

Health Equity

Addressing Implicit Bias &
Data Limitations In
Historically Marginalized
Communities



What is Implicit Bias?

Implicit bias is a form of bias that occurs automatically and unintentionally, that nevertheless affects judgments, decisions, and behaviors.

Source: National Institutes of Health

- <https://diversity.nih.gov/sociocultural-factors/implicit-bias>



Image Credit: pwperspective.com

Implicit Bias Shapes Provider–Patient Interaction

Bias in real-world medical settings

- Specific factors influence a patient's perception of the care they are being given
- Physicians high in implicit bias and patients high in mistrust of the medical system make a poor combination and lead to discrimination
- Implicit bias is not easy to capture or fix; it is important to acknowledge this
- Healthcare organizations need to dive deeper into the implications of bias for patient treatment at both an individual and institutional level
- Leaders in healthcare IT and informatics need to be involved in these conversations and solutions at the highest levels

Existing Challenges in the Healthcare Industry

Poor Care Coordination



Globally, 33% of patients experience gaps in care coordination, which is associated with increased likelihood of being hospitalized or visiting the ER.

Lack of Patient Engagement



47% of clinicians and executives say low rates of patient engagement are their biggest challenge in improving patient outcomes.

Inability to Tailor Treatment Decisions



Only 29% of providers say that they can use genomics, environment, and lifestyle data to tailor treatment decisions.

Shift To Value Based Care



Globally, 47% of healthcare executives believe the adoption of value-based care will be the most transformative force in the healthcare industry over the next 5–10 years

Pressure to Improve Outcomes



57% of healthcare decisionmakers say providing better outcomes is a key driver for adopting new technologies and business models.

Difficulty Leveraging Data



30% of healthcare executives say their most pressing information technology problem is difficulty turning data into actionable insights.



Health Disparities Driven by Social Inequities



Economic Stability

A resident's employment status, income, ratio of expenses to debt, ability to pay medical bills, and broader support structure all contribute to health outcomes.



Neighborhood & Physical Environment

A resident's situation regarding their housing & transportation, availability of parks, playgrounds, and broader walkability are connected to their zip code.



Education

A resident's literacy and fluency of language, early childhood education, vocational training, and higher education status all play a role in their health outcomes.

* As reported on [Kaiser Family Foundation](#)



Food Availability



Whether a resident lives in a food desert or in a food island, the status of their food security and access to healthy options are direct contributors to health outcomes.

Community, Safety, & Social Context



A resident's social integration & support systems, levels of community engagement, ability to deal with exposure to / the stress of violence, trauma, and policing policy contribute to health outcomes.

Health Care System



A resident's health coverage, availability to providers & pharmacies, access to care that is linguistically & culturally appropriate, and that provides an adequate quality of care directly contributes to health outcomes.

Quadruple Aim of Healthcare

Improving the patient experience

Measuring standard questions from patient surveys and the set of measures based on key dimensions (e.g., US IOM Quality Chasm aims: Safe, Effective, Timely, Efficient, Equitable and Patient-centered) to better understand how providers and patients interact.

Improving population health

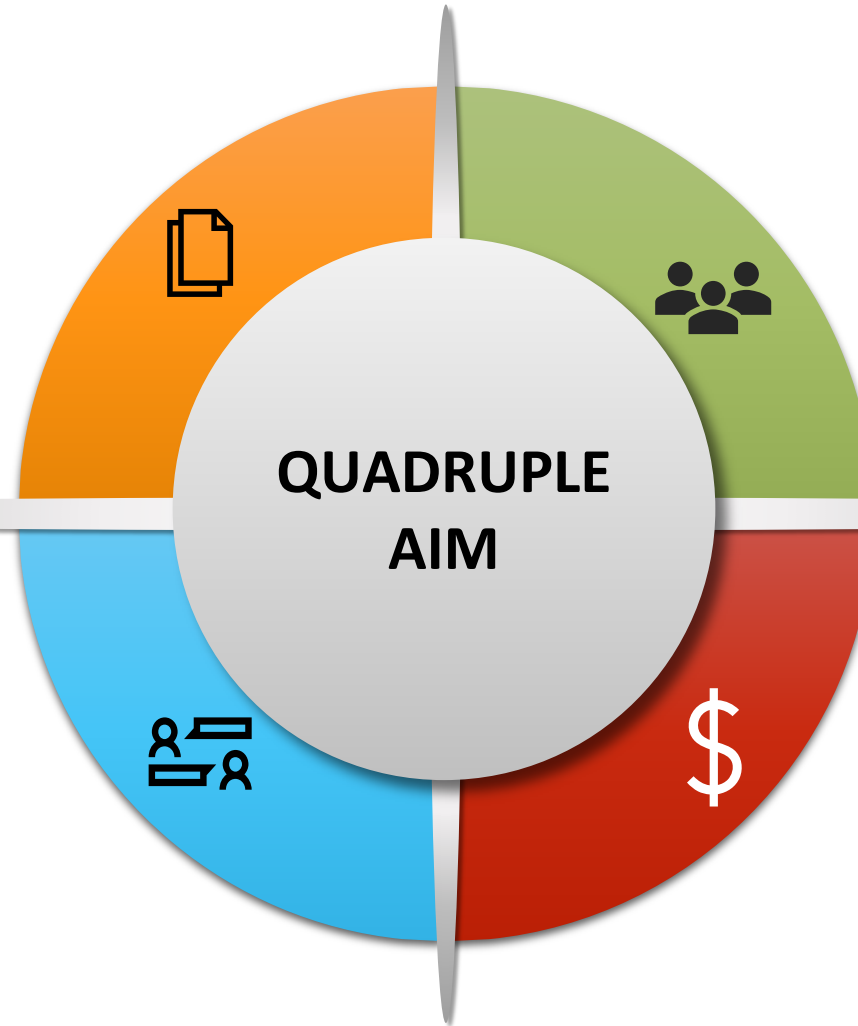
Measuring Health/Functional Status, Risk Status, Disease Burden, and Patient Mortality to better understand how to serve the broader population.

