

How the patient journey creates and shapes health care data

Each point in a patient journey is a unique interaction between the individual seeking or receiving care and the industry stakeholder who is providing care, services, or information. Each of those interactions generates a specific kind of data—and each subsequent interaction is shaped by the data that was created before it.

Different stakeholders find value in different types of data, and they prioritize collection and analysis accordingly. This illustrative patient journey highlights how data is created and how it shapes each step of the patient journey.



1 Patient is enrolled in an ACO as part of their new employer-sponsored health plan.

As part of enrollment, the patient provides a detailed breakdown of their demographic information, contributing to a **data set on social determinants of health** that the ACO is collecting.

Data on social determinants of health offers insight into the social, economic, environmental, and demographic characteristics that can impact patients' health, care needs, and clinical outcomes.

EXAMPLE USE CASES:

- **Provider organizations:** Determine and prioritize opportunities to reduce health and care disparities. Gain a more holistic understanding of the risk factors that could impact patients' needs and outcomes.
- **Health plans:** Gain a more holistic understanding of the risk factors that could impact patients' needs and outcomes.
- **Life sciences:** Understand the health disparities that can be addressed through new drug and device development.



Consumer data

As part of its risk-stratification efforts, the ACO analyzes **consumer data** to better understand patients' likely future need for health care services.

Consumer data is a range of non-clinical information about patients' needs and habits. It includes a wide range of data types, including demographic information, credit scores, spending patterns, search history, social media posts, and more. The careless collection and use of this data can be controversial.

EXAMPLE USE CASES:

- **Digital health:** Support business development by tailoring marketing efforts to high-need patient populations.
- **Provider organizations:** Adapt marketing strategies to better target and serve high-need patients. Create a more nuanced approach to risk-stratification efforts.
- **Health plans:** Produce a holistic understanding of the risk factors that could impact patients' needs and outcomes.

2 Patient goes to a visit with their provider.

The ACO conducts a clinical health assessment, collecting data on the patient's conditions and health status in the **electronic health record**. The patient is diagnosed with diabetes and clinical depression.

Electronic health records serve as the central location where providers collect clinical data on their patients. This data informs clinical care decisions for providers managing a patient and also informs how the provider should bill the patient's health plan.

EXAMPLE USE CASES:

- **Life sciences:** Inform strategies for selecting clinical trial sites and recruiting patients. Understand patients' clinical needs to shape research and development efforts. Guide value narratives for existing products.
- **Provider organizations:** Develop clinical pathways and triage protocols. Drive reporting on quality and cost outcomes.



3 Patient fills prescription for clinical depression drug at their local pharmacy.

The pharmacy dispenses the prescription ordered by the patient's doctor, generating a **pharmacy claim**.

Pharmacy claims are billing information generated by pharmacies and submitted to payers to receive reimbursement for filled patient prescriptions. Pharmacy claims are processed by pharmacy benefit managers.

EXAMPLE USE CASES:

- **Pharmacies:** Bill pharmacy benefit managers and insurers for filled prescriptions. Support the filling and management of prescriptions, including prevention of drug-to-drug interactions and improved medication adherence.
- **Pharmacy benefit managers:** Drive performance evaluation of network pharmacies and understanding of drug spending patterns.
- **Life sciences:** Locate eligible patients for clinical trial enrollment.



4 Patient begins using a remote monitoring device that allows the care team to monitor their diabetes in real time.

The device regularly transmits **remote patient monitoring data** to the care team.

Remote patient monitoring data is clinical information on several health metrics (such as blood pressure and blood oxygen) that is captured either automatically via a wearable device or by the patient directly. Remote patient monitoring data is favorable in that it offers clinicians longitudinal and real-time visibility into their patients' health without requiring clinician labor for data capture.

EXAMPLE USE CASES:

- **Providers:** Inform clinical care decisions by longitudinally monitoring patients' conditions for both chronic care management and acute care.
- **Medical technology and digital health companies:** Develop and improve digital health products by better understanding clinical needs and product deficiencies.
- **Payers:** Improve understanding of member health needs to inform risk stratification and resource allocation.



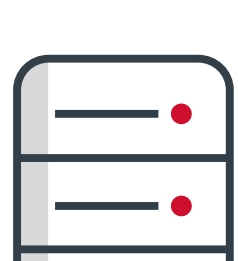
5 Patient's monitoring device transmits a red flag to the provider, who recommends the patient visit the ED.

The patient stays at the hospital for three days and receives a procedure. Their health plan is billed a **medical claim** for the services performed.

Medical claims are billing information generated by providers and submitted to payers after the performance of reimbursable medical care. Claims are aggregated into medical claims data sets and include highly structured summary information of the services provided during a care episode and the price the hospital is charging the payer.

EXAMPLE USE CASES:

- **Health plans:** Understand patients' diagnoses to inform risk-stratification efforts.
- **Provider organizations:** Support business development by illuminating market-level growth and investment opportunities.
- **Life sciences:** Support strategies for selecting clinical trial sites and recruiting patients. Understand patients' clinical needs to inform research and development efforts. Help craft value narratives for preexisting products.



Synthetic data

Synthetic data was used to develop and test a staffing algorithm that helped the patient's nursing staff best allocate their limited resources across patients on the floor.

