health Economist, Genentech

Verana has a formal feedback process to enhance customer satisfaction. Each project is closed out with a request for feedback on four verticals: knowledge, data quality, timeliness, and coverage needs. Moreover, it uses biannual customer satisfaction surveys to optimize the experience. The following case studies exemplify the company’s outstanding customer service experiences:

- **Replication studies (clinical trial):** Verana provided a proof-of-concept replicate of two Phase-III studies’ designs and evaluated the outcomes using RWD. It replicated all three arms of these studies.⁷
- **Linking EHR data to imaging data:** Verana created an algorithm connecting images and EHR patient data for a study. It linked approximately 83% of the ophthalmic images to patient profiles in the IRIS Registry, 1.5 million out of 1.8 million.⁸

The company’s RWD network includes more than 60 leading academic and research institutions. In the

⁵ Courtesy of Verana Health

⁶ Courtesy of Verana Health

⁷ Verana Health website: <https://www.veranahealth.com/> (Verana Health)

⁸ Ibid

Life-Sciences space, Verana contributes to companies such as Novartis, Genentech, and Janssen.⁹

A Promising Outlook for 2022 and Beyond

Since its inception, Verana's sterling reputation and customer-centric framework cemented its coveted preferred partner status. In 2022, the company secured \$150 million in a Series E funding round led by Johnson & Johnson Innovation – JJDC, Inc. Verana used this investment to advance its life sciences products and services and to expand its data footprint through the medical community and strategic partnerships.¹⁰

The company currently works on solving RWD standardization problems. Verana will build upon its robust technology and data ecosystem to advance software-as-a-service and RWE. It partners with digital clinical companies like Komodo Health to link claims data and collaborates with sizable clinical research organizations to optimize clinical trials. In the upcoming years, Verana will focus on its three therapeutic areas and broaden its research into different ophthalmic, urological, and neurological diseases.

In the end, the company plans to increase the therapeutic areas to expand its network.¹¹ Frost & Sullivan believes Verana is well-positioned to drive the space into its next growth phase, capturing market share and sustaining its leadership in the coming years.

Conclusion

To create a novel, real-world evidence information technology solution, a company needs to understand market needs and deliver a solid solution designed and embedded with high-quality and reliable performance. Frost & Sullivan finds that Verana Health (Verana) embodies this concept. Verana assembled an exclusive real-world data network of over 20,000 healthcare providers, 90 million de-identified patients, and 70 electronic health records through three specialty Medical Society partnerships. Its robust ecosystem pioneers using artificial intelligence, specifically natural language processing (NLP) and machine learning (ML), to extract insights from de-identified, unstructured data.

VeraQ—and its resulting software-as-a-service solutions, Verana Quality Measures and Verana Trial Connect—helps providers track quality measures, report for the Merit-based Incentive Payment System (MIPS) program, participate in clinical trials, and provides support for academic research. Furthermore, VeraQ and its quality, curated data output, Qdata, powers the company's lifecycle solutions for life sciences, ranging from clinical development to treatment patterns and outcomes to market expansion. Ultimately, Verana integrates a customer-centric approach to ensure its offerings address users' wants and needs.

For its strong overall performance, Verana Health is recognized with Frost & Sullivan's 2022 North American New Product Innovation Leadership in the real-world evidence solutions industry.

⁹ Verana Health website: <https://www.veranahealth.com/> (Verana Health)

¹⁰ Digital Health Leader Verana Health Secures \$150M Series E Funding Round (Press release, January 2022)

¹¹ Verana Health Interview with Frost & Sullivan (Frost & Sullivan, October 2022)

What You Need to Know about the New Product Innovation Recognition

Frost & Sullivan's New Product Innovation Award recognizes the company that offers a new product or solution that uniquely addresses key customer challenges.

Best Practices Award Analysis

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

New Product Attributes

Match to Needs: Customer needs directly influence and inspire product design and positioning

Reliability: Product consistently meets or exceeds customer performance expectations

Quality: Product offers best-in-class quality with a full complement of features and functionality

Positioning: Product serves a unique, unmet need that competitors cannot easily replicate

Design: Product features an innovative design that enhances both visual appeal and ease of use

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

