the Playbook

Better Care for People with Complex Needs

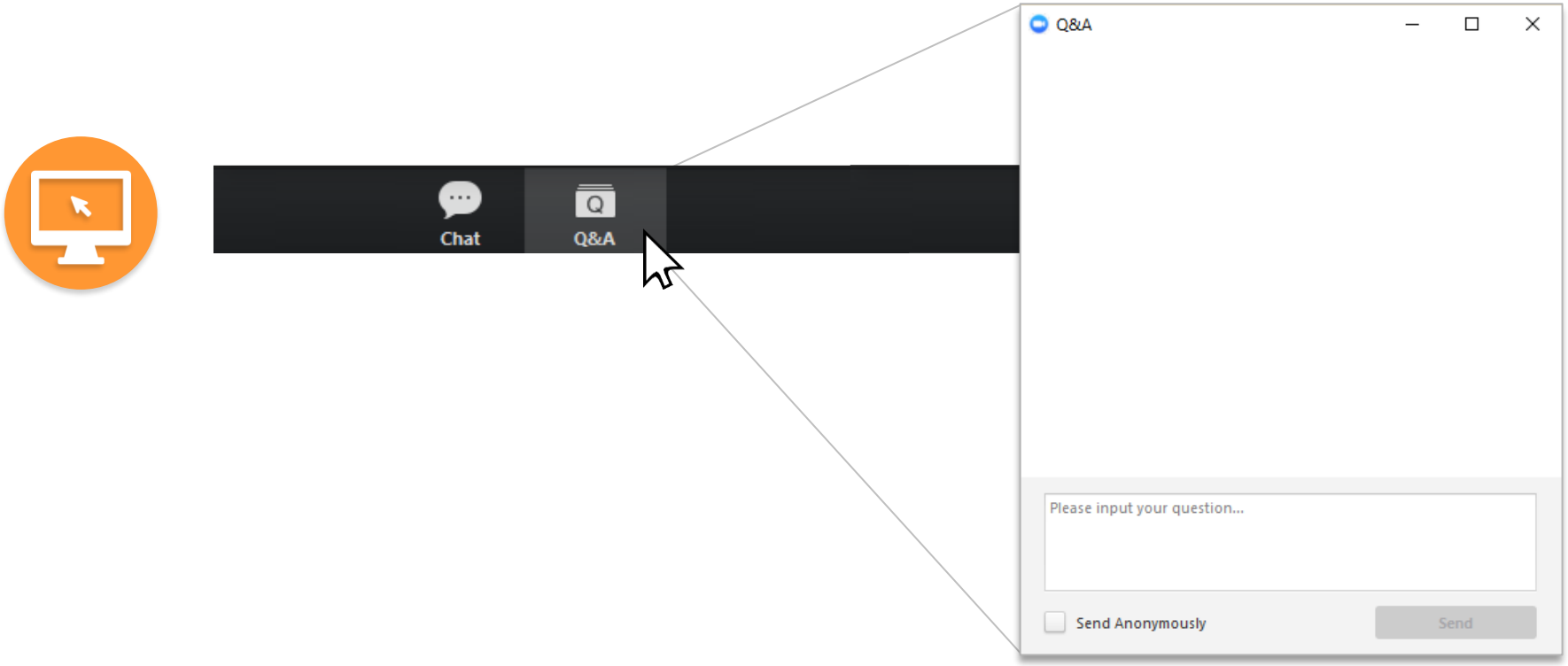
Using Patient Segmentation and Data on Health-Related Social Needs to Identify People with Complex Needs

October 28, 2021, 1:00-2:15 pm ET

Made possible with support from the Seven Foundation Collaborative —Arnold Ventures, The Commonwealth Fund, The John A. Hartford Foundation, the Milbank Memorial Fund, Peterson Center on Healthcare, the Robert Wood Johnson Foundation, and The SCAN Foundation.

Questions?

- To submit a question, click the Q&A icon located at the bottom of the screen.



Welcome & Introductions

About the Better Care Playbook

Find information. The Playbook is an online resource center for evidence-based and promising practices for people with complex health and social needs.

