Consumer analytics in healthcare: delivering data-driven patient experiences and outcomes

White paper

CitiusTech

Abstract

In recent years, there has been a growing emphasis among patients on self-care and proactive family health management. Patients now demand a personalized and differentiated healthcare experience, encompassing every aspect of their medical journey, from registration and care management to billing and discharge. Being well-informed about medical conditions, treatment options, and associated risks, they are no longer willing to settle for subpar care and readily switch to better healthcare providers that meet their expectations.

To address this evolving landscape, healthcare providers must embrace industry-responsive strategies and realign their systems and services to meet patient needs. Key to this transformation is a comprehensive understanding of patient preferences and current challenges. This whitepaper explores how providers can acquire deeper insights into patient behavior and preferences, and accordingly scale these efforts through multiple approaches. Additionally, it highlights the tangible benefits that a patient-centric care paradigm can unlock for patients and providers.

Introduction

Following the COVID-19 pandemic, a notable shift has occurred in people's attitudes toward their health and wellbeing, prompting them to adopt a more proactive and preventive approach. Consequently, there has been an unprecedented surge in the number of individuals seeking healthcare services, posing significant challenges for healthcare providers to meet the rising demand. This surge can be largely attributed to the active engagement of generation Z and millennials, who are now making well-informed choices regarding their health and the wellbeing of their families. Patients are increasingly demanding personalized experiences at every stage of their healthcare journey and changing providers when their expectations are not met. A patient experience survey from 2021, revealed that 30% of patients switched providers due to a lack of differentiated consumer experience.

Recent industry research has identified several reasons driving patients to change healthcare providers. These include poor experiences with administrative teams, front desk staff, physicians and care teams, dissatisfaction with digital health solutions and negative patient reviews. In addition, long waiting times to secure appointments and in waiting room queues at clinics, and difficulties in commuting to the doctor's office contribute to patients' decisions about changing healthcare providers. When patients are challenged at any stage of their healthcare journey, they tend to defer their care, which negatively affects their overall health.

Healthcare providers today need to understand patient pain points and incorporate consumer-centric strategies that address such challenges, enabling them to deliver better healthcare services, increase access to care and foster greater trust in care teams. This would ultimately drive better patient outcomes, greater patient satisfaction, and improved patient retention.

Understanding patient challenges with consumer analytics

To enhance patient experience and better cater to individual preferences, healthcare providers must gain a deeper understanding of their patients. To achieve this, providers must implement consumer analytics – the practice of collecting, analyzing, and interpreting data related to consumer behavior, preferences, and interactions across the healthcare continuum.

By analyzing data from various sources, such as health records, patient feedback, consumer experience surveys, and social media interactions, providers can understand how patients make decisions regarding their healthcare and interactions with providers. Moreover, consumer analytics empowers the development of finely-tuned marketing and communication strategies, enabling providers to target specific audiences effectively.

There are various sources that providers can draw data from for analysis. Let us briefly discuss them below:

Electronic health or medical records (EHRs / EMRs)	Digital versions of a patient's medical records that provide a comprehensive view of a patient's health information and entire medical history. These records include various sub-data sets such as: • Past diagnoses and treatments • Immunization details and dates • Current treatment plans and medications • Radiology images • Laboratory and test results
Healthcare insurance claims data	Information related to the medical services provided to the patients, the associated costs, and the reimbursement process between providers and insurance businesses.
Patient survey data	Data collected from patient surveys or questionnaires to capture patient perspectives based on their opinions, feedback, and experiences related to healthcare services, treatments, and overall care.
Clinical trials data	Information gained from research studies in humans to assess the safety and efficacy of medical interventions like drugs, vaccines, devices, and therapies.
Administrative data	Data collected and maintained by healthcare organizations during delivery and billing for healthcare services. This data provides a comprehensive view of services and costs, and population health status.

How consumer analytics delivers excellence for patients and providers

In modern-day healthcare, ensuring ease of access, convenience, and building trust have become indispensable elements in designing optimal consumer experiences. Embracing consumer analytics in healthcare not only drives outcomes for providers and patients but also transforms the patient-provider relationship, elevating the quality of care and experiences for all parties involved.

