

Case Study: Information Lifecycle and Interoperability

Abstract: Using health care provider data flowing into a claims management system, this study presents an example of loss of critical information in the exchange from system to system because of lack of governed rules and clear understanding of the lifecycle of information. It demonstrates a need for a holistic view of the flow of information and how governing data can ensure that information is available when and where it is needed. It ties the flow of information to the cost of healthcare and helps illustrate the value of data governance to the mission to lower the costs for all Americans.

Introduction: Interoperability is the ability for systems to exchange and make use of information or groups to work in conjunction with each other.

The Health Information Management Systems Society (HIMMS) describes it as follows: “Interoperability describes the extent to which systems and devices can exchange data, and interpret that shared data. For two systems to be interoperable, they must be able to exchange data and subsequently present that data such that it can be understood by a user.¹”

Case Presentation: The cost of healthcare insurance premiums is based on the work of actuaries. These financial data scientists mine for claim and outcome information and set the price of healthcare insurance premiums. The goal is to set the price at a level that ensures solvency to cover the predicted future costs of patient claims. They must also minimize risk to the health insurance company of selling Products (health insurance plans we buy) that do not provide sufficient income to meet the financial obligation of the health insurance company. Most health plans are also very concerned about the skyrocketing cost of healthcare and are scouring data for ways to help reduce the costs such that premiums can lower rather than rise so that Americans can afford to pay their insurance premiums.

Interoperability is the ability for information to be understood by two parties, be they systems or people, and made use of to act in concert. Without interoperability data must be manually interpreted and passed along. This opens the very real probability of some loss of content.

This loss may be incidental at the point of interpretation, but may in fact be critical several steps down the lifecycle of a process. In the case of healthcare provider information at a health plan, information is managed in a provider data management (PDM) system. The PDM holds demographic information, network participation, location information, quality scores, billing/payment information and pricing pointers related directly to the contractual rates, credentialing and enrollment of the provider as “participating.”

In order to pay a claim submitted by a provider, only a small amount of that information is needed – specifically, name, Tax ID, location, network, pricing, and payment information. If the system integration between the PDM and the claims processing system only passes the information to pay a claim to a provider, the amount of information exchanged is kept to a minimum. However, the life-cycle of the information does not stop at claims payment.

After a claim is paid to a provider, the information about that claim is passed to a clinical evaluation team with the responsibility to evaluate the care provided, ensure that billing matches acceptable care standards for the diagnosis, and that the physician is qualified and trained appropriately for the scope of practice represented within the billing codes. In order to do those functions, the clinical evaluation team needs information such as the physician’s training program, board certification, contractual rates, and aggregated claims data. The clinical evaluation team’s system could directly extract information from both the PDM and the claims payment system. But it is much more efficient for this information to aggregate and stay together through the life-cycle rather than requiring “matching logic” to connect PDM provider information with the information and records in the clinical evaluation software.

Beyond clinical evaluation, a health plan employs Medical Informaticists to mine data for clinical trends, population health, and many more things. While they often connect to data lakes and data marts to mine for data to perform advanced analytics, enough information is needed when their business process begins for them to be able to find the information that is relevant.

One step beyond Medical Informatics is Actuarial, which is the group of financial data scientists who evaluate claims and population trends and set pricing for our health care premiums

in order to cover the risk to the health plan and provide information to define and price health care Products to employer groups or individuals.

Each of these functions require that the information entered in the PDM be carried along, aggregated with claim treatment and financial information, and be understandable and usable by each of the teams in the life-cycle of the data.

Outcome: Without appropriate governance ensuring that information retains unique characteristics and markers, the conclusions that shape both the expectations of clinical outcomes and the price of health insurance premiums will be at risk to miss clinical trends that may need intervention or to price a Product too high or too low in the market.

Summary: The enforcement of data standards, clear and understandable transformations and aggregation of data from system to system has a dramatic impact on the lives of all Americans. Clear and accurate information is a necessary part of understanding how healthcare can become more affordable. Data governance is a crucial part of that promise.

References:

¹<http://www.himss.org/library/interoperability-standards/what-is-interoperability>

