

Seizing the golden opportunity to create an enterprise data strategy



Every life sciences company that engages in end-to-end drug discovery, development and commercialization can benefit from an enterprise approach to data.

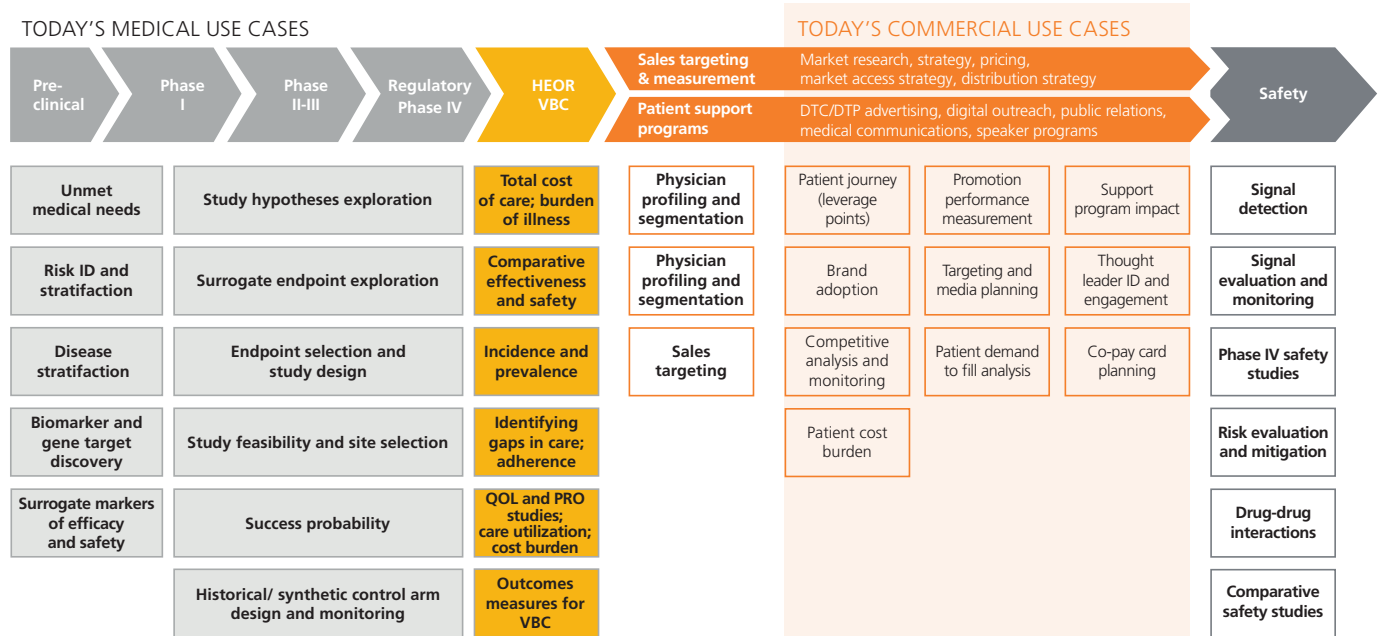
Forming a data strategy for the enterprise means that data is acquired for the benefit of all departments. An enterprise data strategy considers questions across functions in order to maximize insight and share costs. Even a biotech that is focused on just one neurological disorder may still be able to leverage data across all business functions.

A cohort of integrated electronic health records (EHR), medical claims and pharmacy claims for a group of patients with Parkinson's disease could be used for the following analysis:

- Risk factor discovery
- Early symptom identification and disease progression
- Time to diagnosis
- Time to first therapy
- Prescribing patterns and clinical drivers of provider therapy choice
- Comparative effectiveness and safety
- Identification of undertreated populations and gaps in care
- Stratification of patients by varying rates of disease progression and discovery of new markers of disease progression
- Burden of illness and total cost of care
- Clinically driven patient profiling
- Post-market safety signal detection and validation
- Total cost of care
- Value based contracting strategy

