

Healthcare analytics

How data is changing everything



CONDUENT



Humans have been generating and sharing medical data for thousands of years. But we're only just starting to get good at turning it into insightful information and putting it to use.

New technologies have made it easier for providers, payers, employers, consumers, and other stakeholders to access, combine and analyze healthcare data. And a whole host of social and economic factors mean we need to.

Over the next few pages, we'll explore:

The drivers

Why healthcare analytics have become necessary, possible, and frankly, inevitable.

The use cases

How analytics drive positive outcomes, high quality care, and lower costs – changing the way payers and providers work.

The principles

Some lessons to guide your own analytics programs.

Four drivers of healthcare analytics growth



1. The fundamentals are changing

More people have insurance coverage

The Affordable Care Act is bringing more insured Americans into the healthcare system. About 12 percent of U.S. adults were counted as uninsured during the first quarter of 2015, down more than 5 points.¹

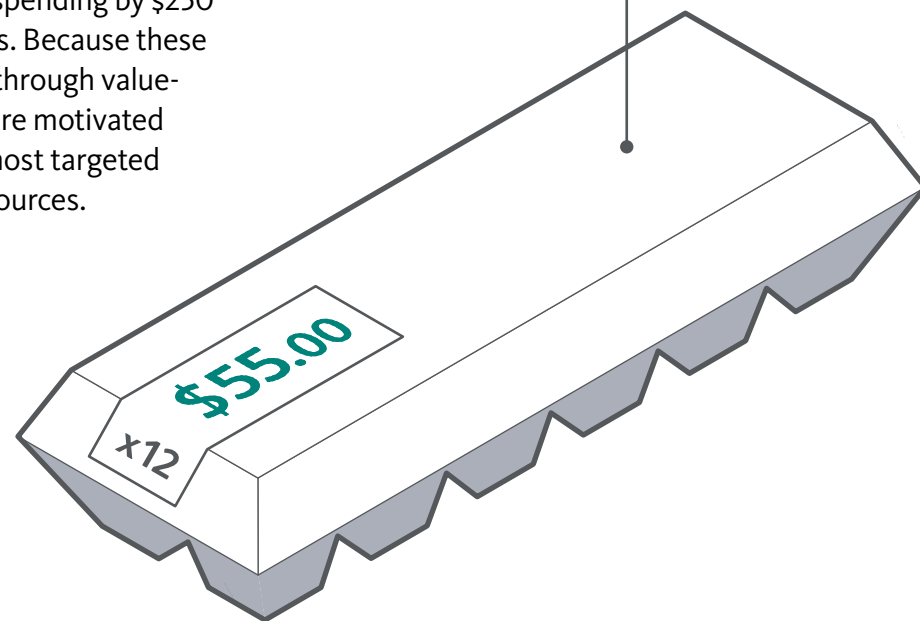
The population's living longer

By 2050, projections show that the 65 and over age group will double in size over 2012.² Government data indicates that 30 percent of Medicare spending occurs in the last six months of life so this large aging population will be expensive to support.³

Costs are rising

If grocery costs had risen at the same rate as healthcare over the last 70 years, we'd now be paying \$55 for a dozen eggs. To control costs, CMS plans to reduce spending by \$250 billion over the next six years. Because these reductions will be achieved through value-based programs, providers are motivated more than ever to find the most targeted and efficient use of their resources.

A dozen eggs would cost \$55 if inflation had kept pace with Healthcare costs



2. Demand is higher for better performance

Everyone – payers, providers, even patients – are focusing on doing more with fewer resources. Right now, the policies, incentives and penalties are moving into place to align every element of the U.S. healthcare ecosystem around the Institute for Healthcare Improvement's (IHI) "Triple Aim:"

- Reducing the per capita cost of healthcare
- Improving population health
- Improving the patient experience

For many organizations, this means finding any opportunity to measure, monitor, and demonstrate improved outcomes at an affordable cost.

