

WHITE PAPER

The next chapter of enterprise analytics — and how payers can prepare



Healthcare payers today are facing a changing healthcare marketplace that demands business model transformation and the redesign of operational processes. In this new paradigm, information-centric strategies that support data-driven decision making across the enterprise can help payers compete.

However, big data and analytics solutions can have shortcomings. Proprietary and best-of-breed approaches can require valuable time and resources to build, integrate and maintain — while outsourcing data analytics can constrain reporting frequency and timeliness. In a world where operational efficiency and fast, reliable information is paramount, these limitations can put payers at a competitive disadvantage.

In the next chapter of enterprise analytics, payer technology and analytics leaders can help drive transformation by leveraging off-the-shelf, industry-recognized methodologies in their own technology environments — an approach that can accelerate time to value by reducing the time and resources required to analyze enterprise data and meet the needs of business operations.

Looking ahead, payers that want to leverage this approach should begin by evaluating their enterprise data warehouse (EDW) maturity, data management practices and enterprise analytics roadmap. Taking these actions can help them identify opportunities to advance EDW and data management practices, and prioritize key analytic use cases to target.

How mature is your enterprise data warehouse?

There is only one

A data warehouse is an enterprise data warehouse if it holds all of an organization's information and makes it available for various stakeholders across your company. If there are other data warehouses used for reporting that have overlapping subject matter or additional information not in or derived from the EDW, then analytics and reports may be generated that differ or compete with one another.

Latency and freshness

The timeliness of analytic data should meet the needs of your business operations. A mature EDW will have the required current data through an aligned update plan. If your users need a daily report of patients who are being admitted or discharged from the hospital, a weekly refresh of your EDW will not meet the business expectation. Not all situations require real-time data latency, but nearly all situations require consistent and dependable data refreshes.

Data mart strategy

Various project teams will need different views of the same data, aligned to their strategic objectives, enabling them to answer specific business questions. Although it is critical for the underlying data and definitions to be consistent (for instance, how diabetic patients are identified), the questions that are asked by different stakeholder groups (for example, actuarial and underwriting, care management, network management, and sales and marketing) will vary. If your end users are building their own copies of your data to fit their needs, then your EDW maturity level may be low.

Usability and training

Self-service and ease of use are good criteria for measuring EDW maturity. Users should be able to navigate the domains of your EDW based on training and online guidance. If more than 80 percent of new query and report needs are completed by users without a call for assistance or a support ticket, your EDW is likely mature.

Governance and growth

Another aspect of EDW maturity is its ability to handle change and adapt accordingly. If project teams feel like it's too much work to create new domains or implement changes, your EDW strategy and solution may be at risk.

For payers that have invested in or are building EDWs, enriching these assets with analytics can help support data-driven decision making and greater business value across the enterprise. While a mature EDW can provide a strong foundation for enterprise analytics, it often represents a continuous journey — not a final destination — as business needs and technology constantly evolve. To help you assess your EDW maturity and identify opportunities for improvement, consider evaluating your solution against the following measurable characteristics of a mature EDW.

Is your data ready for advanced analytics?

Completeness checks

An audit, balance and control (ABC) framework should be in place to identify and limit the impact of missing data, and you'll want to determine acceptable thresholds when data is missing. Establishing these thresholds and benchmarks by field will focus the data warehouse team on areas that need further improvement, as well as allow users to contemplate the impact that incomplete data could have on their analytics and reporting.

One example audit is the evaluation of monthly record and payment total counts. Significant variance in the month-to-month totals should trigger an investigation to determine the cause of inconsistency.

Validity checks

Next, it is important to conduct validity checks on fields that should contain standard codes or elements, and compare recorded values to lists of possible valid values for that field. When these validity checks flag unexpected values, you can establish the validity of the nonconforming code. If new values have been added to the coding scheme, an update of the conversion program or code lists may be in order. Examples could include ICD-10 diagnosis codes, revenue codes, plan codes, ZIP codes or even gender.

Reasonableness checks

Finally, consider conducting reasonableness checks to ensure the data makes logical sense. For instance, look at the relationship between two or more related columns, or between a column and benchmark data, to confirm they are reasonable. Examples of reasonableness checks include:

- Average length of stay and percentage of one-day stays for inpatient confinements
- Average cost per admission and percentage of admissions with catastrophic payments
- Ratio of surgical services to total services
- Percentage of non-specific diagnosis codes
- Ranges of average cost per service by procedure code

A mature EDW that is augmented with advanced analytics can help payers drive business transformation. But analytic insights are only as reliable as the underlying data itself. To produce information that is credible and can be used with confidence, payers should, as a starting point, institute a series of thorough quality checks to evaluate the completeness and validity of the data.

What is your enterprise analytics roadmap?

Payers can deploy advanced analytics on top of their EDWs to enable more reliable, closer-to-real-time decision making across the organization and to enhance the value that analytics teams can deliver. But with numerous business intelligence needs and stakeholders, prioritizing can be challenging.

One way to move the needle is to develop an enterprise analytics roadmap, which identifies analytic needs and associates them with business priorities and requirements. Timelines to meet requirements can then be established given available resources. We recommend following a four-step approach.

1. Align analytics initiatives with business priorities

Begin by identifying the strategic initiatives and business activities that could be most positively impacted through enhanced analytic insights.

In addition, it is beneficial to evaluate the workflows that could be made more efficient and effective with closer-to-real-time information. For instance, do care management stakeholders face greater challenges than others in getting their jobs done with the information currently available?

Some questions to consider include:

- What are the key business imperatives?
- Where can the greatest impact be made with support from advanced analytics?
- Which business functions and stakeholders require more timely information?



