Framework to Advancing Health Equity through Data and AI

Health equity means that everyone has a fair and just opportunity to be as healthy as possible.

In recent times, there has been renewed focus on health inequities and disparities. While health inequities and disparities existed for long, we believe few reasons have brought the discussion to the fore:

- **The devastating effects of COVID-19 on Black, Indigenous, and People of Color (BIPOC) groups**

- **Social unrest that US & other countries witnessed in the past two years and the awareness it brought to the needs of vulnerable population.**

Here are some unfortunate facts that show health inequities:

COVID-19 mortality rates are more than 2X as high in Black, Latinx, and Indigenous populations as in White population.

About 23% of Black & non-Hispanic households are food insecure compared to 9% of white households.

African American adults are 60% more likely than non-Hispanic white adults to be diagnosed with diabetes.

Healthcare organizations can no longer ignore the pervasive health inequities and outcome disparities within the members they serve. Organizations should consciously see every decision through the health equity lens and act to mitigate these inequities and improve health outcomes.

The government and Center for Medicare and Medicaid Services (CMS) have been increasingly advocating to minimize health inequities and disparities. Multiple voices are pressing CMS to incentivize Medicare Advantage plans that meet certain health equity metrics.

#1   **CMS has recently stated that it's #1 priority is health equity.**

Some healthcare organizations are tackling the issue of health equity head-on. They are looking to create products and services that will help to bridge the gap. There are teams in certain organizations that focus on health equity work, and some organizations have mandates from the C-level. While there is a lot of momentum, most teams are looking where to start and how to go about it. We see that these teams lack critical data, intelligence, and tools to take the right actions.

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Our Approach

Understand the status quo:

The first step is to understand the status quo. Build tools that will help visualize what inequities and disparities exist in the organization's membership and uncover the facts. This involves aggregating, mapping, and transforming multiple internal (claims, conditions & comorbidities, cost, HEDIS, CAHPS etc.) and external (census, state and local governments, CDC, CAHQ, AHRQ etc.) datasets and building data assets, and developing cognitive BI solutions. In this step, organizations can identify facts and insights about their membership such as:

Medical PMPM of African Americans is 20% higher compared to whites in Region 5 of South Carolina.	Diabetes medication adherence of females is 7% lower when compared to males in Region 1 in Oregon.	Arthritis screening for Spanish-speaking members was 15% lower when compared to English-speaking members in Arizona.

Understanding the "why":

Health inequities and disparities result from multiple experiences a member has in their socio-economic and healthcare journeys. Social determinants of health (SDOH), the community the member lives in, and structural factors play a significant role in one's health outcomes.
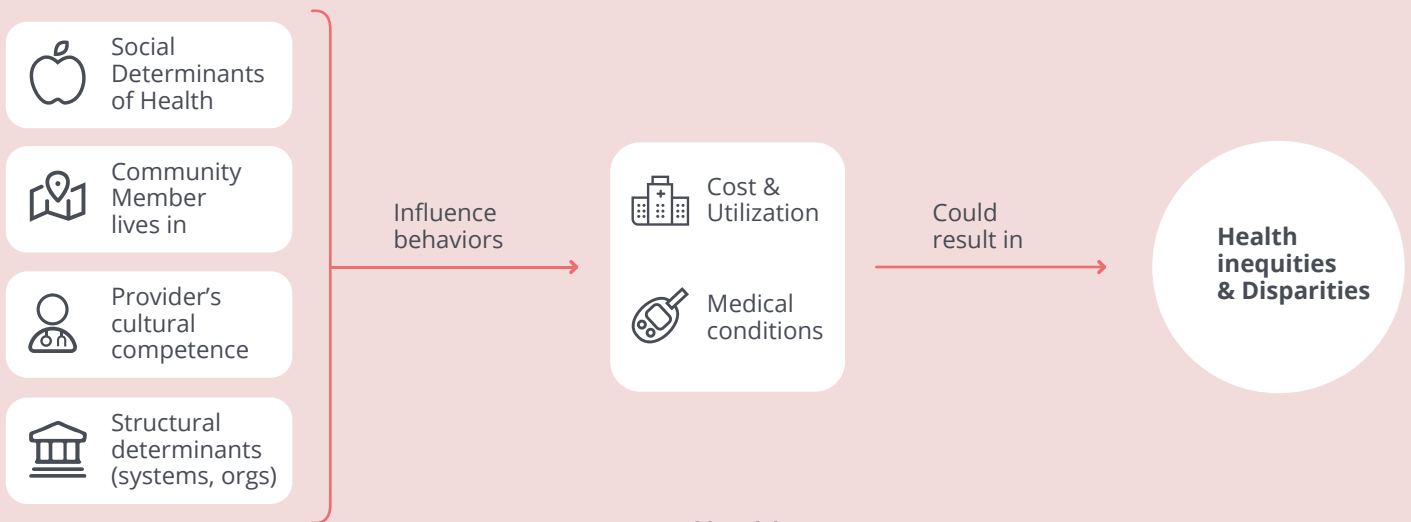

Social Determinants of Health

Community Member lives in

Provider's cultural competence

Structural determinants (systems, orgs)

Influence behaviors

Cost & Utilization

Medical conditions

Could result in

Health inequities & Disparities

Figure 1: Causes of health inequities

Health equity is a complex issue.
Advancing health equity needs a multifaceted approach involving data, analytics and AI.