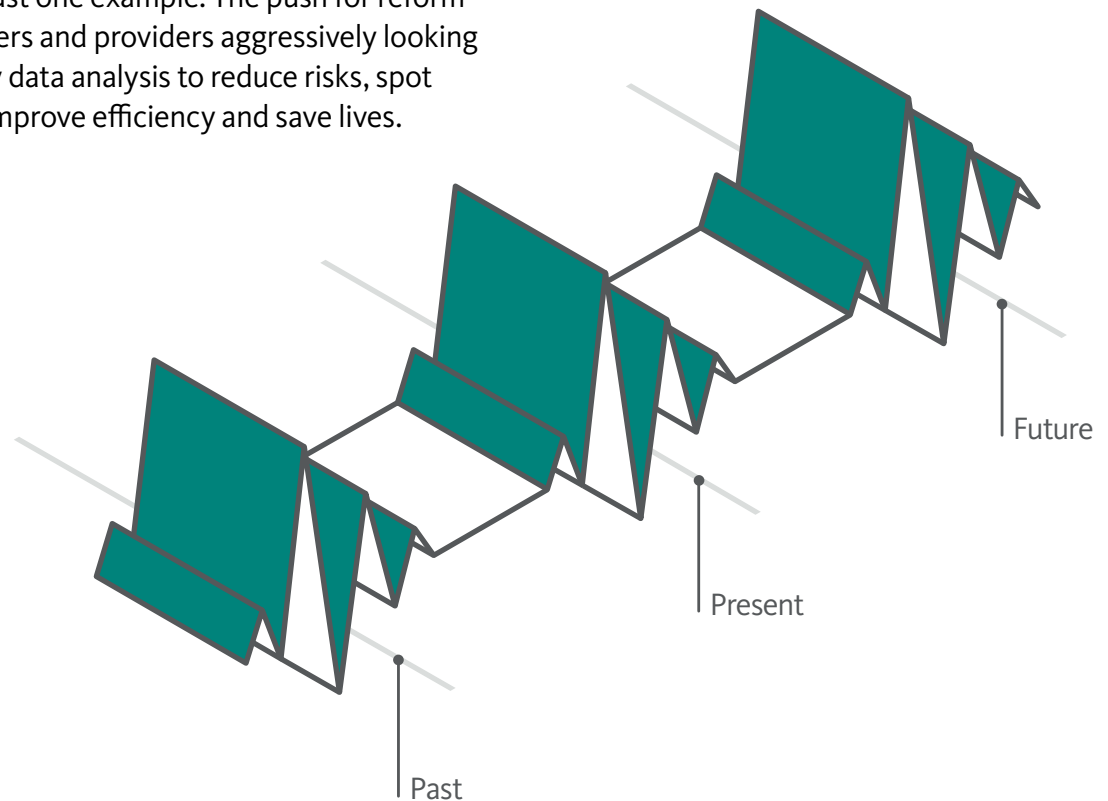


3. Improved performance calls for predictive and prescriptive insights

Today's most exciting opportunities in analytics go beyond using data to understand past performance. They also use information to generate insight into what is likely to happen in the future – and even offer ways to introduce evidence-based actions to get the best outcome.

One area of impact, for example, is helping hospitals understand and predict avoidable 30-day readmissions. Analytics across various data sources can identify patients who are at risk of readmission and help hospitals create better discharge planning and post-discharge communications.

That's just one example. The push for reform has payers and providers aggressively looking to apply data analysis to reduce risks, spot fraud, improve efficiency and save lives.



4. More data is more accessible than ever

Predictive and prescriptive thinking relies on uncovering and understanding key patterns from the past and the trending information from the present, to drive the smartest behaviors now and in the future.

Fortunately, the modern healthcare industry captures data from across the continuum, including:

- Electronic health records
- Medicaid, Medicare, CHIP and immunization programs
- TANF, SNAP, WIC, LIHEAP and other state programs
- Laboratory test results
- Patient and provider surveys
- Medical and pharmacy insurance claims
- Social media and lifestyle data

Combining clinical data with other sources – like socio-demographics and claims data – creates a powerful opportunity to drive real-time predictive and prescriptive analytics.

In this way, healthcare organizations can identify and prioritize patients at risk and proactively manage care across the continuum.

Here are some examples of how healthcare organizations are using advanced analytics to drive improvements for the populations they serve.

Analytics in action

An overview of use cases



Identifying at-risk populations

The healthcare system is adopting population health management strategies that pinpoint at-risk populations and implement evidence-based programs that drive the right patient and provider behaviors.