Real-world data (RWD) has value across the brand's life cycle

Dozens of questions can be answered with a broad clinical and claims data set



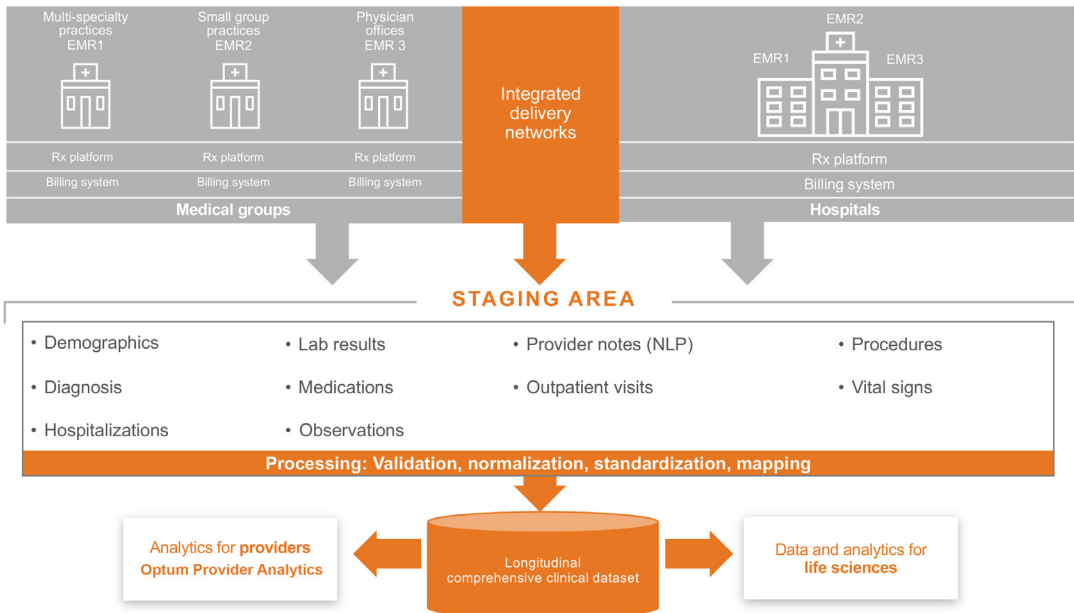
Why Optum data

Optum data is produced at the heart of health care, at the intersection of clinical care and reimbursement. It's not the by-product of a single electronic medical record (EMR) or an aggregator who has "stitched" together data to approximate a continuous health record. Optum has deep expertise in the curation of data across EMR systems to produce high-quality data for research and analysis. More than 50% of the health systems in the Optum EHR data set use more than one EMR and frequently use multiple EMR/EHRs. Optum connects each unique patient across EMRs to remove double counting and create a more complete longitudinal record.

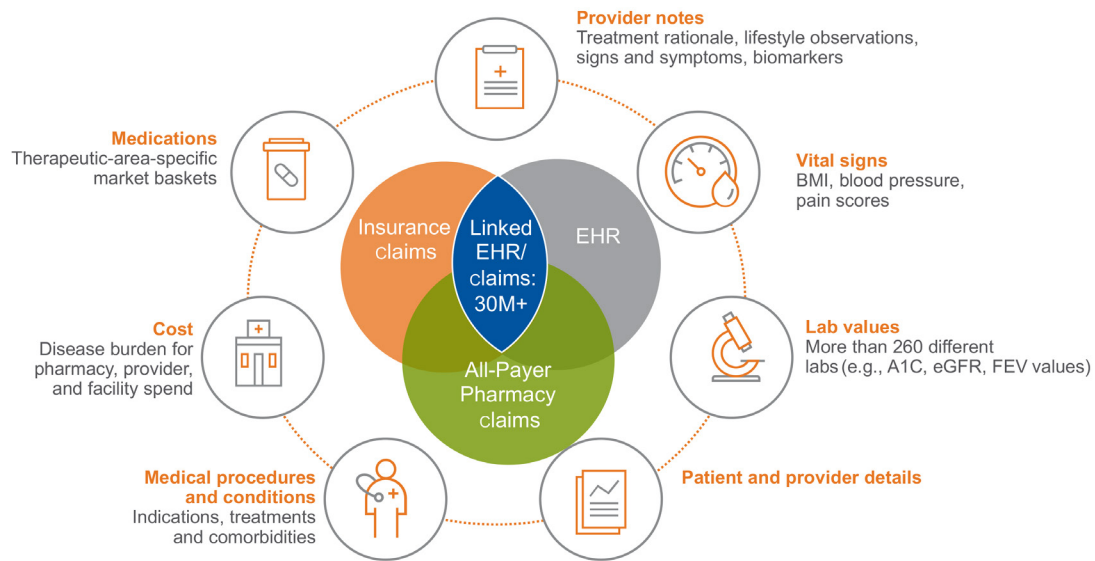
Additionally, even the data within EMRs requires standardization. Each and every medical concept, from diagnosis to procedure codes and labs, can come with localized coding conventions that make it very difficult to use for analysis without mapping them to a standardized concept. Even within a health system using one EHR, different installations of that system can cause double counting and come with wide variations in provider coding. Lab measurements also need to be normalized. At Optum, we normalize more than 12 billion lab ranges across our providers, and have mapped over 2,700 medications and 10,000 local diagnosis and procedure codes per client.