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In this step, we identify the drivers of inequities and disparities that are specific to the organization's membership. This requires extensive data analysis, building advanced AI/ML models to pinpoint features and predict who would be more susceptible and which zip codes would be more vulnerable. Analysis of multiple internal metrics such as claims, PMPMs, conditions, and community indicators such as social vulnerability index, social deprivation index, Gini index, etc., are critical here.
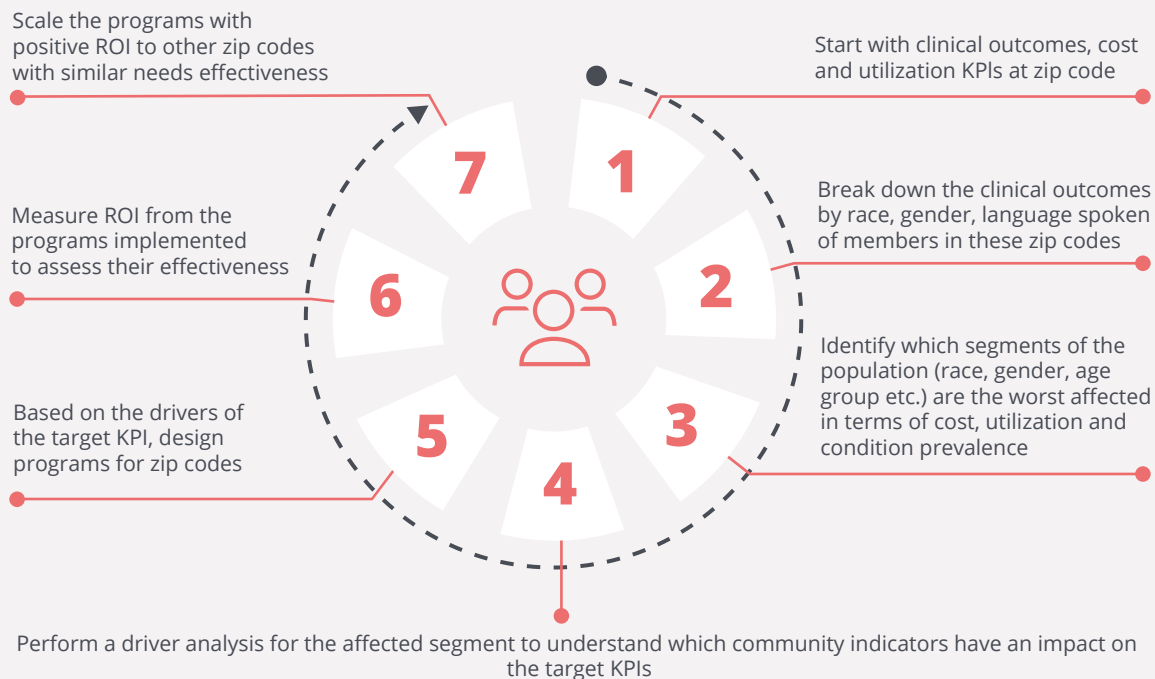

Scale the programs with positive ROI to other zip codes with similar needs effectiveness

Start with clinical outcomes, cost and utilization KPIs at zip code

Measure ROI from the programs implemented to assess their effectiveness

Break down the clinical outcomes by race, gender, language spoken of members in these zip codes

Based on the drivers of the target KPI, design programs for zip codes

Identify which segments of the population (race, gender, age group etc.) are the worst affected in terms of cost, utilization and condition prevalence

Perform a driver analysis for the affected segment to understand which community indicators have an impact on the target KPIs

Figure 2: Framework to understand the "why" and steps to drive actions

Strategize, execute and scale:

With an understanding of insights and drivers acquired from previous steps, create health equity strategy; come up with interventions considering the organization's goals and resources available, and define what metrics you would like to move and how success will look like. Implement these interventions at the member level/community level, measure outcomes and scale.

It can take months or years before organizations see favorable outcomes in health equity space. But not investing to advance health equity can fail not only health outcomes of members but also business outcomes of organizations.
So, take action!

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