Once an at-risk group is identified, partnerships with internal and external groups can work together to establish programs that improve care, realize new efficiencies and track and report results to stakeholders.

Analytics are helping providers harness data from clinical visits, healthcare claims, and community-level assessments, to understand community demographics, risk factors, and disease distribution – and design and deliver services accordingly.

Often this involves community-based disease management programs to improve patient involvement and deliver meaningful savings.



Triggering timely intervention

Timely interventions can improve clinical outcomes and prevent or minimize the need for costly critical care services.

For instance, pre-ICU arrival strategies, designed to detect patients with changing clinical conditions earlier are showing encouraging results.

A tertiary care center in Salisbury, Maryland applied analytics to produce automated alerts to providers. During a pilot program, code blues fell by two-thirds even while rapid response team calls grew by 76 percent.

The key was to redesign clinical workflow processes so that vital signs were entered into the EMR immediately after assessment so that the data was available to trigger alerts in a timely fashion.

Minimizing readmissions

Return hospital visits are costly to the provider, the payer and the patient.

Analytics offer the chance to crunch a variety of data – medical history, medication, services received, hospital billing, financial performance – and highlight those most likely to return to the hospital within the next 30 days.

Analytics can help.

Analytics provide insights that enable hospitals to:

- Automatically match patient needs to available services (e.g. home care, medical equipment, rehab facilities or nursing homes)

- Understand the impact of initiatives (e.g. patient screening, service coordination) and compare performance against national averages
- Understand which sets of patients are being readmitted (e.g. those who've had open heart surgery), and why – identifying areas for improvement, and informing discharge planning, and patient education and coaching services

Wyoming Medicaid has been using patient data to identify super-users of ED and inpatient services as well as potential gaps in care.

WYhealth's staff of local clinicians then works with patients and their physicians, putting care plans and preventive measures in place that help reduce the state's Medicaid costs while improving outcomes.



\$17 billion

The estimated annual cost of unnecessary readmissions for Medicare patients.

Identifying Hospital Acquired Conditions (HAC)

Leveraging machine-learning, analytics can identify emerging complications and alert clinicians to prevent serious harm to patients, excessive costs and long-term healthcare needs.

While the relevant data types vary by condition, they typically include vital signs, laboratory test results, presence of devices such as central lines, urinary catheters or ventilators, oxygen saturation, diagnostic tests and others.

The focus on data has made a dramatic impact in contributing to a reduction in hospital acquired infections, which not only results in better delivery of care but also improved financial performance.

CMS penalizes hospitals, based on measures of adverse events occurring during hospital stays, such as pressure ulcers, pulmonary embolisms and certain types of healthcare-associated conditions. Major causes for HACs have steadily declined since 2008.



Reducing duplication and waste

By some estimates, waste, fraud and abuse cost the health system more than \$60 billion annually. As healthcare budgets grow, the forms of healthcare waste change – and older, rules-based detection methods struggle to keep up.

Analytics offer new tools for increasing the accuracy of reimbursement decisions in Medicaid to preserve precious resources.

Billing for unnecessary procedures, identity theft and overpayment are priority sources – an opportunity that extends beyond Medicaid to every area of the health care system.

Analytics are proving a powerful tool for revealing effort duplication and resource waste.

“With our agencies’ systems connected, our program managers can access comprehensive member histories whenever they are needed. It’s all about helping us provide better care and conserve our resources.”
– **Teri Green**, State Medicaid Agent, Wyoming Department of Health

Engaging and educating patients

The need to connect with providers, patients and plan members has never been greater. To do that at scale, personal, relevant and timely interactions depend on data and analytics. The ability to access and process information is crucial to creating a consumer-centric, quality-based healthcare ecosystem.

Today, robust and diverse data fuels decision-making engines that shape interactions across the health care industry.

Associated tools like comparison shopping educate and empower consumers to be smart purchasers of healthcare services. Analytics assist patients in finding the right care at the right place and the right price for their very specific situations, offering appropriate options for medication and other high-cost care items.



Personalizing services

Analytics are increasing the ability of healthcare payers, providers and others in the industry to personalize care and communicate better.

Disease is complex and treating it requires coordinated solutions. For example, consider an 86-year old woman who is diabetic and takes multiple medications to keep her blood sugar in check and cholesterol normalized. The woman wears an electronic monitoring device primarily to sound an alarm if she falls.

