Gone are the days when a payer only considered structured data when managing the member experience. Today, unstructured data and content management are significant parts of the Member-360 data platform, the center of a member relationship management ecosystem.

# The Value of Member Experience Data Platforms for Payers and the Role of Unstructured Data

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## Introduction

### What's Important to Payers?

IDC has identified four major themes that payers are focusing on as they zero in on inefficiencies, optimization, and aligning IT initiatives with member demand.

**These three themes are as follows:**

#### Respecting the Health IT Evolution

- Recalibrating toward next-generational consumerism, documentation, and digital member experiences
- Recognizing data proliferation (volume, variety, velocity, and value)
- Enabling system, regional, and nationwide interoperability
- Emphasizing cybersecurity and resilience; security is essential to building trust

#### Focusing on Both Pre-Existing and Emerging Digital Era Challenges

- Pre-existing challenges include Affordable Care Act (ACA), medical loss ratio (MLR), aging populations, chronic conditions, value-based care (VBC), cost pressures, and shifting regulatory environments.
- Emerging challenges include mergers/payviders, business resiliency, COVID-19 variants, vaccine management, talent shortages, rise of consumerism, and cyberthreats.

**WHAT'S IMPORTANT**

Data management for payers is evolving with the introduction of many flavors of member-experience platforms.

A member-experience data platform for payers is a comprehensive, top-down approach to physical data architecture.

Unstructured data plays a significant role in executing a superior member experience within this Member-360 vision.

- Driving the next-generation of payers rationalizing legacy applications and bringing in cloud-based platforms and ecosystems such as next-gen claims, care management, wellness, and reimbursement transformation — to generate infrastructure cost savings
- Adopting emerging technologies and interoperability standards such as IoT, Internet of Things (IoT), artificial intelligence (AI)/machine learning (ML)/robotic process automation (RPA), fast healthcare interoperability resources (FHIR), cybersecurity, augmented reality (AR)/virtual reality (VR), and blockchain

### Driving Intelligence in Action

- Enabling better ingestion, aggregation, integration, and orchestration of data to improve outcomes and streamline operations
- Shifting focus from "content/data-rich" to "information-driven." There is no empathy without intelligence. Content captured in structured or unstructured ways is that intelligence.
- Emphasizing data excellence and member satisfaction. Empathy ensures engagement.

## KEY TAKEAWAYS

The data platform not only is the structure of the data but also includes the workflow around ingestion, mapping, cleansing, codifying, and verifying person identification and data quality.

Content management is used to capture, manage, process, and secure business content, records, and knowledge.

