Data and the new era of visibility
Using data to drive decisions in life sciences
Data drives decisions.
The quality of the data you use — and how you use it — determines whether or not those decisions will turn out to be successful.

What makes some data more valuable than others? If you’re in the life sciences business, it is how well the data can help you identify, understand and address the priorities of patients and providers, as well as regulators and payers. It also means being able to ask the right questions.

Use the right data and analyze it properly, and you can reap the rewards in terms of better patient and financial outcomes. Make a misstep, and the repercussions can be costly and far-reaching. This is particularly the case now that we’re seeing a historic shift in the health care payment paradigm from fee-for-service to value-based reimbursement.

“One of the biggest setbacks for our clients is that they’ve stopped asking the questions that they haven’t been able to answer. Our data enables them to answer questions that they need answers to — but may have stopped looking for.”

Steve Davis
Senior Vice President, Data and Advanced Analytic Tools, Optum Life Sciences
First, determine what happened.

So, where do you begin? At Optum®, we start with data from the nation’s largest health care claims database. This includes claims data on over 120 million lives, dating back to 1993:

**Physician claims | Facility claims | Lab results | Pharmacy claims**

Optum claims data contains complete member information for medical and pharmacy benefits, including enrollment dates, plan design details and cost information. As a result, we can use it to analyze resource utilization and associated costs across the entire health care continuum. Also, since we use a person-level de-identification algorithm, it is compliant with HIPAA and other privacy regulations.

This data is particularly valuable because it’s eligibility controlled. The database it comes from is a closed system, which makes it accurate and precise. And it is becoming even more powerful. Optum is expanding this claims data to include other payers including pharmacy claims from the Crossix data network. The Crossix relationship will enhance our database with over 1 billion prescriptions per year. It includes data from 98 percent of health care providers and 94 percent of pharmacies. This increases the longitudinality of data on patients significantly. Additionally, the Crossix data represents all payers (including cash payers).

“Get to the truth

Physician claims  
Facility claims  
Lab results  
Pharmacy claims  

De-identification  

Data warehouse  (medical, lab, pharmacy, hospital)  

In order for our clients to be successful in this new pay-for-value paradigm, they need to understand where their medication does the most good. They need to understand what performance metrics are going to best reflect their impact on the patient population. And then they need to understand what strategies they can employ, what levers they can pull to really maximize those benefits.”

Meg Good, PhD  
Vice President of Health Economics and Outcomes Research, Optum Life Sciences
Next, explain why it happened.

While the claims data tells us what happened and how much it cost, it’s missing one important piece of the puzzle: the why.

Why was the patient seen? Why did the doctor prescribe one treatment over another? Why did the patient stop taking her medication?

The answers to questions like these can provide extremely valuable insights into what is motivating stakeholder decisions throughout the health care timeline. Unfortunately, they require more than what you can find on a claim form, information you can only glean from provider/patient interactions. The good news is, while we can’t listen in on those conversations, we can do the next best thing.

Optum has access to electronic health records (EHRs) for more than 70 million individuals through our strategic services relationship with provider groups. These EHRs contain an incredible amount of rich information that can help answer the “why” questions.

The EHR data comes from more than 50 different clients spanning all 50 states representing over 140,000 providers, 6,500 clinics and 600 hospitals. On average, it includes four years of patient history and includes a full spectrum of inpatient and outpatient treatments.

This data includes many valuable clinical insights not available in the claims data. Some of it is structured, such as vital signs, observations, lab results, etc. And some is nonstructured, like provider notes.

As you might guess, provider notes are not all that useful in their original form. That’s because they are written in a number of different settings by a wide range of professionals, often using different lexicons, references, spellings and formats.
To successfully mine the gold in provider notes, Optum uses natural language processing (NLP) to bring to light invaluable details and insights for researchers and marketers, including:

- Provider observations
- Patient history, statistics, labs and vitals
- Original date of diagnosis (which can extend the time frame of a study)
- Signs, diseases and symptoms (SDS)
- Medications, both prescribed and OTC
- Treatment rationale and plans

This puts you right in the middle of the provider/patient conversation, where incredible granular detail about patient assessments can be gathered.

For example, when a patient talks about pain, NLP pulls out details such as whether it’s dull or sharp, moderate or severe, rare or constant, or increasing or decreasing. This information can then be used in a myriad of ways to advance your product strategy, such as to fine-tune and customize your communications and marketing so you can be sure you’re sending the right message to the right audience.
Finally, put it all together.

Now, here’s where it gets really exciting. We have created a first-of-its-kind database containing linked claims and EHR data on more than 12 million lives using our proprietary deterministic matching capabilities. This integrated claims and EHR data allows us to better understand what’s happening in the context of patient visits and how that is impacting patient outcomes. As a result, we are able to draw a complete, comprehensive picture of the patient experience and generate actionable real-world evidence.

By bringing together claims and EHR data, we are able to provide our clients with a much more detailed view of the clinical profile of patients, as well as the interaction between the physician and patient.
What it means for life sciences companies

With the transition from pay-for-volume to pay-for-value underway, the financial incentives and rewards for all stakeholders in the health care ecosystem are aligning like never before. Payers, providers and life sciences companies all maximize their financial rewards — and patients get the best, most cost-effective care — when the right patient gets the right treatment at the right time.

To make sure you’re doing your part and outperforming your competitors, you must make the right decisions at each stage of the product life cycle. By bringing together claims and EHR data, we are able to provide you with key information every step of the way that can help you address the needs and demands of all the stakeholders in the marketplace with pinpoint accuracy.