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Optum is engaged in supporting payers, providers and patients. Therefore, Optum data is “whole-patient” data, meaning that it is sourced from a patient’s complete experience in the health care journey. Optum has one of the largest complete sets of data assets composed of EHR data and eligibility-controlled adjudicated medical and pharmacy claims available to life science organizations. It’s important to note that these claims data are for “closed” claims, meaning they provide information related to both the submitted claim and reimbursement.

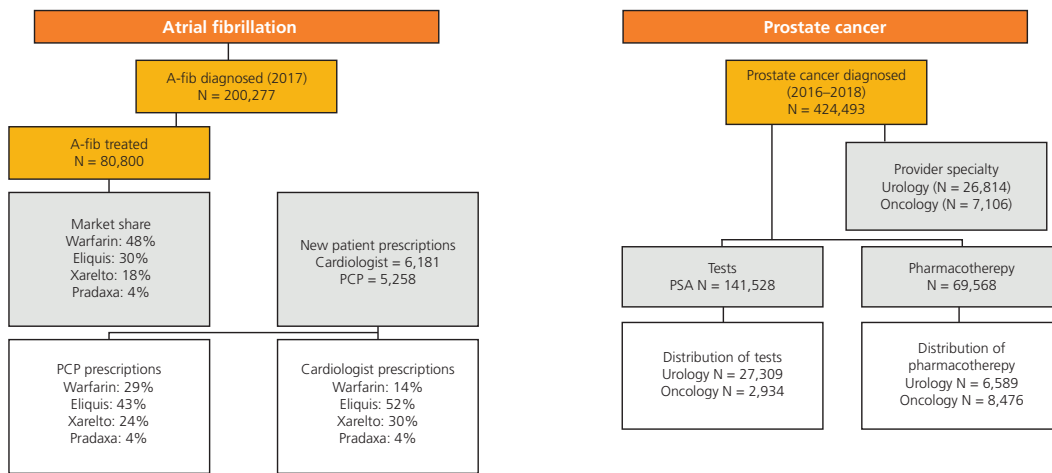


Optum EHR data

Optum data assets include more than 95 million longitudinal EHR lives sourced from 80 provider groups, including 40 integrated delivery networks, representing primary care, specialty clinics and the inpatient experience. Optum EHR data has breadth, depth and the longitudinality needed for outcomes research, patient journey maps and clinical patient profiling for commercial teams.

Optum EHR data has breadth across disease states and across the patient’s interactions with the health system. The data has tens of millions of patients across broad therapeutic areas like Type 2 diabetes, heart failure and COPD. It includes significant patient counts in areas like oncology, with more than 100,000 breast and prostate cancer patients, tens of thousands of patients with lung, colorectal and prostate cancers, and thousands of patients with melanoma, multiple myeloma and several subtypes of leukemia.

Below is an example of how one data set can be used to map the patient journey across multiple disease states. Importantly, the same cohort of patients could be used to understand the differences in clinical outcomes by speciality, therapeutic or clinical assessment. The sample sizes, longitudinality, continuity of care and rich clinical depth can power dozens of analyses for HEOR, epidemiology, safety, clinical research and commercial teams.



Optum data also offers depth with more than 400 labs, dozens of microbiology measures and observation types, more than 100 different types of clinical assessments, and over 4.5 billion provider notes covering areas like signs and symptoms, progress notes, pathology, radiology and more.

Life sciences organizations can extract more measures of disease progression, and more biomarkers and other lab test results from notes to stratify patients and identify potential trial endpoints. Optum provider notes have been used for multiple purposes, including identifying rare disease patients with conditions like Kabuki syndrome. These notes often contain details about symptoms and suspected or confirmed diagnoses when current ICD codes do not exist.