Providers	Patients
Attract and retain patvients: Providers can convert new visitors into patients and keep current patients engaged, turning them into advocates who promote their healthcare services	**Empowered patients:** Patients can gain more knowledge about their health, well-being, and treatment options, enabling them to make better self-health decisions.
Deliver value-based care: Providers can understand patient needs and preferences better, empowering them to deliver tailored care plans at lower costs.	**Lower insurance premiums:** Informed patients can negotiate with insurance companies for better premiums and tailor their plans to meet their specific healthcare needs.
Competitive advantage: Providers can identify improvement areas and optimize costs and quality of care.	**Integrated healthcare experiences:** Integrating healthcare services creates a seamless and efficient patient experience across healthcare providers and facilities.

Consumer analytics framework – key principles

In healthcare, a consumer analytics framework is a set of guidelines for healthcare organizations to collect and analyze data about patient experiences across their healthcare journey. This framework aims to enhance the overall patient experience, optimize healthcare processes, and adapt to changing patient expectations by identifying areas for improvement.

Let us briefly break down the key principles:

1. Complete consumer-patient journeys

The first principle aims to identify areas for improvement in patient journey by mapping the entire journey from the initial research phase to post-visit follow-up. This journey includes various touchpoints across the healthcare enterprise, both physical and digital, and involves interactions with partners and third-party stakeholders. The key touchpoints in the patient journey are as follows:

- **Research and information gathering**
  In the first phase, patients seek information about their health concerns, potential treatments, and healthcare providers. They may search online, consult friends and family, or seek recommendations from primary care physicians.

- **Registration and booking**
  Once patients decide on a healthcare provider, they set out to book appointments or register for services, which can be done online, over the phone, or in person at a healthcare facility.

- **Prior to the visit**
  Prior to an appointment, there may be communication between the healthcare provider and the patient, including appointment reminders, information about the visit, and pre-visit preparation instructions.

- **In-person visit**
  This is a crucial touchpoint where the patient interacts with healthcare providers, undergoes diagnosis, lab work, or receives treatment.

- **Post-visit care**
  After the visit, there may be follow-up appointments, communication about test results, or prescription refills.

2. Closed loop model

The second principle emphasizes the importance of collecting continuous patient feedback about their experiences with healthcare providers, facilities, and services. This feedback can be collected through various channels, including surveys, focus groups, social media, and online reviews. By collecting and analyzing feedback, providers can identify areas for improvement, enhance communication between providers and patients, streamline processes, and address staff training needs. The feedback also helps providers understand evolving patient expectations and adapt to changes in the healthcare landscape in near real time.
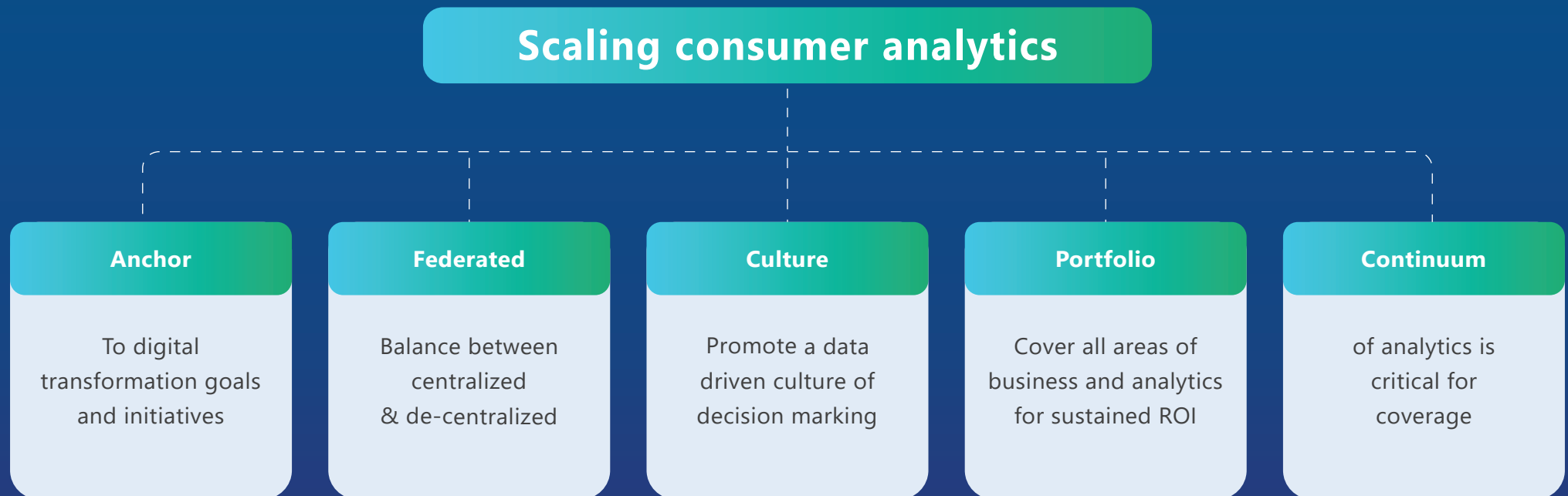