Measuring staff burnout and the correlation between high levels of staff engagement and high level of patient engagement to create enthusiastic and positive environments to provide the best outcomes for patients.

Improving care provider wellbeing

Measuring the total cost per member of the population, per month, as well as the Hospital and ED Utilization Rate to identify cost savings that can be passed on to patients.

Reducing cost of health care



Quadruple Aim of Health Equity

Normalizing the Patient Experience

Working to ensure that ALL patients have equal access to the same clinical treatments and outcomes, regardless of race / ethnicity, sex & sexual orientation, address, education, socioeconomic status, and other factors that implicitly bias care decisions.

Spreading to the education of proactive and managed wellness in underrepresented communities, including considerations about the direct / indirect relationships between health and food, environment, social integration, municipal support, and other factors.

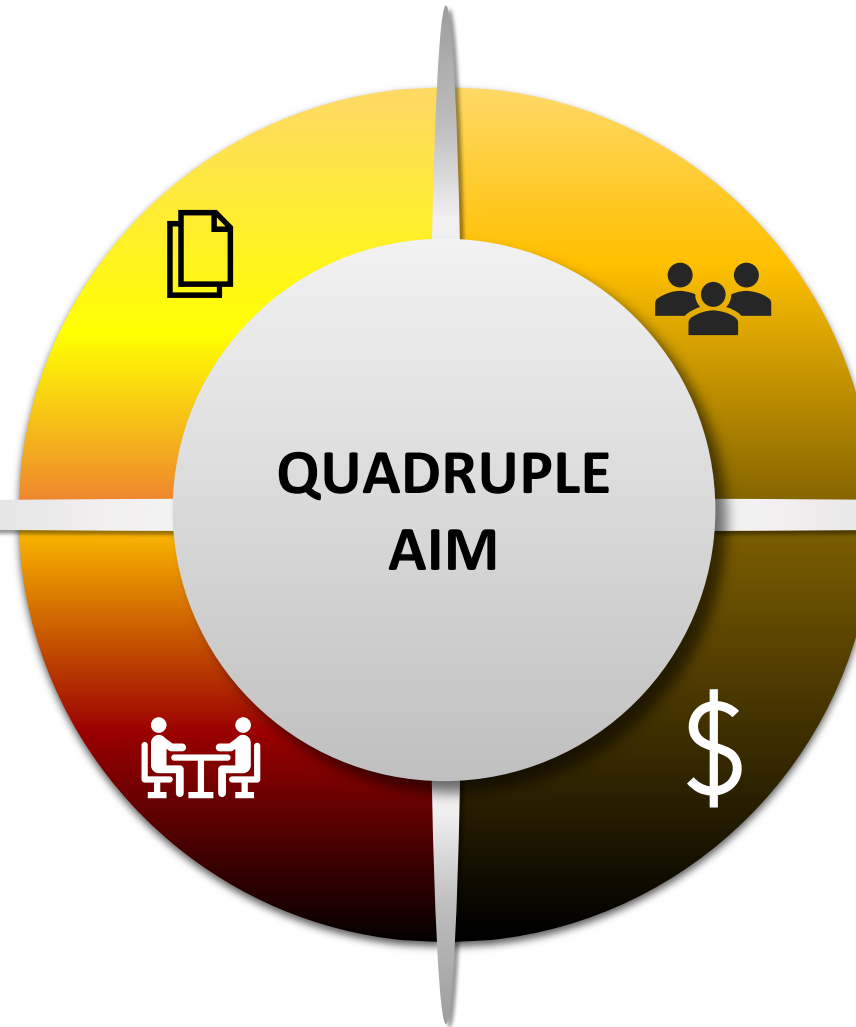
Improving Community Engagement

Improving Clinical Decisions

Through better access to data on historically underrepresented populations helps to drive feedback loops between clinical diagnoses and outcomes. Developing population models decreases risks and ensures implicit biases can be tracked.

