

Bridging the data gap to leverage the power of longitudinal patient record

Executive Summary

Longitudinal Patient Records provide data-driven insights that allow healthcare organizations to make informed decisions to provide the best care while conserving resources. However, patient information across the healthcare systems is inaccessible due to a multitude of reasons, creating a data gap that leads to loss of resources as well as lives.

Data aggregation capability powered by AI can provide the much-needed relief to care organizations by collecting data from various sources and presenting it in a form that allows medical professionals to draw meaningful conclusions from it.

Introduction

In the last decade, the value-based care (VBC) system emerged as a solution to the increasing healthcare spending in the United States. The system incentivizes healthcare organizations to prioritize long-term value for their patients while decreasing costs by tying the provider reimbursement and payment systems to proven health improvements and long-term value indicators for patients.

However, the value-based care system is only beneficial if there is sufficient data supporting medical professionals and payer organizations. Healthcare data has seen mammoth growth in the past two decades. In 2013, 153 exabytes of data were produced, and it was predicted that the number would exceed 200 exabytes by 2020. Unfortunately, the US healthcare system has not been able to leverage technological advancements sufficiently, and widespread data sharing, and consequently the adoption of the value-based care system, still suffer from major roadblocks.

According to a McKinsey study, 20 to 25 percent of US healthcare spending is wasted. That's about a trillion dollars, and a huge chunk of the administrative waste could be eliminated by streamlining data sources between payer and provider organizations. This can lead to simplification of administrative processes, saving billions of dollars in administrative spending across the industry.

For organizations to excel at value-based care, and increase value-based contracts, data sharing and, therefore, interoperability is a crucial step.

Potential of Longitudinal Patient Records in Value-Based Care

Longitudinal Patient Records (LPRs) are a centralized data repository that store patient data such as lab reports, drug prescriptions, physician notes, and patient information forms, SDoH data, claims and approval forms, among other data, to provide an overview of the patient's history across multiple Electronic Health Records (EHRs). Longitudinal patient records rely on data from multiple sources to achieve true interoperability and provide a comprehensive patient database.

These records allow providers to look at the larger picture and take informed decisions supported by the patient's entire history of health. They are a key to unlocking information about health patterns of patient populations needed by care managers to manage the goal tasks of the populations they are managing.

This allows the care coordinators and providers to quickly respond to high impact (clinical and financial) events such as admissions or ER visits etc. A longitudinal patient record allows healthcare professionals to access older records to compare with current data (real-time, clinical, HIE, ADT, claims, patient, device and SDoH data, socioeconomic, environmental, biomedical, molecular and genetic information, along with individual health statuses, behaviors and outcomes) and saves inefficient use of resources.

Widespread adoption of LPRs will allow a two-way communication route between payers and providers that has not existed until now, removing roadblocks and allowing both parties to make decisions that are backed by data instead of misconceptions and guesswork.

Longitudinal patient records allow providers to track the patient's geographic movement, meaning they can track out-of-city appointments and ER visits, which would otherwise go unnoticed.



Challenges in the Creation of Longitudinal Patient Records

The role of big data and technological advancements serves as a cornerstone of healthcare innovation. Longitudinal patient records have emerged as a crucial component of value-based care and crucial for organizations wanting to increase value-based contracts, and would be the go-to tool for healthcare providers to achieve interoperability and engage in value-based care programs.

Despite an abundance of patient data and the widespread adoption of EHRs (which reached 86% adoption rate by office-based physicians in 2017), the US healthcare system has not been able to achieve interoperability due to underlying roadblocks to data sharing: duplicate data, data isolation and fragmentation, non-standardized and non-regulated data management framework, and cybersecurity issues.

This means most providers do not have access to a longitudinal patient record at their disposal, making it difficult and time-consuming to make the most advantageous decisions.

Patient Matching

Hundreds of thousands of medical documents are typed and filled in every day. Human involvement in the data entry process means a higher risk of errors in the data, which leads to information getting lost within the system. Matching patient data is one of the initial challenges in the creation of a longitudinal patient record.

Duplicate data is a barrier to interoperability and contributes towards avoidable care costs and denied insurance claims. According to a Black Book Survey in 2018, organizations operating without a data deduping tool had upto 18% data duplication, leading to inefficient and delayed care outcomes.