Optum medical and pharmacy claims

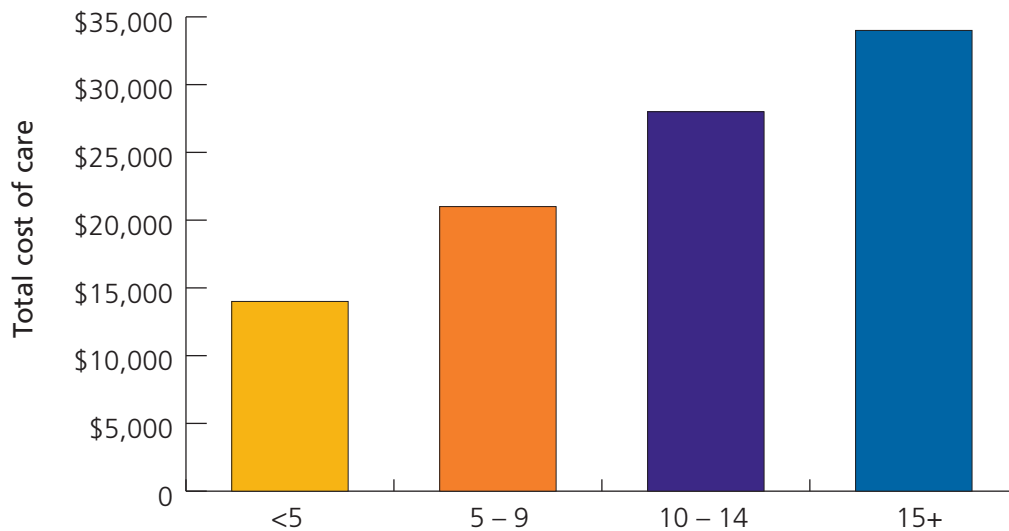
For years, Optum medical and pharmacy claims data have been used for outcomes and epidemiology research because of size, breadth, eligibility control and availability of “closed claims.” Optum sources more than 80 million claims lives dating back to 2007.

Integrated data

Optum sits at the center of the health care system with a longitudinal view of care and reimbursement. This gives us the unique ability to create a linked data set between claims and EHR covering more than 30 million patient lives. These data sets include patients who are deterministically matched, meaning we know that the patient in the EHR is matched directly to their adjudicated medical and pharmacy claims. This is critically important to being sure that the costs projected or cost benefit observed in any group of patients is the correct reflection of their clinical features and outcomes. Many vendors use propensity score matching or a form of estimating that patients in the EHR are similar to those found in claims, but it is impossible to validate that they are in fact the same patients.

Integrated clinical and claims data supports the understanding of the connection between a patient’s clinical features, outcomes and cost. For example, in an analysis of patient-reported migraine symptoms, natural language processing performed on clinical notes showed that patients who reported migraine symptoms on more days also had higher associated care costs.

2017 total cost of care by # of migraines documented*



All-payer

Optum recently enhanced its integrated data by sourcing additional pharmacy claims across all payment types (including self-pay and Medicaid). This increases the completion of records relating to pharmacy fill data and provides a breadth of payers to support more representative research. More than 15 million patient records include pharmacy claims from other payer groups.

Note: For the purposes of this article, “medical teams” is shorthand for everyone engaged in research, clinical development, HEOR and epidemiology sciences, safety and medical affairs. “Commercial” includes those focused on marketing, sales and market access.

Conclusion

The movement towards precision therapeutics and value-based contracting has introduced the need for clinically-robust data and associated cost data. Such information allows us to identify and engage patients, and understand and demonstrate the value of new diagnostics and interventions. More and more, commercial teams and medical teams share similar questions and need similar data to conduct these analyses.

Organizations that see data as a strategic asset to power their understanding of diseases and their progression — as well as the clinical and economic impact of their therapeutics — will gain a competitive advantage as they speed label expansions and market access through differentiated payer-provider value propositions. Those groups who successfully leverage data for cross-functional insight will maximize the benefit and amortize the cost of real-world data across the entire organization. These insights will ultimately benefit the entire health care ecosystem whose shared goal is improving patient health and well-being.

All data referenced is Optum Electronic Health Records 2007-2018, Optum Medical and Pharmacy claims 2000-2018 or Optum Integrated All Payer Data 2018.

To learn more about how Optum data can help you meet your enterprise data needs, please contact us.

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*Optum electronic health records. 2017.

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