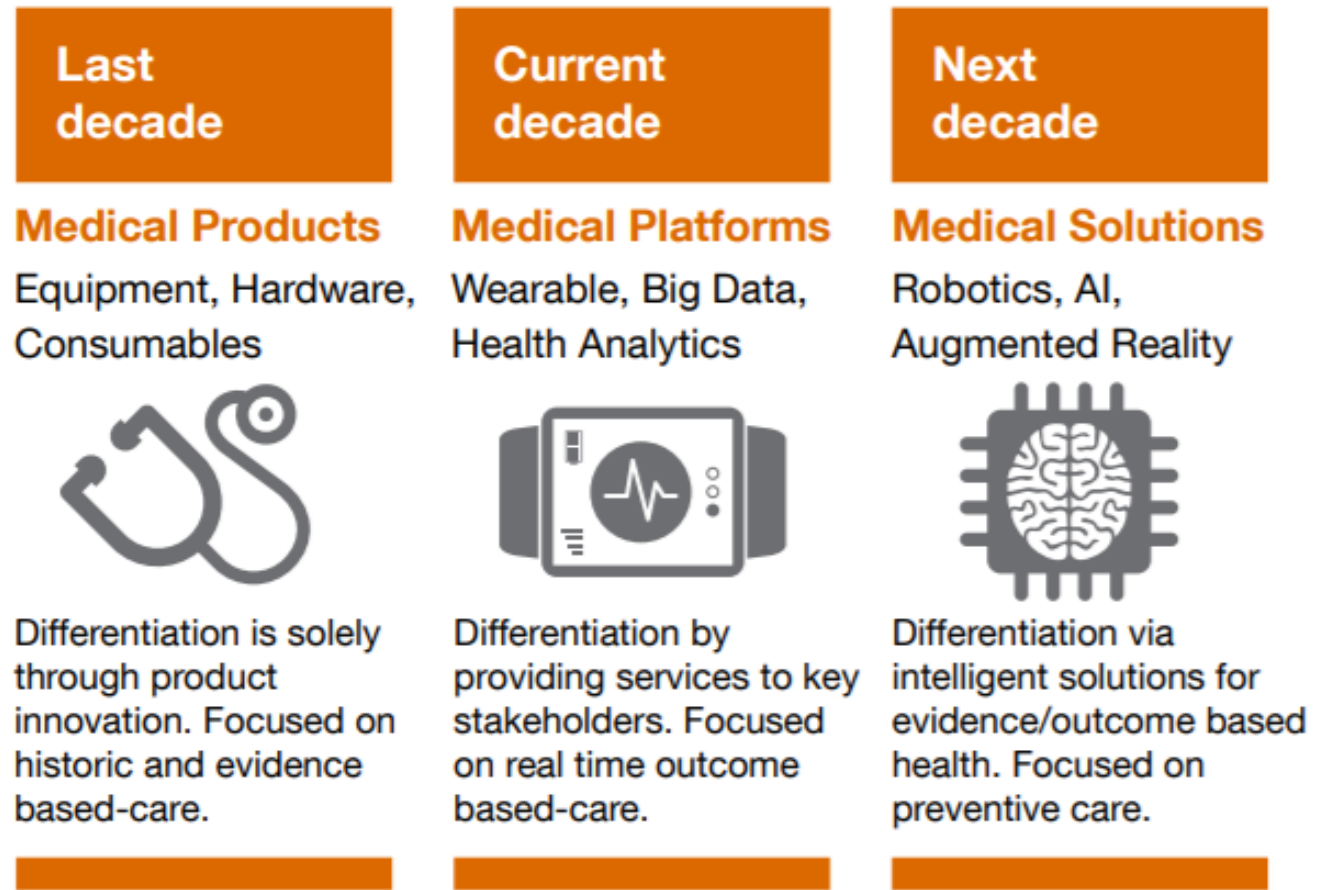
Minimizing the gaps in healthcare costs brings majority & minority care into an equitable range where payors and pharma can normalize outcomes while ensuring all patients have the same access to life-saving care.

Reducing Costs & Access to Care



Healthcare Advances over Time

- **Collection of Data** – yesterday, understanding how to diagnose and treat patients was of critical importance. “What’s wrong?” was the major concern as diagnostic determinations were the key hurdle.
- **Persistence of Data** – today, clinical diagnoses are more straightforward. The key hurdle is “Now what?” as providers examine the best treatment options. Limitations in underrepresented data hamper these efforts.
- **Use of Data** – tomorrow’s systems will automate diagnoses, treatments, and operations. But if implicit biases are built into the systems and data is limited, how effective will these solutions be for historically marginalized communities?



Source: Frost & Sullivan, 'Transforming healthcare through artificial intelligence systems', 2016

Example – Modern Patient Experience Journey Map



DIGITAL HOT SPOTS

Prior to Visit

- Seeking healthcare information, remote triage
- Choosing a physician or caregiving facility for treatment
- Appointment scheduling and reminders