3. Benchmark and connect the dots

The third principle involves comparing a healthcare organization's performance against internal and external benchmarks. By analyzing the measurements against relevant benchmarks, providers can better understand patient needs, preferences, and behaviors. This understanding enables them to develop targeted strategies to improve patient engagement and satisfaction.

Overall, the consumer analytics framework focuses on understanding the patient journey, continuously gathering and utilizing patient feedback, and benchmarking performance to improve the quality of care and enhance the overall patient experience in healthcare settings.

Five strategies for scaling consumer analytics in healthcare

At CitiusTech, we command a deep understanding of the intricacies of healthcare systems. Leveraging this vast experience and coupling it with analytical-based strategies, we have formulated five highly effective approaches for healthcare providers to scale their consumer analytics initiatives. Let us discuss each of them below:

Scaling consumer analytics

Anchor	Federated	Culture	Portfolio	Continuum
To digital transformation goals and initiatives	Balance between centralized & de-centralized	Promote a data driven culture of decision marking	Cover all areas of business and analytics for sustained ROI	of analytics is critical for coverage

1. Anchor-based approach

Anchor-Based approaches are methods used to interpret patient-reported outcome changes by linking them to other clinical changes or results. This involves connecting or "anchoring" changes in patient-reported outcomes (PROs) to other clinical changes or results. By implementing this approach, clinicians and caregivers can interpret the changes with the proper context. This enables providers to gain a holistic understanding of a patient's experience and provides valuable insights into the effectiveness of treatments, interventions, or care plans from the patient's perspective.

2. Continuum of analytics

In healthcare, it is imperative that patients receive a seamless range of health services, addressing various aspects of their health needs as they evolve throughout their health journey. This can be achieved with a 'Continuum of Care' through which healthcare providers can deliver comprehensive health services to patients, for the specific care of the need, when they need it, regardless of their location or condition.

The continuum of analytics in healthcare is a framework that describes the five different levels of analysis that can be performed on healthcare data across a patient's healthcare journey to ensure. These are as below:

● **Descriptive analytics**

At the foundational level, descriptive analytics involves the examination of historical data to understand what has happened in the past. Providers can use descriptive analytics to gain insights into patient demographics, patient volumes, resource utilization, and other key performance indicators.