Advanced analytics added to a smart device can help this woman and her caregivers monitor adherence to prescriptions and other important variables such as the timing and severity of glucose levels and any periods of limited physical activity. The various streams of data provide instant feedback – a real-time view into the patient’s condition, giving doctors new ways to improve treatments.



Boosting customer services

Analytics are helping Managed Care Organizations provide more timely communications and payment, and handle complaints and appeals more effectively.

Modern healthcare contact centers are increasingly data-driven and data-generating . New technologies driven by automation, analytics and artificial intelligence help streamline the customer care and patient support programs.

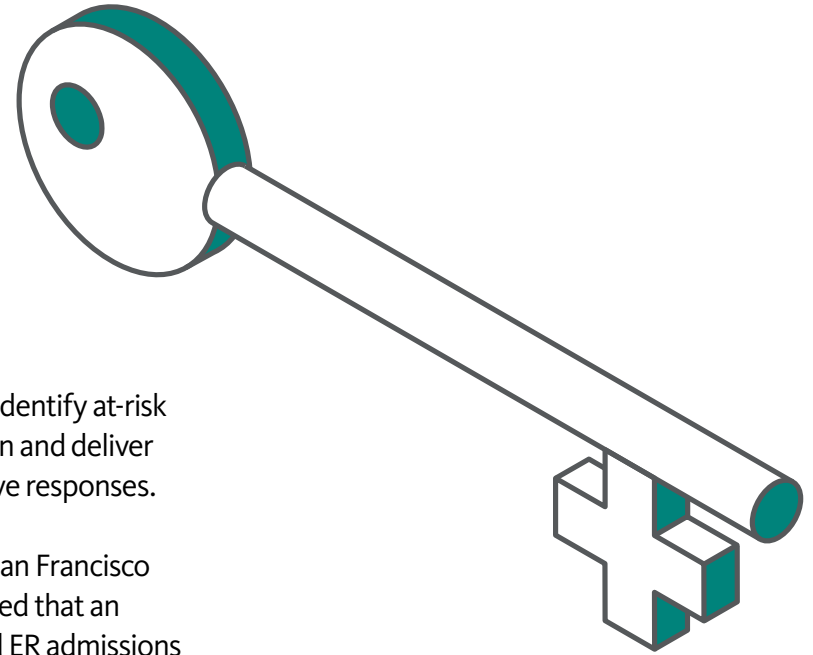
The goal is similar to the wider analytics initiatives: improve service to patients while controlling costs.

Ensuring access to care

Your health plan can't deliver if there are no providers nearby. Analytics are proving invaluable in ensuring access to care, answering questions like: how many providers are located in the residential area? How many are within driving distance of this address? Where should new outpatient centers and community clinics be best located?

Analytics help healthcare systems identify at-risk populations by geography, to design and deliver the most effective and cost-effective responses.

Geographic data analyzed by The San Francisco Department of Public Health showed that an alarming number of alcohol-related ER admissions came from a single neighborhood. They worked with a nonprofit organization, Community Awareness and Treatment Services, to launch The San Francisco Sobering Center, a 24x7, nurse-managed program that offers specialist, targeted care to those with active addiction. The result: better treatment plans and fewer ER admissions for this population.