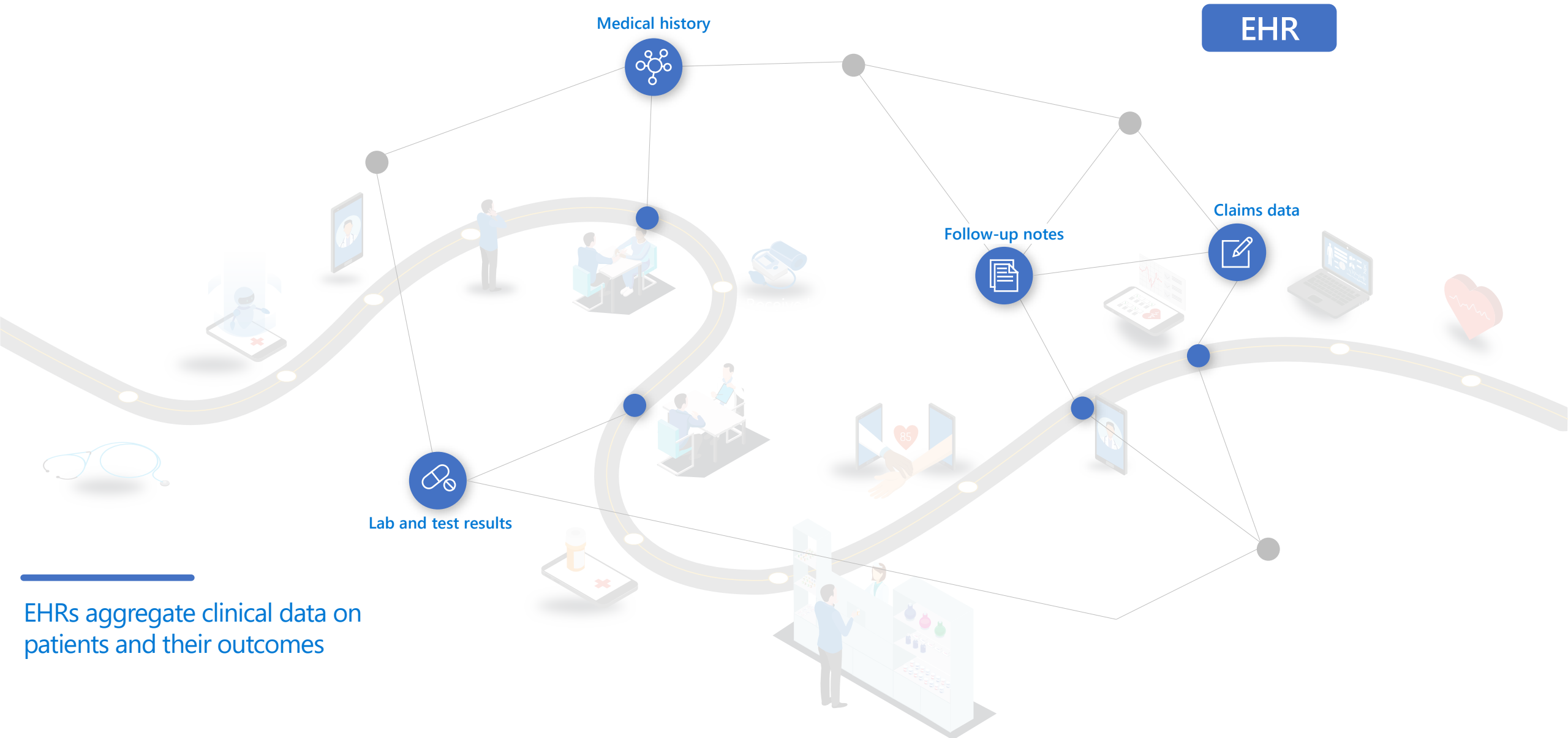
Diagnosis and Treatment

- Remote interactions with providers
- Accessing and sharing electronic health records (EHR)
- AI-based provider support
- Care team collaboration

Follow-up Care

- Filling, refilling, and approving prescriptions
- Remote health monitoring
- Ongoing patient care and plan reminders

EHR systems are critical to capturing patient clinical encounter data & for billing



EHRs aggregate clinical data on patients and their outcomes

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Historically inaccurate data collected or used during clinical engagements

EHR

+

BIAS

Medical history

Treatments for patients may not be offered because of data collection errors, or treatments may not be offered because of a perceived inability to pay