● **Diagnostic analytics**

Diagnostic analytics goes a step further and aims to identify the root causes or reasons behind the events observed in the descriptive analytics phase. With this analysis, providers can investigate factors contributing to patient readmissions, identify risk factors for certain conditions, or assess the effectiveness of treatments.
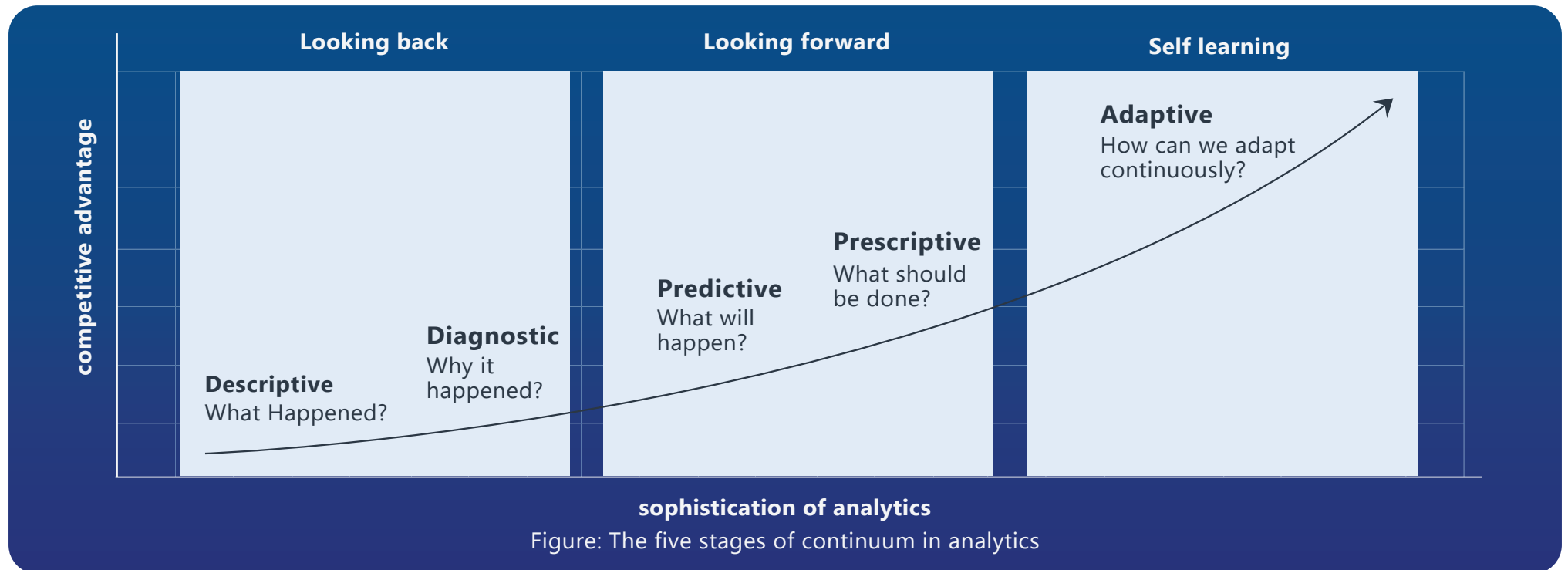
- **Predictive analytics**

  Moving a step further, predictive analytics uses historical data and patterns to forecast or predict future events or outcomes. This enables providers to analyze patient data and historical treatment outcomes to predict the likelihood of certain diseases, patient readmissions, treatment success and even identify high-risk patients.

- **Prescriptive analytics**

  Prescriptive analytics goes beyond predicting future events and recommends possible courses of action to achieve desired healthcare outcomes. It goes beyond just forecasting and empowers healthcare providers to make informed healthcare decisions based on predictions and simulations.

- **Adaptive analytics**

  The highest level of the continuum, adaptive analytics helps with the understanding of a patient's cultural values and beliefs in healthcare practices. By leveraging adaptive analytics, healthcare providers foster awareness and sensitivity towards patients' unique needs, creating a comfortable environment to minimize misunderstandings and maximize patient satisfaction.

Figure: The five stages of continuum in analytics

Overall, the continuum of analytics in healthcare progresses from describing past events, diagnosing their causes, predicting future outcomes, suggesting actions to optimize those outcomes, and finally, fostering adaptability in patient care based on individual needs and cultural factors. Each stage builds upon the previous one, enabling healthcare providers to make data-driven decisions and provide personalized, patient-centric care.