The biggest culprits behind patient matching are technological constraints, as well as the detachment of EHR systems and best practices within organizations. Fortunately, the problem has been addressed in part with the development of new technology combined with a communal effort at ensuring higher patient matching rates within the medical community.

Data Isolation and Fragmentation

Most healthcare organizations across the US have their own EHR systems, in which patient data is stored at the organizational level, meaning crucial data that can help health providers make life-saving decisions is stuck in an inaccessible format across hundreds of isolated systems.

Due to the data being stuck in various proprietary systems, most of the patient data across the different systems ends up not being used in the decision-making process by healthcare providers. To illustrate, there are thousands of hospitals and almost one thousand registered payer organizations, all spread out across fifty states. Unfortunately, it is unachievable under the current circumstances to bring all these systems together in the current framework. Longitudinal patient records are therefore the only viable solution.

Non-standardized Data Formats

In the absence of a standard data management model, different data systems are not able to effectively communicate with each other, especially financial and claims data, which is communicated between providers and payers. This can end up delaying time-sensitive procedures.

Misguided EHR Design

Due to the nature of the payment system in the US (where each bill is sent to the insurance companies), EHRs are designed to prioritize payer organizations, and sharing of clinical data is impeded. There is a need to incentivize EHRs that make it easier for healthcare providers and researchers to access and benefit from data.

Data Ownership & Privacy Concerns

As big data increasingly becomes a part of the way the healthcare industry operates, there is a growing concern about the ethics of data-sharing and security breaches. Policy-makers and IT service providers need to create an infrastructure that allows accessibility of data to physicians and providers, while keeping it safe from malicious parties.

Patients understand the need for sharing data, and according to a national survey, "eighty-one percent of adults support increased access to health information for patients and providers." However, they are wary of breach of privacy, and in the same survey, it was revealed that there is a growing call for creating legislation to strengthen and protect data-sharing across digital platforms. Experts agree that striking a balance between effectively sharing and protecting medical data will be challenging – but that achieving this is critical to maximizing the future of care. Finding the optimal solutions will require private and public sectors, payers and patients to collaborate.

Cloud-Based Data Platforms as a Tool for Longitudinal Patient Records

Despite the abundance of data, the creation of accurate and advantageous longitudinal patient records as a norm of healthcare decision-making is still a distant dream.

However, there is a solution, one that has been increasingly welcomed and adopted across the industry. The adoption of technology to bridge the gap between diverse data streams and automate the creation of longitudinal patient records has provided organizations a new way to manage value-based care programs.

Cloud-based data platforms use AI-based technology to collect data from a variety of sources, analyze and decode it to create automated longitudinal patient records that can be used by organizations

Cloud-based data platforms allow organizations to map data across various programs, and clear the clutter to access healthcare data locked in multiple dispersed systems to consolidate and standardize it, and provide information that can lead to the creation of meaningful decisions.

These softwares support multiple data types including, but not limited to HIE/ADT, clinical and claims forms, lab results, physician notes and prescription details.

Our Persivia Data Platform (PDP) provides an all-in-one end-to-end integration between payer and provider organizations, through data collection & aggregation, analyzing unstructured data to provide clinical insights, as well as allowing providers to share the customized care plans with their patients.

Part of the PDP is the Electronic Master Person Index (EMPI), a data acquisition solution that links patient records from disparate data streams with a single patient, works by cross-referencing patient identifiers and presenting them under a single patient ID, the Persivia Patient Identifier (PPID). The EMPI is the perfect solution for accurate patient matching and data deduping.

The PDP works by consolidating a variety of data with features of data warehousing, clinical data repositories, and health information exchanges (HIEs), in order to create a longitudinal patient record in real time. It takes unstructured data such as physicians' notes and transforms it into discrete data for HCC coding and Quality analytics.

Conclusion:

To provide comprehensive value for patients, healthcare organizations need to capitalize on data integration and sharing by employing technological tools such as AI systems and cloud-based software to gain access to the data required to make the best decisions for their patients' health.

Investment and incorporation of these platforms into the healthcare infrastructure has the potential to exponentially expand data-sharing and improve value-based care, benefitting both providers as well as patients.



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