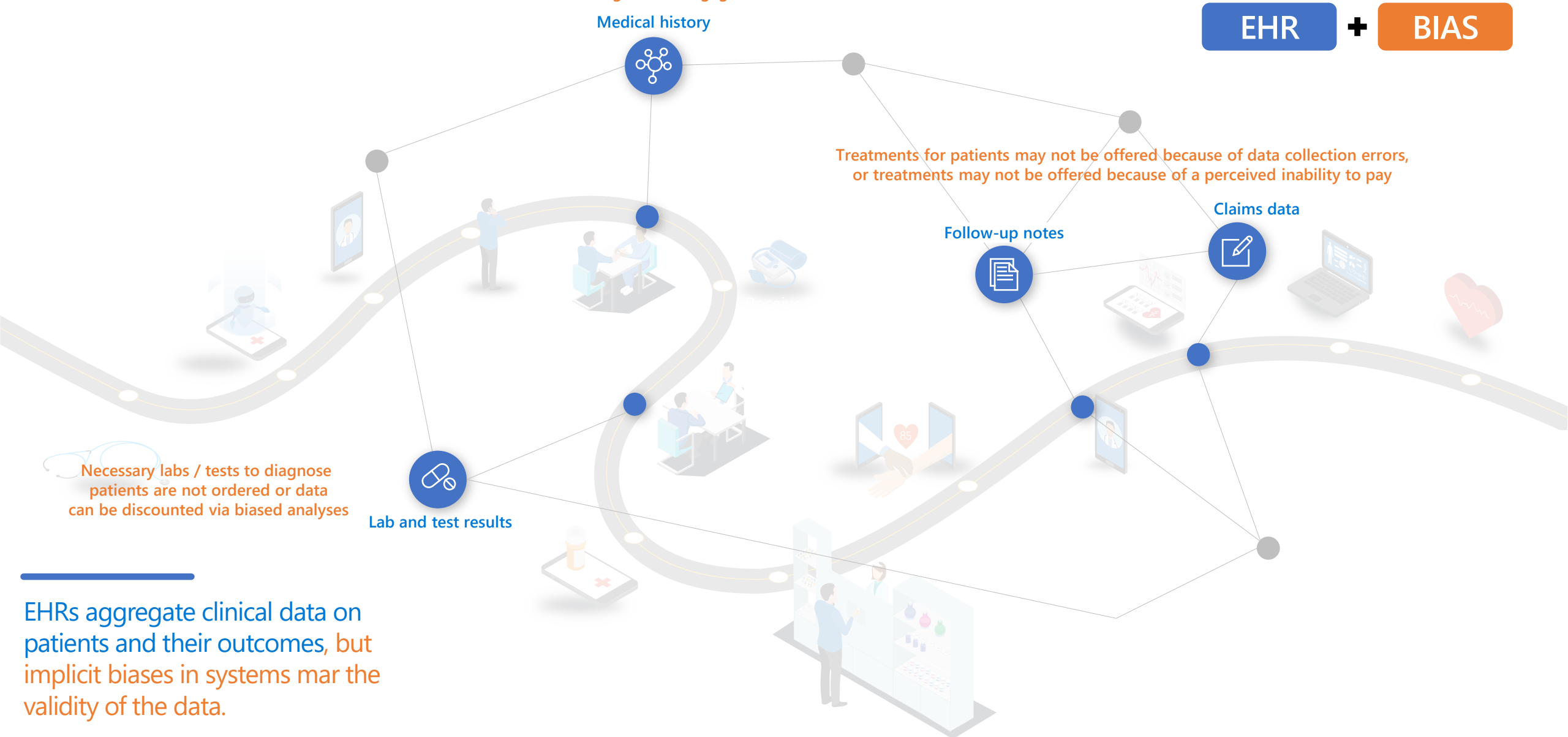
Follow-up notes

Claims data

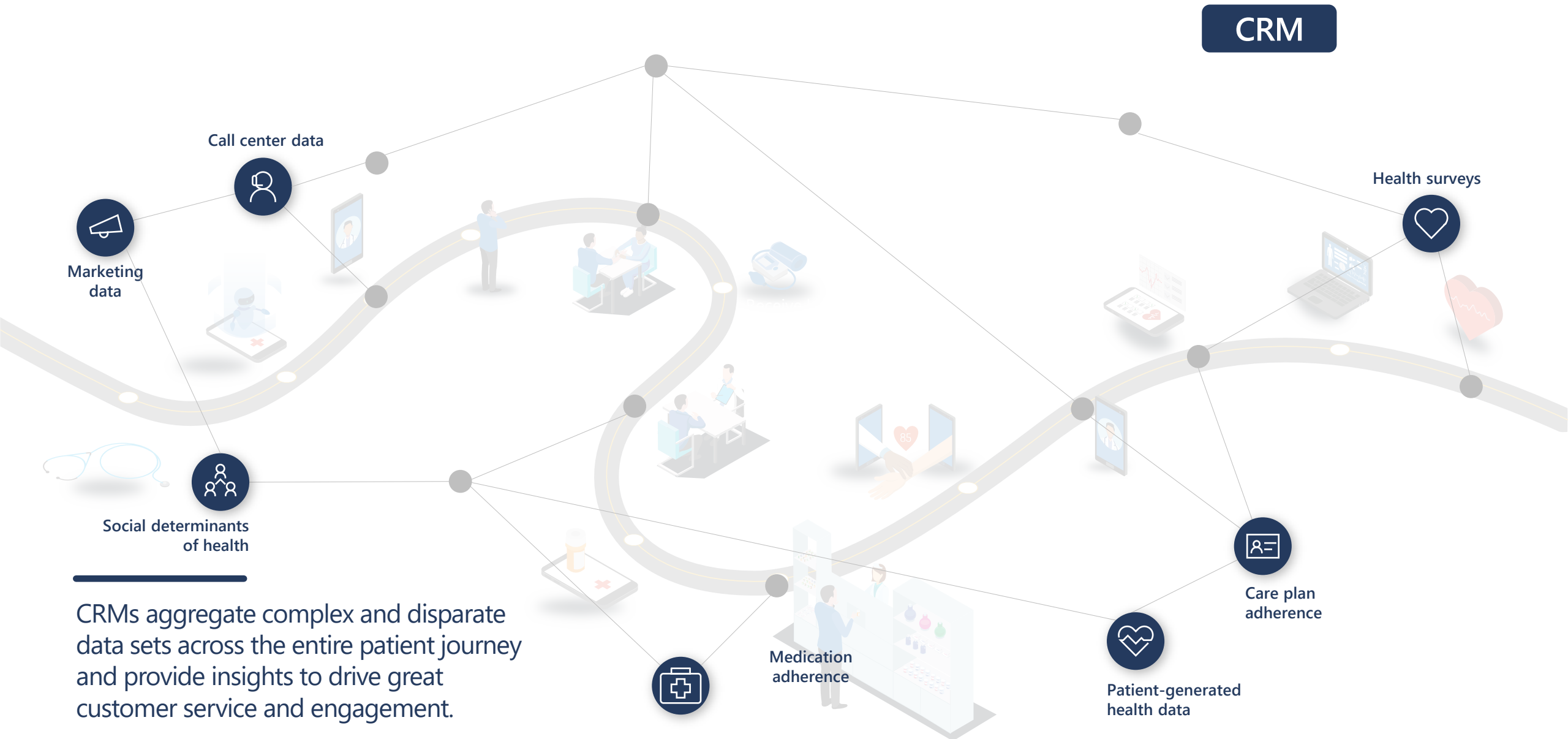
Lab and test results

Necessary labs / tests to diagnose patients are not ordered or data can be discounted via biased analyses

EHRs aggregate clinical data on patients and their outcomes, but implicit biases in systems mar the validity of the data.