3. Portfolio approach

The Portfolio approach refers to a management technique used to make decisions on the allocation of resources, such as funds and time, to different programs aimed at improving consumer experiences and outcomes in the healthcare industry. This approach can help healthcare providers evaluate various programs and initiatives based on their financial performance and relevance to organizational goals.
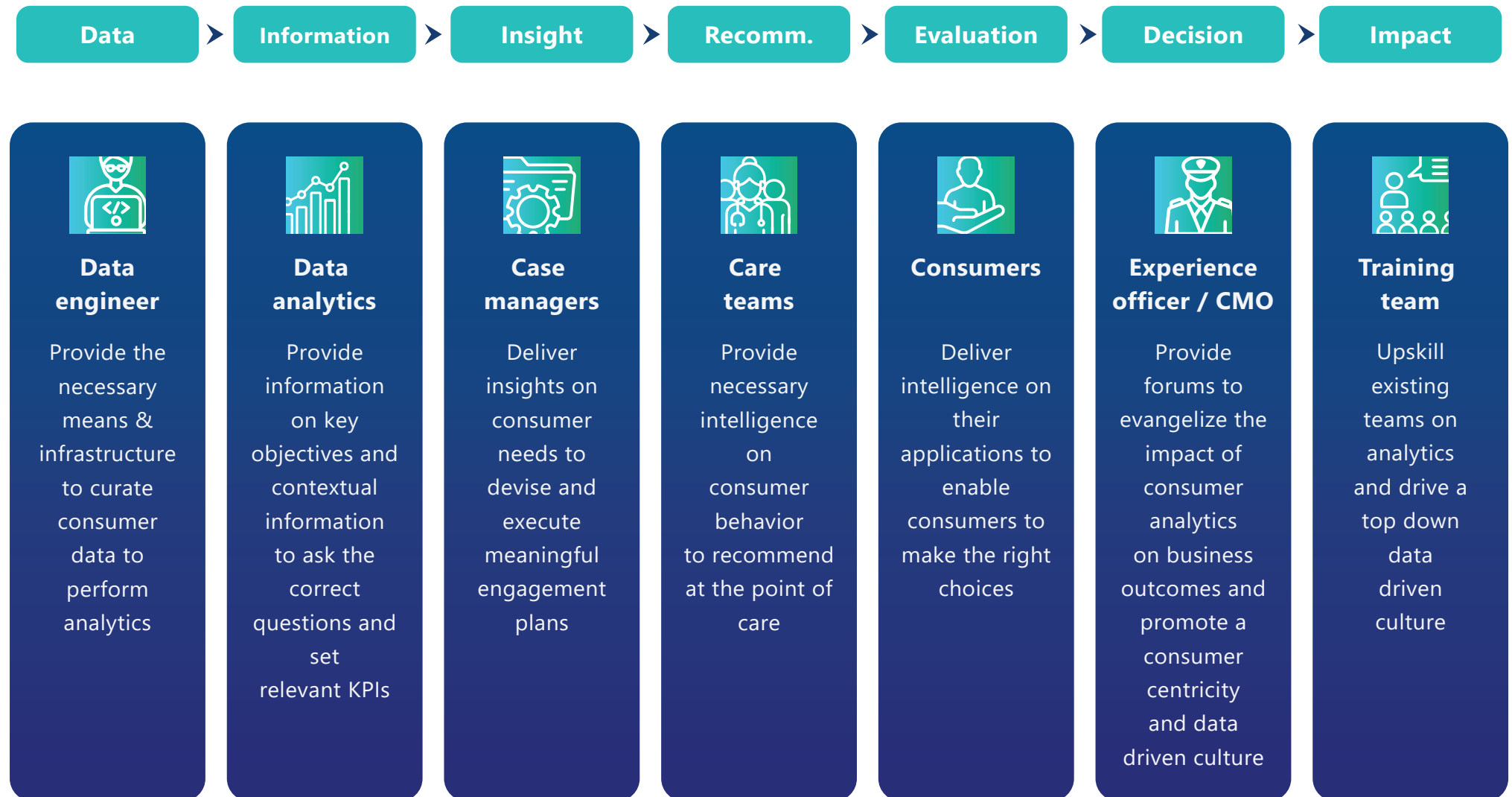
The portfolio approach typically involves three types of programs -

- **Long-term programs:**
  Designed to provide insights into consumer behavior over the long term. This involves collecting and analyzing large amounts of data, and may require the use of sophisticated analytics techniques.

- **Proof-of-concept programs:**
  Designed to test new ideas about consumer behavior. These programs are generally shorter and less expensive than long-term programs but can provide valuable insights into the potential of new approaches.

- **Inquisitive analytics:**
  Designed to explore new areas of consumer behavior that still need to be better understood. These programs generally involve asking open-ended questions of consumers, or they may include the usage of data mining techniques to identify patterns in consumer behavior.