What do you want to accomplish?

Take a look at the chart below to see how Optum data can help.

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<thead>
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<th>Planning and development</th>
<th>Testing and approval</th>
<th>Marketing</th>
<th>Follow-up</th>
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<tr>
<td>Define product value landscape based on stakeholder needs, competition, and regulatory/market access hurdles</td>
<td>Measure product impact and effectiveness for clinical trials</td>
<td>Secure formulary approval</td>
<td>Conduct post-approval safety studies</td>
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<td>Identify treatment gaps and disease burden</td>
<td>Prove product efficacy</td>
<td>Develop value propositions</td>
<td>Conduct longitudinal studies</td>
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<td>Identify product demand and profitability</td>
<td>Conduct comparative effectiveness evaluations</td>
<td>Promote patient, provider and payer engagement</td>
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<td>Pinpoint areas where your capabilities best match up with product demand</td>
<td>Establish and substantiate label claims</td>
<td>Identify product differentiation</td>
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<td></td>
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<td>Build customer relationships and brand awareness</td>
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<td>Promote provider/patient dialogue</td>
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Optum data in action

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This data provides new and differentiated value in terms of visibility into the clinical profile of the patient and their interactions with their physician on a day-to-day basis. It also allows us to see more broadly across the entire health care system.”

Curt Medeiros
President, Optum Life Sciences

Take a look at these real-world examples to learn how others are putting our data to work.

Drive market expansion.

THE CHALLENGE
A company experiencing delays in its diabetes pipeline wanted to expand the market for its existing diabetes drug.

THE APPROACH
Using Optum EHR data, they found that the clinical profile of patients who use their drug was not what they assumed it was. The company was under the impression that their drug was being used by patients who have clinical profiles similar to those taking GLP1 and basal insulin products. What they found was that there was a much closer connection between the clinical profiles of patients taking their drug and patients taking SFUs.

THE PAYOFF
This allowed the company to expand their market by also targeting patients using SFUs.
Understand the competitive landscape.

THE CHALLENGE
A commercially-focused team promoting its brand in the immunology space wanted to better understand the competitive landscape across six different indications: rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, plaque psoriasis, Crohn’s disease and ulcerative colitis.

THE APPROACH
Rather than adopt a product attribute approach, Optum analyzed its EHR data to identify products that providers use to meet a similar clinical need in the real world:

- **Line of therapy**
  Understanding when each product is typically introduced to immunology patients illuminates the competitive set of products that prescribers consider for therapy.

- **Switching**
  Identifying products that have a high degree of mutual switching underscores products that prescribers view as treating a similar clinical need.

- **Clinical profile**
  Comparing the clinical profile of immunology patients prescribed each product shows how providers treat based on the clinical presentation of patients.

THE PAYOFF
Optum in-house clinical experts were able to define the metrics of interest across five different categories used in this analysis:

1. Lab results (from structured EHR)
2. Quantitative pain scores (from structured EHR)
3. Quantitative severity scores from provider notes
4. Qualitative symptomatology from provider notes
5. Qualitative pain characterization from provider notes
Evaluate the market for NOACs.

THE CHALLENGE
To find growth opportunities for a manufacturer of a new oral anticoagulant (NOAC).

THE APPROACH
Optum used a combination of claims and EHR data to conduct a comprehensive, in-depth study of the NOAC market. The study examined how the profile (age, health, riskiness) of atrial fibrillation patients using NOACs has evolved since the introduction of the medication and identified the brand market share drivers for NOACs. We also examined how provider brand preferences related to a patient’s profile, what the relationship was between cardiologist and PCP prescribing patterns, and what those patterns suggested about the influence cardiologists have on those PCPs.

THE PAYOFF
We found a number of possible growth avenues, including opportunities with untreated, one-fill-only and primary non-adherent patients. We also found opportunities with relatively healthier and comorbid patients who were new to NOACs or who could be switched from one drug to our client’s. Our findings also pointed toward taking a different approach when communicating with PCPs vs. cardiologists based on their NOAC preferences.

“This new data allows a transformative shift in the market from data being simply insightful, to data being actionable.”

Steve Clark
Senior Vice President, Optum Life Sciences
To satisfy all the stakeholders in the health care continuum, life sciences companies must meet incredible information demands. Depending on the audience, they must prove that their product:

- Works and causes no harm
- Will contribute to controlling costs
- Is affordable/accessible
- Will create healthier/happier patients
- Will ultimately cure or manage the condition that is impacting the quality of a patient’s life

Along the way, they must make critical decisions with incredible financial consequences as they develop and market their product. That presents a huge challenge that requires reliable data and expert analysis. Optum provides both.

Integrated data from Optum adds clinical specificity to eligibility-controlled health care resource utilization and cost information on an enormous scale that is unmatched in the industry. Add to that the skill and experience of our world-renowned analysts, and you’ll have the data and know-how you need to develop and market products that can define the marketplace and drive real clinical change.

What’s unique about the Optum life sciences data is the breadth that it covers throughout the population. The sheer volume, and the sheer ability to capture medical claims, pharmacy claims, lab claims, radiology claims and physician notes, is something that we believe is not surpassed by any other provider of data.”

Brian Solow, MD  
Chief Medical Officer, Optum Life Sciences

Learn more about how Optum data provides information throughout the product lifecycle to address stakeholder needs with pinpoint accuracy.