CRM systems are critical to engaging, acquiring, and retaining consumers

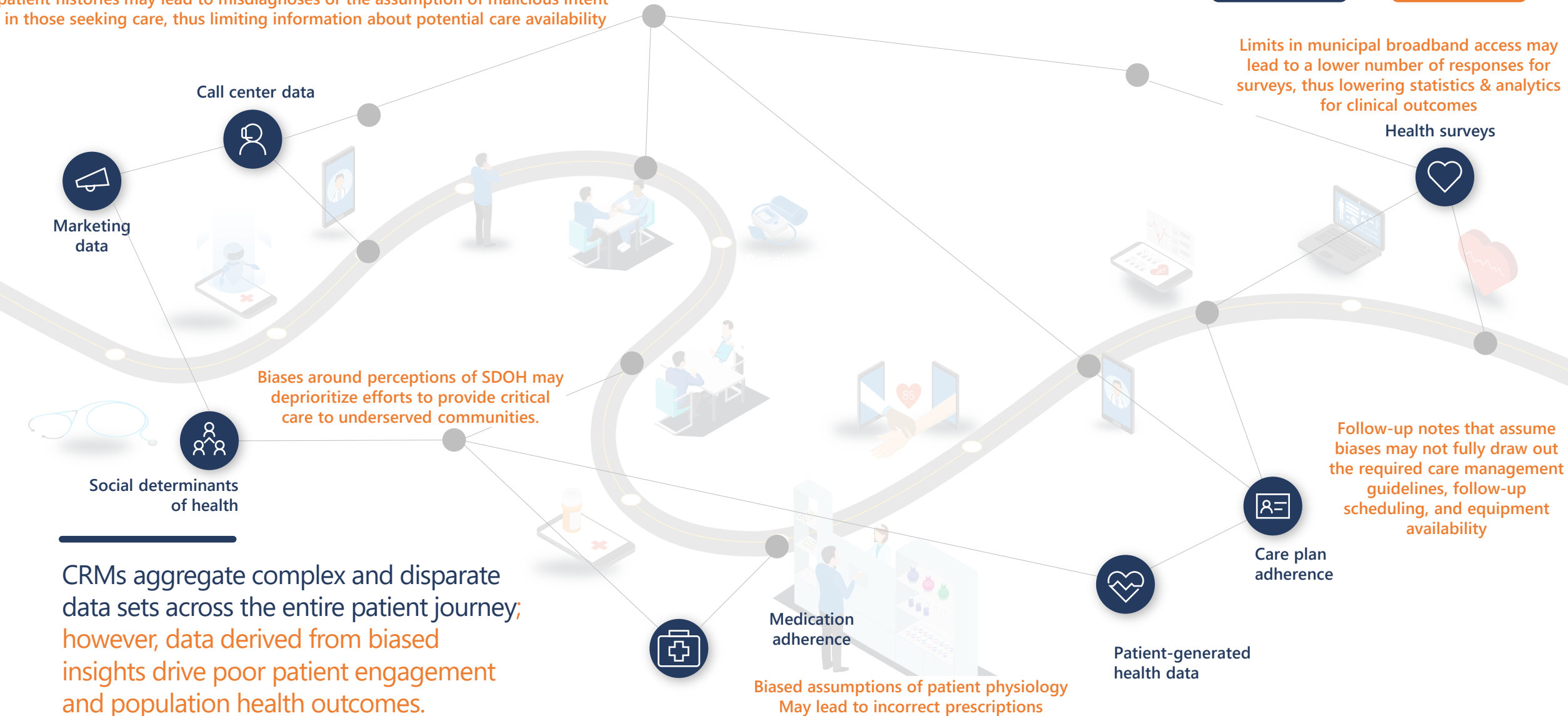


CRM systems are critical to engaging, acquiring, and retaining consumers

CRM + **BIAS**

Biased assumptions of historically underserved communities and flawed patient histories may lead to misdiagnoses or the assumption of malicious intent in those seeking care, thus limiting information about potential care availability

Limits in municipal broadband access may lead to a lower number of responses for surveys, thus lowering statistics & analytics for clinical outcomes



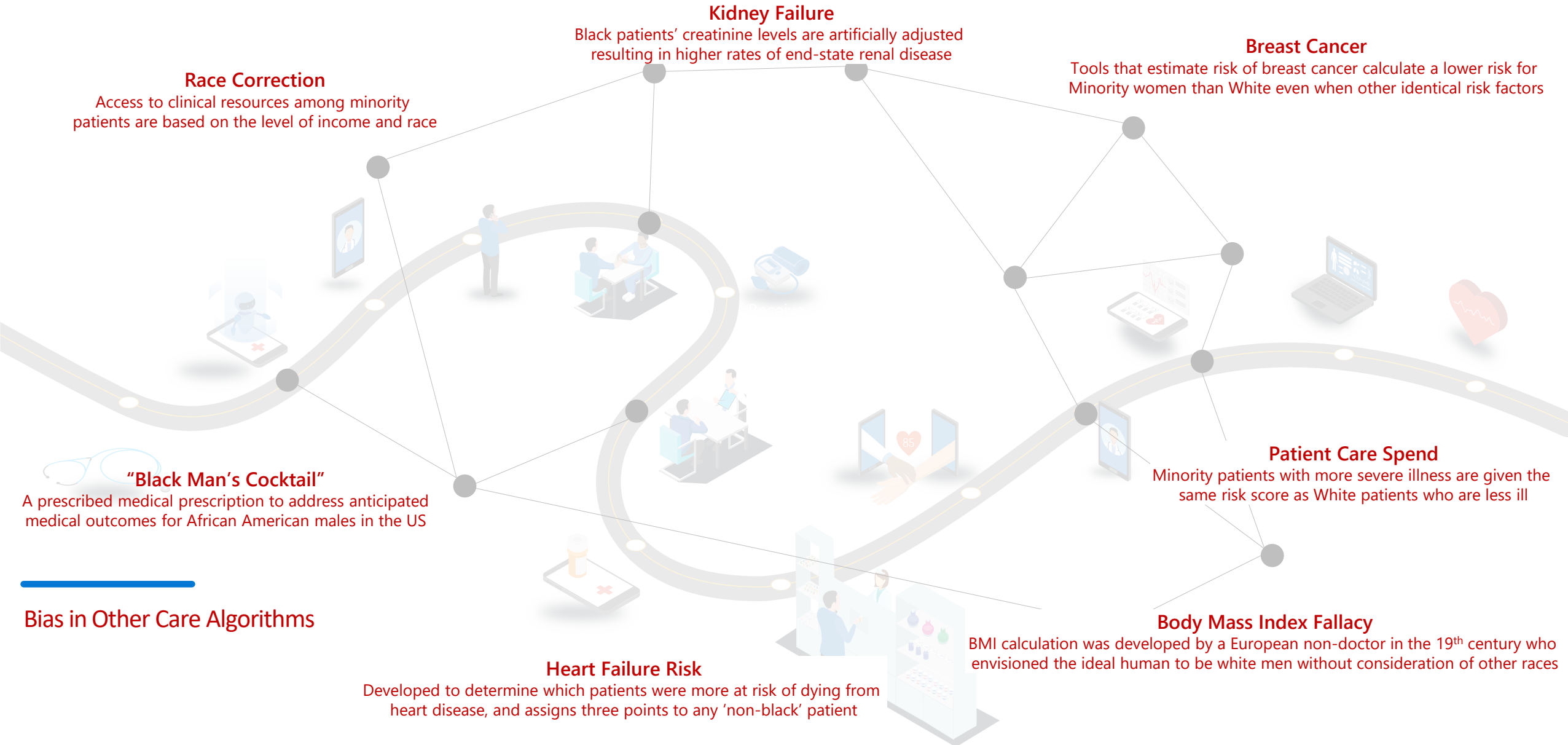
CRMs aggregate complex and disparate data sets across the entire patient journey; however, data derived from biased insights drive poor patient engagement and population health outcomes.