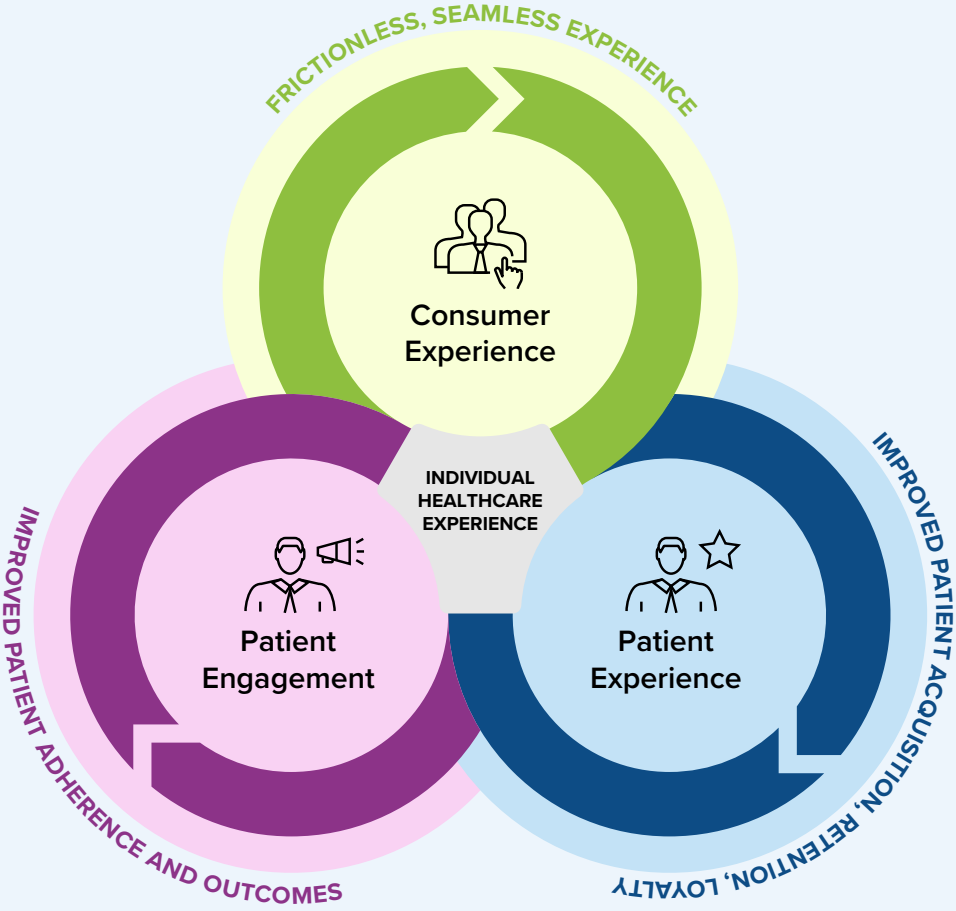
IDC believes that the member-experience market is nascent and will continue to grow with the introduction of social determinant data, remote monitoring data, genomics data, and member "non-health" data into the payer ecosphere.

Structured data and the management of content/ unstructured data should be addressed in any payer enterprise data strategy.

## Optimizing the Individual Healthcare Experience

Within these themes, IDC has identified that optimizing the **Individual Healthcare Experience** is paramount. The Individual Healthcare Experience consists of three dimensions: consumer experience, patient experience, and patient engagement. Experiences are never linear but are complex journeys that flow along each dimension (see **Figure 1**, next page). Individuals can be active in more than one dimension at any time and have multiple journeys happening at once. Technologies and capabilities to support the different dimensions must reflect an ongoing, meticulous effort to understand and empathize with patients to humanize their experience.

**FIGURE 1: The Individual Healthcare Experience**




Source: IDC, 2020

## The Consumer Experience

Within the Individual Healthcare Experience, being a **consumer of healthcare insurance** involves front-facing processes and workflows across all the processes below (see **Figure 2**, next page). While these processes are presented as linear, care events are dynamic, and processes may change as the patient's needs change. These processes will be used as consumers either are driven to re-enroll or change plans, need service or care, and then must pay, appeal, or follow up with subsequent administration or care.

**FIGURE 2: Processes for Consumers of Healthcare Insurance**


Source: IDC, 2020

## Industry Definition and Core Attributes

### Making the Case for Member Engagement, Using All the Data

The consumer member experience in the front office is increasingly enabled by payers in a vision called a "Member-360 data platform" in the back office. This longitudinal data resiliency is expressed as a top-down approach to physical data architecture based on a data management life cycle.

#### Member-360 Data Platforms Defined

In this approach, all enterprise member data is loaded, curated, stored, accessed, aggregated, and archived. Applications and analytics are quickly spun up and down once the data, workflow, and services are in place. This approach centers on a "canonical data model", and is based on standards such as the HL7, FHIR, and ONC U.S. Core Data for Interoperability [USCDI] or the Observational Medical Outcomes Partnership (OMOP) data model, which is an approved OSCDI model that is mappable with public information to FHIR standards.

The data platform not only is the **structure** of the data but also includes the **workflow** around ingestion, mapping, cleansing, codifying, and verifying person identification and data quality.