Synthetic data is drawn from realistic, but not real, health records for fake patients. This data can be used in place of actual health records. It is an emerging tool that, at its best, is capable of expanding access to large, representative patient data without risk of compromising patients' privacy.

EXAMPLE USE CASES:

- **Technology vendors and provider organizations:** Test software systems, artificial intelligence, and machine learning algorithms.
- **Life sciences:** Improve clinical research protocols and site selection strategies.

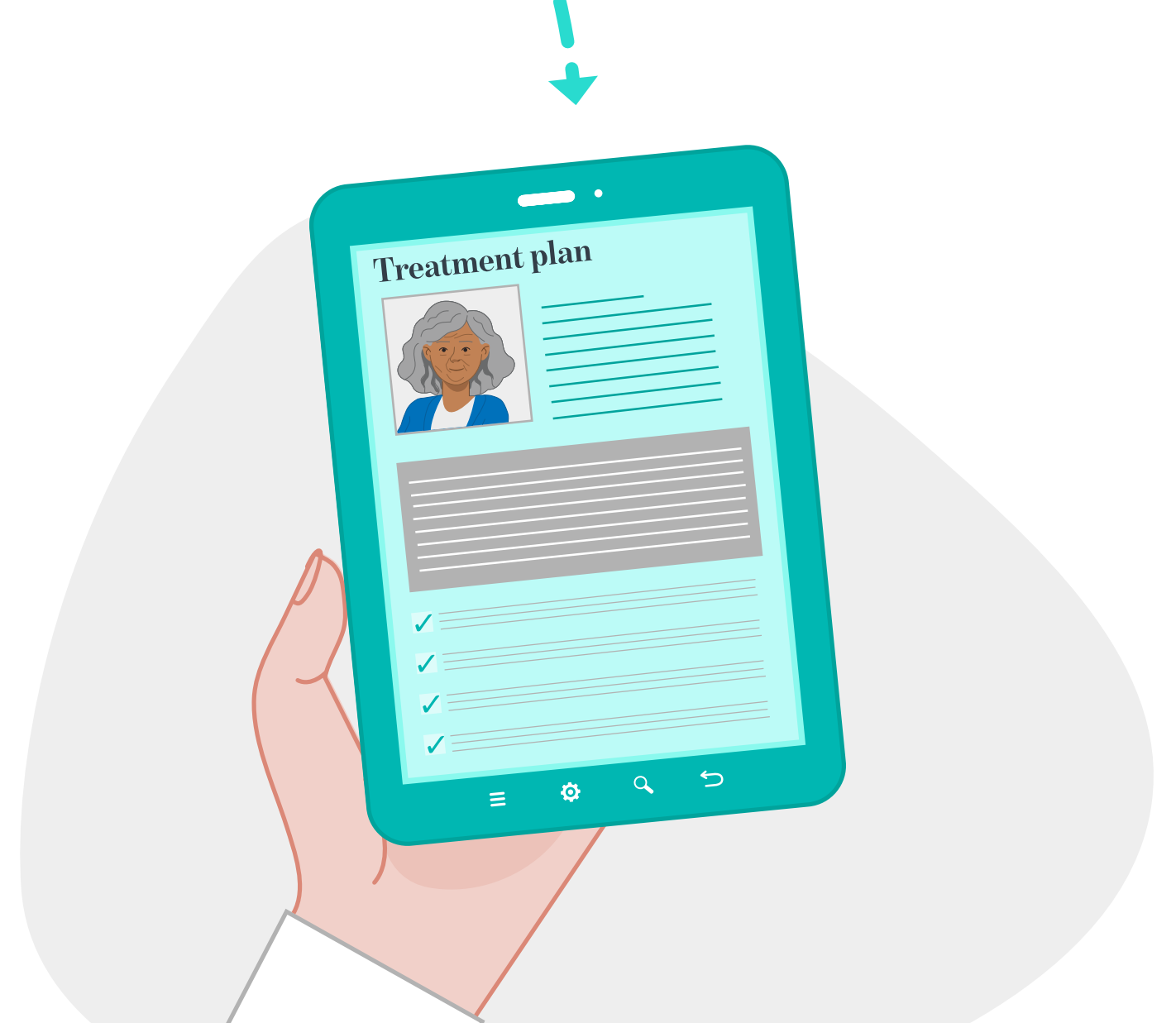
6 Care team updates the patient's diabetes treatment plan and enrolls them in a clinical trial for an experimental diabetes therapy.

The patient begins a six-month course on a new medication and receives biweekly workups with the care team to collect **outcomes and side effects data** for the clinical trial.

Clinical trials data is collected by life sciences organizations and their clinical partners to determine the safety and efficacy of experimental drugs and medical devices. It serves as the centerpiece of applications for regulatory approval by the Food and Drug Administration.

EXAMPLE USE CASES:

- **Provider organizations:** Analyze clinical safety and efficacy to inform formulary coverage and prescribing decisions.
- **Health plans:** Analyze clinical safety and efficacy to inform formulary coverage and pricing negotiation strategy.



For more information on the patient journey, visit: advisory.com/DigitalHealth