Follow-up notes that assume biases may not fully draw out the required care management guidelines, follow-up scheduling, and equipment availability

Biased assumptions of patient physiology May lead to incorrect prescriptions

Examples of Implicit Bias from 2022

Implicit bias is an issue that is occurring in real-time across healthcare





Strategies to Address Bias and Increase Data Fairness



- *Hire Diverse Data Teams*

- It is important there are individuals on a data team that resonate with the data being collected and analyzed

- *Encourage Accountability*

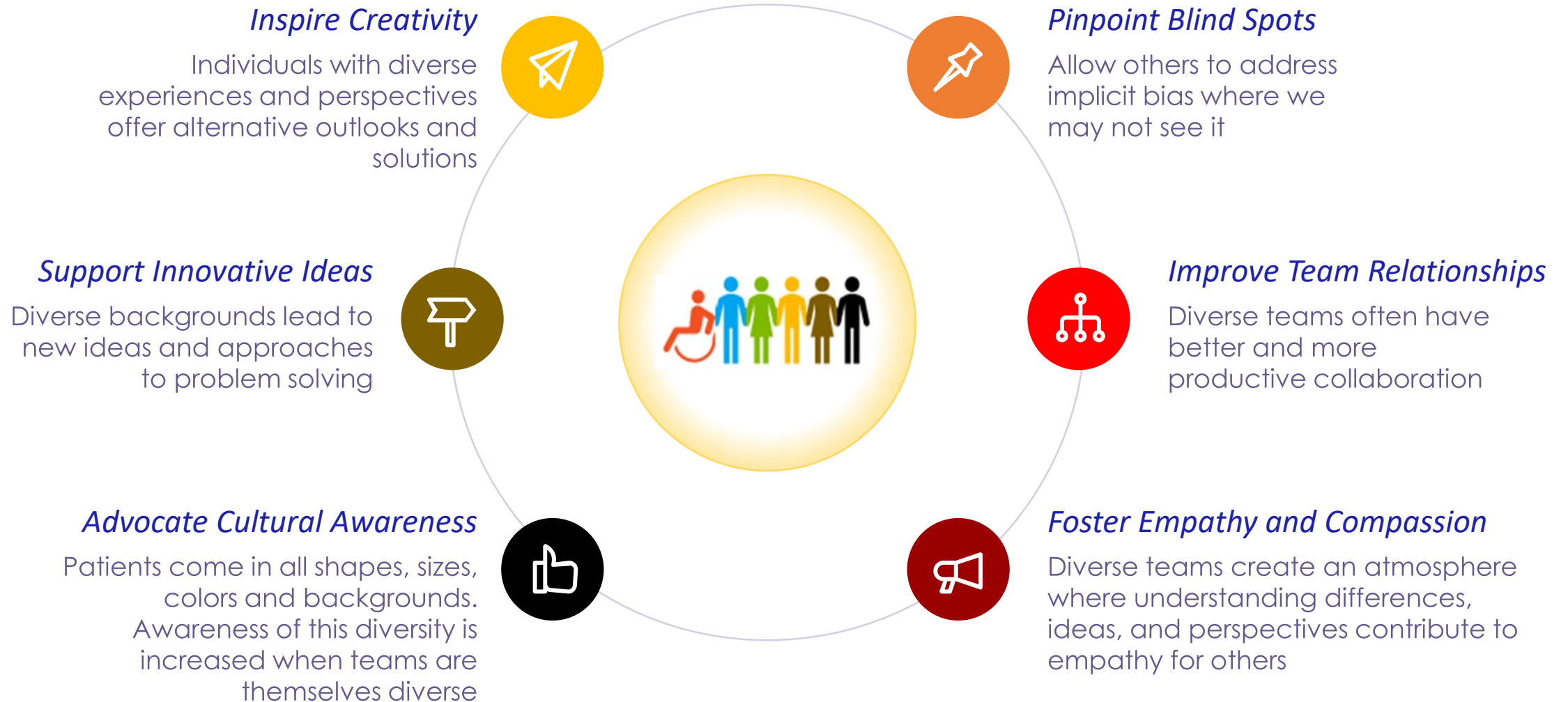
- To demonstrate commitment to addressing bias, encourage team members to speak up, even anonymously, when the data seems unfair or biased