Once staged, **services layers or applications can point** to the data in its various forms of aggregation and content. Services are enabled for analytic workbenches, models, reports, dashboards, and machine learning opportunities. Last, the constellation of legacy and new applications is pointed, either directly or via mapping to the data platform, to ensure consistency in all ways: care management, consumer engagement, point of care support, or partner applications.

Obviously, this "data factory" approach means a methodology away from process/function and toward a data management life cycle. Data is created, lives, is read, is updated, and dies in a stewarded fashion. It is loaded, curated, stored, accessed, aggregated, and archived. Applications and analytics are quickly spun up and down once the data, workflow, and services are in place.

**The data platform is not only the structure of the data but also includes the workflow around:**

- **Ingestion.** The utilities, workflow, and scheduling for fast, predictable, repeatable data landing
- **Mapping.** The utilities, tables, and translation rules that connect source files to enterprise meaning
- **Cleansing.** The utilities, tables, lookups, and verification sources to indeed identify "truth" using standards such as RXNORM, SNOMED, HL7, etc.
- **Identification.** The utilities, maps, and stochastic and deterministic rules that assign data to a person (member/provider) or other enterprise entity
- **Data quality management.** The ongoing management and monitoring of ingestion, curation, and mapping to identify and resolve outliers

**Embedded into the workflow, payers need enhancements "activated" with the platform, such as:**

- **Activated applications.** The connections and maps to allow the workflows, user interfaces, and reporting of (versions of) applications to effectively use the data platform
- **Activated analytics.** The aggregations, slices, extracts, and rules to enable the analysts, data scientists, modelers, statisticians, and inquirers to do effective analysis
- **Activated access.** The ability for all enterprise personnel to securely, auditably, predictably, and reliably get to the needed data using standard protocols and published interfaces
- **Activated managed services.** The ability to package reusable functions for use by applications, analytics, or partners
- **Activated AI.** The ability to enable a "test bed" from which machine learning can extrapolate other information
- **Activated real-time orchestration.** The ability to have all the ecosystems work as one, in harmony

This approach visualizes data as an asset, recognizing that these capabilities evolve over time and involve considerable integration, coordination, and expense. So, why do payers do this?

## Key Priorities

### Benefits of Member-360 Data Platforms

What IDC sees is that this architectural approach and the accompanying horizontal data engines traditionally sold for their fast/flexible ingestion utilities, abstracted data models, and/or super-fast high-performance databases are now verticalizing into healthcare and combining with similarly performant and flexible analytic engines. Vendors are creating purpose-built solutions with healthcare use cases jump-starting this enterprise approach.

Payers now have a significant desire to develop, maintain, and work off common Member-360 data repositories for both clinical and administrative operational and analytical needs. The combination of the available technology and emerging consensus in favor of a data-centric approach to application and analytic portfolios has inspired the introduction of a comprehensive health data platform strategy to meet most of the needs inside, outside, and across the payer enterprise.

This "data platform," if maximized, optimized, and open, can be a real-time, cloud-based orchestration engine for the enterprise, crucial for competitive advantage. Member-360 data platforms enable six capabilities not found in traditional, fragmented approaches to member data management.

- Enables a "product/plan of one", individualized (combinations of) features that allow personalization of services to members on an individual basis. Either through mixtures of ancillary (e.g., dental, vision, wellness) services, or through customization of deductibles/co-pays, the Member-360 allows detailed vision into **each** member's profile so that they can be understood and served uniquely.
- Meets the CMS interoperability mandates. Payers are forced to exchange data via FHIR formats at the edge. Having a comprehensive unified (logical or physical) profile allows the sharing of data to occur consistently. Members will now see the quality of data stored by payers, and it had better be right and consistent.

- Allows the infusion of new data types. Payers are processing a tsunami of new data.