The anatomy of an analytics roadmap

To roll out advanced analytics across the enterprise, build an analytics roadmap to help chart the course.

1. Business priorities: Identify the key business initiatives across stakeholders and the payer business, and assess the needs and level of urgency by business function.

2. Analytic tools: Evaluate the analytic capabilities and tools currently in place to address the prioritized business needs. Use a framework to identify gaps and weaknesses, including groupers, risk and severity models, clinical rules and reference data.

3. Reporting requirements: Determine how frequently prioritized analytics will need to be run, as well as the requisite data elements. Confirm that appropriate extract, transform, load (ETL) protocols and mappings are in place to support desired end-user visualizations and requirements.

4. Ongoing monitoring: Revisit the roadmap every three to six months through the lens of business priorities with key stakeholders to proactively maintain strategic alignment. If needs have shifted, set aside dedicated time to adjust specific analytic initiatives.

2. Identify the analytics required to meet business needs

With specific business priorities in mind, the next step is to determine what analytics are needed and how they will be visualized. You'll want to assess the current suite of analytic tools and capabilities employed to address stakeholder needs. Also consider the availability of new tools or prebuilt content that could shorten the time to delivery and/or lower the development and maintenance cost. This is when you'll need to pinpoint any skill gaps and how you might address them.

When reviewing new tools and skills, consider whether they could significantly improve other areas of analytic content.

Advances in the following categories tend to expand the overall analytic environment and should be considered:

- **Grouping methodologies:** Do existing methodologies (for instance, admissions, episodes and outpatient event groupers) effectively group together relevant clinical and administrative data?
- **Risk and severity models:** Do existing statistical models produce reliable, valid predictions of concurrent and prospective costs, and of specific outcomes of interest (for instance, risk of hospitalization)?
- **Clinical rules:** Are industry-defined standard clinical rules in place?
- **Reference data:** Are reference data and industry benchmarks available to provide structure and context in end-user reports and to create meaningful points of comparison for performance?

3. Determine the timeliness of reporting needs

As advanced analytics are selected for the analytic environment, payers should also evaluate their fit with existing business intelligence tools and capabilities.

A few questions analytics leaders can ask to get started include:

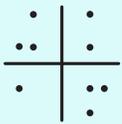
- Are the appropriate ETL protocols in place and tested to move data from the warehouse to fit-for-purpose analytic data marts?
- Are these analytic data marts easily accessible to analytics teams?
- How current will the data need to be for various business reporting subject areas?
- Would a conformed dimensional warehouse model speed user analysis and allow root cause to be evaluated?

4. Monitor and adjust

Implementing a comprehensive EDW and advanced analytics strategy will likely be an iterative, dynamic undertaking. As the healthcare industry changes, payer business models and functions will need to evolve, as well. You can expect shifting business priorities and quick-changing analytic needs. That's why it's important to view your EDW and analytics initiatives as an ongoing process — one that you can continue to improve but that doesn't need to be perfect to get started.

For instance, as you build out your EDW, consider starting with targeted analytic use cases that fit that infrastructure stage, then assess the effectiveness and build on the learnings as your EDW evolves.

Regardless of where you are in the EDW-analytics journey, you'll want to designate time quarterly or biannually to revisit the analytics roadmap and evaluate whether needs have changed. Designing an analytic environment that is flexible enough to accommodate those changes should be one of the top priorities in the roadmap.



How good is your data?

It can be difficult to assess data completeness and quality, as well as the statistical validity of analytic models without reference and normative data. Payers looking to enhance enterprise analytics should evaluate whether their reference data and industry benchmarks help them to:

- Understand how much missing data is too much
- Determine how many data errors are acceptable and at what level they could inappropriately influence outputs
- Pinpoint data aberrations unique to their populations
- Provide context and structure to granular healthcare data like prescription drug and ICD-10 codes
- Create points of comparison across a variety of key performance indicators

How mature is your EDW?

Assessing your EDW's maturity and identifying opportunities for improvement is no easy task. Consider these measurable characteristics in your evaluation.

- There can be only one: An EDW should be the single source of truth for each data subject.
- Latency/freshness: Data should be updated frequently, consistently and with limited lag time.
- Data quality: Users should feel confident in the answers they produce (the 80/20 rule).
- Usability: Users should find the EDW approachable; they shouldn't fear it.
- Governance/growth: You should be able to make changes to your EDW in a straightforward and flexible manner.
- Data marts: Your EDW should support multiple views of warehouse data for your various user communities. This includes date and time dimensions for historical analytics.
- Cost: Building an EDW involves significant cost, so keeping it relevant should be cost-efficient.
- Playing nice in the sandbox: Power users (20 percent) may require a sandbox to provide performance stability for analytics users (80 percent).

Conclusion

From member health and engagement, to demonstrating value to employers, to identification of operational efficiency improvement opportunities, effective analytics can serve as the bridge that connects the enterprise data warehouse to the meaningful information necessary to drive business transformation.

Licensing robust, industry-recognized analytics that can be layered on top of the EDW can help. By utilizing ready-made analytics, payers gain access to tools that can help reduce the time and resources required to build and maintain analytics internally – freeing up more time for analysts to understand business needs and work with analytic data to generate answers. Additionally, these solutions can provide more flexibility in reporting frequency relative to outsourcing data analytics, which can help analysts deliver more timely information that meets the needs of business operations.

As healthcare analytics become increasingly available to license, payers should identify vendors with not only deep analytic and healthcare expertise, but also the technical capabilities to help them maximize their underlying technology investments.

In today's complex healthcare landscape, the path to success for payers will likely require a greater reliance on enterprise data and the critical insights that can be derived from that data.

Learn more

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