- *Leverage Tools to Reduce Bias*

- Normalize the use of available tools to reduce bias

Hire Diverse Data Teams



Encourage Accountability

Dignity over Surveillance

Create positive conditions where bias can be addressed without guilting or applying defensiveness or emotion to the issue

Fairness Focus

Accountability should not confuse sameness with fairness – prioritizing fairness in an accountability process establishes connections and promotes diverse opinions

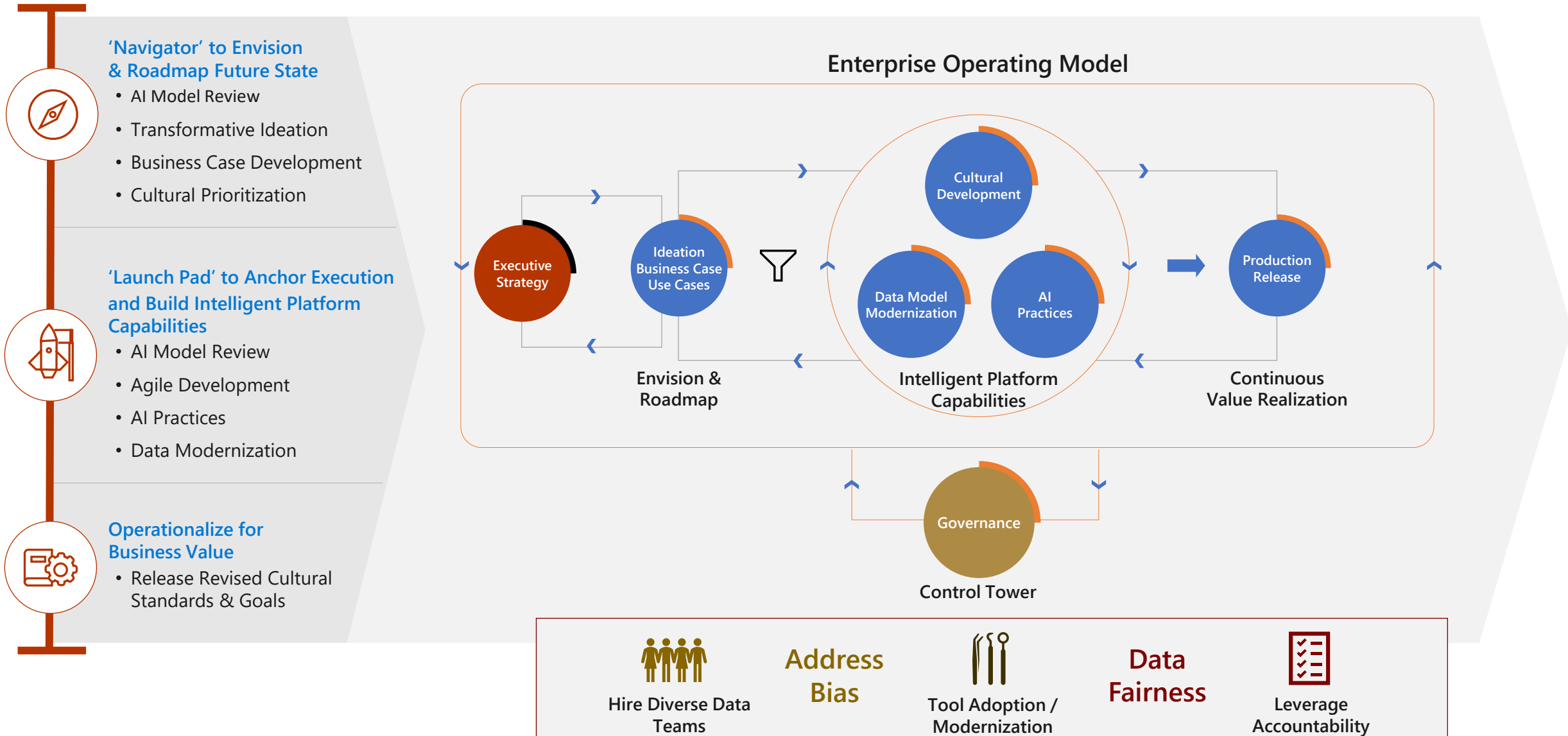
Focus on Correction, not Blame

Correcting bias is the goal, not blaming.

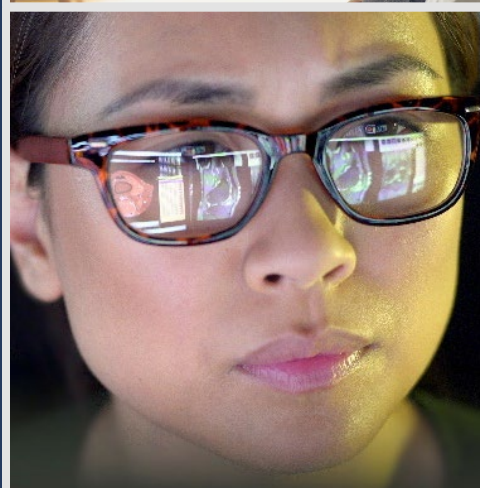


IDO Control Tower to Govern Organizational Bias

Incremental Delivery, Team Collaboration, Continual Planning, and Continual Learning



Thank you



Example: The Jordan Crowley Story

How an assumption made in a study in 1999 is delaying treatment for thousands of Black Americans