**These include:**

| Goals | Description |
|---|---|
| **SDOH** | **Social Determinants of Health** data are conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks – grouped into five domains: economic stability, education access and quality, healthcare access and quality, social and community context, and neighborhood and built environment. |
| **PGHD** | **Patient-Generated Health Data** is data created, recorded, or gathered by or from patients (or family members or other caregivers) to help address a health concern – includes, but is not limited to health history, treatment history, biometric data, symptoms, and lifestyle choices. |
| **RWD** | **Real-World Data** is data relating to patient health status and/or the delivery of healthcare routinely collected from a variety of sources – for example, EHRs, claims and billing activities, product and disease registries, patient-generated health data including in-home use settings, and data gathered from other sources, such as mobile devices, which can inform on health status. |
| **RWE** | **Real-World Evidence** is the clinical evidence regarding the usage and potential benefits, or risks, of a medical product derived from real-world data analysis. It can be generated by different study designs or analyses, including but not limited to randomized trials, including large simple trials, pragmatic trials, and observational studies (prospective and/or retrospective). |
| **Social** | **Social** media data is all the raw insights and information collected from social media activity and tracks how individuals engage with an organization's social media content through numbers, percentages, and statistics, which includes (and is not limited to) the following metrics: shares, likes, conversions, comments, mentions, impressions, and clicks. |

Source: IDC, 2022

- Handles low technology data sources and targets. Data types such as CSV and interchange modes such as faxing are still extremely prevalent in many medical offices, social services agencies, and households. Having unified data allows conversions and mappings to be handled consistently and efficiently.
- Encourages loyalty and retention of members to the insurance company. In the new post-COVID, post-ACA environment where consumers can switch employers or payers more readily, the Member-360 allows a semi-retail approach to focusing on the empathy required to retain members who may switch jobs or have alternatives via an insurance exchange.
- Facilitates the merging/aligning of payers and providers (which is becoming prevalent). One provider's patient is one payer's member. Having a uniquely identified member, with all their data handy encourages data breadth as the providers' and payers' can meld, providing unique insight to both parties.

## Technologies Involved in Member-360 Implementation

To build/buy this Member-360 logical or physical data capability to handle content, care, and engagement, many technologies come into play:

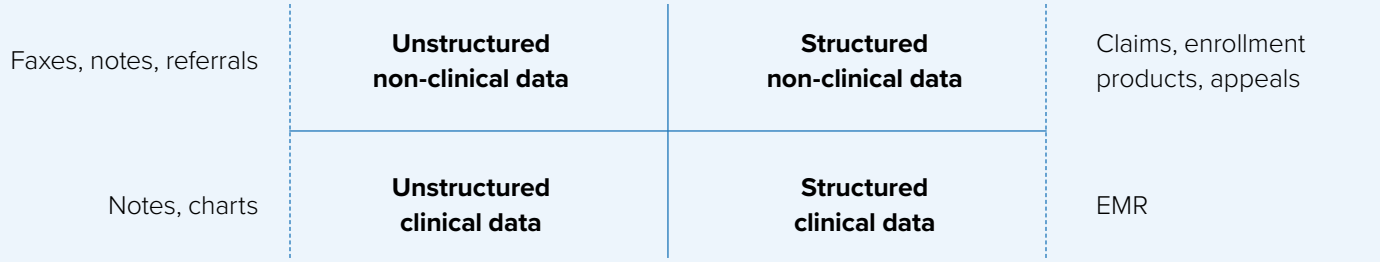
- Identity and access management
- Data ingestion, curation, and cleansing of data via ETL or advanced engines
- EMPI, an "enterprise" master patient index (a centralized, cross-platform solution designed to link/match and reconcile records in real time, from diverse systems, to correctly assign records to a unique "person")
- Longitudinal health records in a Member-360, data warehouse, data lake, and/or FHIR server