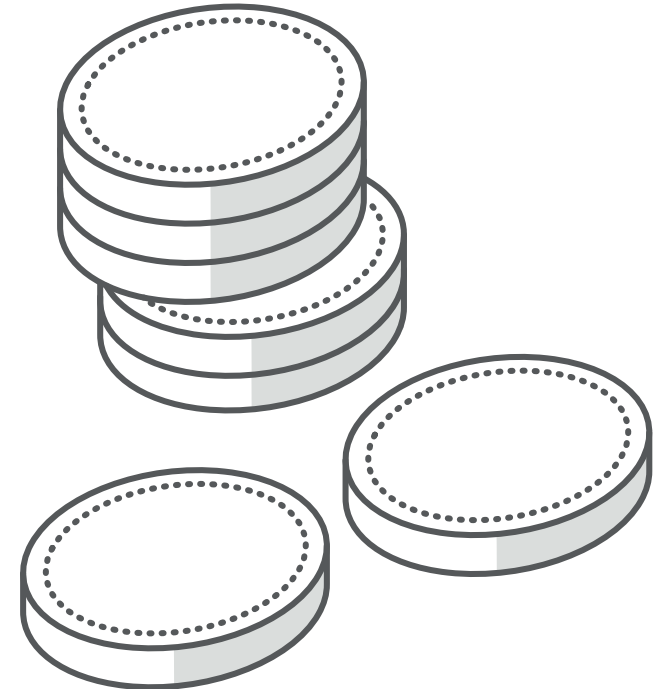


Enabling value-based payments

In the move to performance-based healthcare, it's increasingly common to pay one sum for a period of care, rather than separate payments for individual services.

Analytics can help MCOs understand where that sum is being spent, and how best to divide it to deliver the best overall experience for the patient, within that budget.

Analytics are an essential part of any performance-based care system, helping identify need, prioritize investments, design interventions and measure results.



Four principles of data analytics for healthcare providers

We've helped organizations from all across the healthcare spectrum – payers, providers, pharma and governments – harness the power of data.

Here are a few basic principles we've learned:

Actively manage your data.

Treat it like the strategic asset that it is.

Be agile – don't hard code your data integration.

The metrics you think are driving outcomes today may not turn out to be the best ones to track.

You'll want to be able to spin up data marts to fit specific purposes, and give the right answers as the questions change.

Segment your populations.

Use data to identify pockets of cohorts
– and tailor treatment strategies.

Bring in the experts.

A good partner will help you fill the data skills gap:

- Identifying the most important data points
- Streamlining the collection, analysis, reporting
- Helping with service planning and budgeting

Make your data talk.

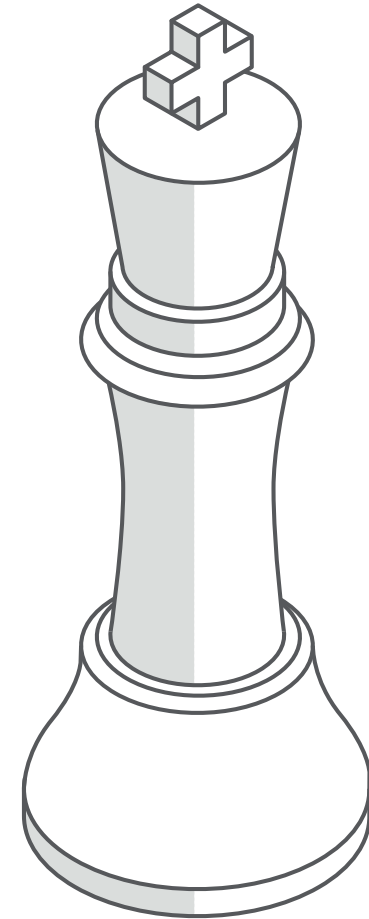
Make sure that your data is sliced, diced and presented in a way that is easily digestible for physicians, plan members, whoever needs it to help their organization, your organization, or themselves. Market it to them. Your interfaces and visualizations should be intuitive, and even fun.

What's next for healthcare analytics? You decide.

Data analytics have just begun to transform healthcare. And already, the number of game-changing – and life-changing – applications is dizzying.

But here's the really exciting part: if you're reading this, the next move's up to you. You probably have some inspired ideas for applying analytics in your working life. So do it. Be one of the people who harnesses data and beats inefficiency – or cuts HAIs in half, or does something equally important, that no one's even thought of yet.

And if you need help, just ask. We love this stuff. And we've got the skills to help you take healthcare wherever you think it needs to go.



Sources

1. <http://www.gallup.com/poll/182348/uninsured-rate-dips-first-quarter.aspx>
2. <https://www.census.gov/prod/2014pubs/p25-1140.pdf>
3. <http://www.medicarenewsgroup.com/context/understanding-medicare-blog/understanding-medicare-blog/2013/06/03/end-of-life-care-constitutes-third-rail-of-u.s.-health-care-policy-debate>

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We manage interactions with patients and the insured for a significant portion of the U.S. healthcare industry. We're the customer interface for large segments of the technology industry. And, we're the operational and processing partner of choice for public transportation systems around the world.

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