4. Federated model

This approach seeks to strike a balance between two contrasting approaches: decentralized and centralized models. The main objective of this approach is to bring intelligence or data analytics capabilities closer to not just consumers but also to large healthcare organizations that may consist of multiple departments and business units.

Data > **Information** > **Insight** > **Recomm.** > **Evaluation** > **Decision** > **Impact**

Data engineer	Data analytics	Case managers	Care teams	Consumers	Experience officer / CMO	Training team
Provide the necessary means & infrastructure to curate consumer data to perform analytics	Provide information on key objectives and contextual information to ask the correct questions and set relevant KPIs	Deliver insights on consumer needs to devise and execute meaningful engagement plans	Provide necessary intelligence on consumer behavior to recommend at the point of care	Deliver intelligence on their applications to enable consumers to make the right choices	Provide forums to evangelize the impact of consumer analytics on business outcomes and promote a consumer centricity and data driven culture	Upskill existing teams on analytics and drive a top down data driven culture

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5. Culture alignment

Culture alignment aims to foster a patient-centric environment, where the focus is not just on medical outcomes but also on creating positive and engaging experiences for patients throughout their healthcare journey. By leveraging consumer data and experience design, healthcare providers can enhance patient satisfaction, loyalty, and ultimately, the overall quality of care provided.

Culture preference	Strategic intention	Customer motivation
Participation	Community	**Attention**
	Customization	
Ability	Preeminence	**Competency**
	Low Price	
Authenticity	Physical Wellbeing	**Caring**
	Personal Actualization	

Driving tangible benefits in healthcare

Let us briefly discuss the major benefits that consumer analytics delivers in healthcare:

- **Deeper patient understanding**

  By amalgamating various data types, such as lifestyle, medical history, and hospitalization records, healthcare providers can enhance their ability to identify correlations between different data points to understand patients and their specific health needs better.

- **Reduced patient readmission rates and hospitalization costs**

  Analyzing patient visits and treatment data enables medical providers to effectively design follow-ups and post-discharge care. This proactive approach can help lower readmission rates and reduce the overall costs of in-patient treatment.

- **Consistent care delivery and enhanced consumer satisfaction**

  With a comprehensive overview of each patient's interactions with their services and offerings, healthcare providers can make data-driven improvements to their services across a patient's healthcare journey. This enables them to deliver a seamless and consistent experience, further improving patient satisfaction.

- **Optimized resource allocation**

  Tracking the adoption rate of digital solutions allows healthcare providers to allocate development funds more effectively, ensuring investments are directed towards services that benefit patients and care providers the most.

- **Streamlined care coordination**

  Data gaps can exist when various clinical departments, IT teams, and systems operate in isolation. Centralizing data collection and management facilitates seamless communication and information flow within healthcare organizations, leading to better care coordination.

Consumer analytics is already driving improved healthcare outcomes today. Let us briefly glance at a few instances below:

Identifying high-risk patients

Challenge	Outcome
Mayo Clinic, a leading provider in the US, wanted to reduce the instances of heart disease and strokes.	With data analytics, they are now able to identify patients with a high risk of heart disease and strokes early and deliver preventive care.

Reduction of post-surgery complications

Challenge	Outcome
Cleveland Clinic, a large US healthcare provider, was looking to reduce the instances of post-surgery complications.	By leveraging data analytics, they are now able to predict which patients are likely to experience post-surgery complications and take preventive steps.

Improved outcomes for cancer patients

Challenge	Outcome
The University of Pennsylvania sought to design better treatment plans for cancer patients.	Data analytics helped them gain insights from data such as patient risk factors, genetic profiles, and lifestyle, enabling them to deliver personalized treatment plans for cancer patients.

Conclusion

In the present healthcare landscape, healthcare providers must move beyond patient engagement and focus on giving them better experiences to ensure strong clinical outcomes. Adapting to the dynamic expectations of patients throughout their healthcare journeys necessitates an agile approach, enabling providers to continually evolve and deliver services that meet patient needs and preferences. To accomplish this, a profound understanding of patient preferences becomes crucial.

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