- Business rules engines
- Data encryption
- API management
- Secure Enterprise **Member Communications Management Platform**, including delivery mechanisms which leverage the Member-360 by allowing member preferences of channel, media, cadence, and content to be targeted in a personalized way
- Data use logging and audit
- **Enterprise Content Services Platform** with workflow capability. Enterprise content strategies include the rapidly evolving digital content services to capture, manage, process, and secure business content, records, and knowledge.
- **Document applications** enable users to create, author, edit, and publish content, including spreadsheets, text documents, and presentations. Applications include office suites, forms, surveys, eSignature, diagramming, elearning, and document generation software.
- **Capture applications** convert unstructured data to structured information that can be passed to another enterprise application and/or consumed by a downstream task or process.
- **Content sharing and collaboration applications** enable users to store, synchronize, and share file-based content and folders across designated devices, people, and applications.
- **Enterprise content management** provides a foundation for regulatory compliance in the context of automating content-centric business processes and establishing a system of record.

## What Is the Data Universe?

While EMR systems at providers maintain the structured data sets about health, and claims/enrollment systems contain information to pay for health, the entire health ecosystem for payers and providers contains much more data for competitive advantage, as seen in **Figure 3**.

### FIGURE 3: The Data Universe




Source: IDC, 2020

Unstructured data, both clinical and non-clinical, is held throughout the payer and provider universe. Capturing and using that data in ways that enable member engagement is key to differentiation for payers.

### Member-360 Use Cases Involve Unstructured Data in Payers

Payers collect and generate large amounts of their own information. Much of it is in the form of digital documents or unstructured content, and a consequential amount is still on paper. This information ends up disconnected from payer business processes. Workarounds are required to manage unstructured content, and manual processes can be fraught with inefficiency and error, especially when content must be shared across departments. IDC predicts that by 2025, 80% of the total global datasphere will be in the form of unstructured data, which will grow to 144.3 zettabytes.

## Considerations

- Evidence-based practices guiding how to combine non-clinical data with clinical data are still in their early days, especially in consideration of target patient demographics, populations, and conditions that would benefit most.
- Clinical trustworthiness, reliability, and credibility of certain types of non-clinical data (e.g., PGHD) are still being explored, but multiple studies point to the benefits of incorporating SDOH, longitudinal views, and RWD/RWE.
- Reimbursement for the utilization of non-clinical data can be unclear at times, but more guidelines are being published (e.g., CMS reimbursement models on the use of PGHD in remote patient monitoring).
- Moves to the cloud to manage non-clinical data may prove to be a heavy lift considering petabyte (PB) levels of data involved.

## Conclusion

Today, the Member 360 is the center of a customer relationship management ecosystem. This ecosystem is where all enterprise functions operate, are modeled, and examined continuously for accurate or more profitable relationships. Data management in payers is evolving with the introduction of many flavors of Member 360 technology platforms. Vendors with histories in payer health administration (care, utilization, and population health management), healthcare cost/quality analytics, payer core administration (enrollment, claims, and appeals), data management (data factories, data warehousing, and NoSQL databases), information exchange (HIE, EDI, interoperability, and API), content management, and electronic health records are converging around a unified customer profile for members. This lofty ambition meets a key challenge for payers as they try to serve outward facing consumerism and the need for sharing structured and unstructured data via FHIR and other exchange standards across the healthcare ecosystem. IDC believes that the Member 360 market is nascent and will continue to grow with the introduction of social determinant data, remote monitoring data, genomics data, and member "non health" data into the payer ecosphere. Complementary to traditional structured data, unstructured data provides equivalent value, and content management should be addressed in any payer's enterprise data strategy.

## About the Analyst

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Jeff Rivkin, M. Sc, CHRS, PAHM, CPEHR, CBIP, CCP, CDP, has been the Research Director of Payer IT Strategies for IDC Health Insights for over six years. In that role, he is responsible for research coverage on payer business and technology priorities, constituent and consumer engagement strategies, technology and business implications for front, middle, and back-office functions, value-based reimbursement, risk, and quality-based payment and incentive programs, among other trends and technologies important to the payer community.

More about Jeff Rivkin

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