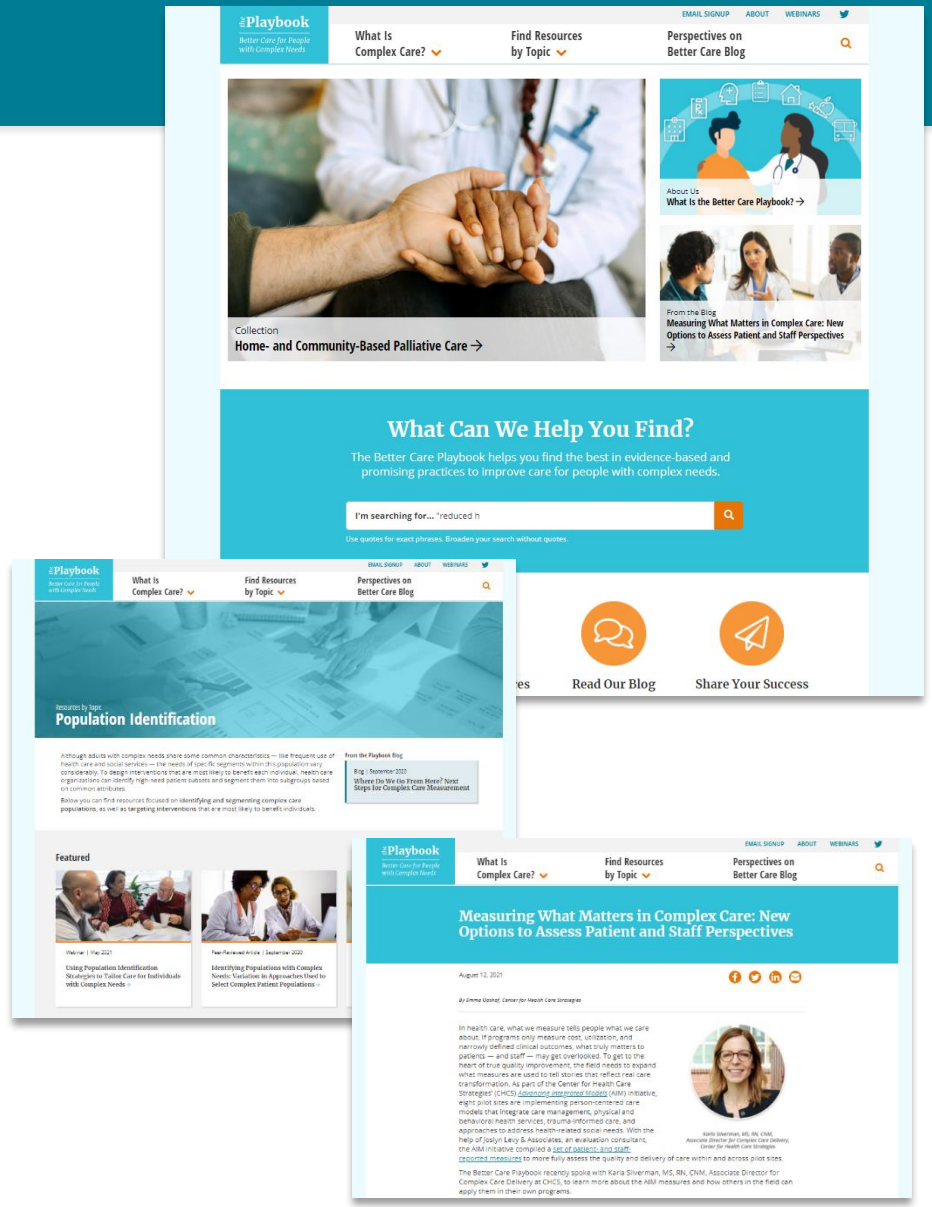
Learn about first-person perspectives. Read case studies and join webinars highlighting the real-world experiences of providers, payers, community-based organizations, and policymakers to improve care.

Apply the evidence. Find practical implementation tools to inform providers, payers, policymakers, community-based organizations, and others on strategies to improve care.

About the Better Care Playbook

The Playbook is coordinated by the Center for Health Care Strategies through support from seven leading national health care foundations — Arnold Ventures, The Commonwealth Fund, The John A. Hartford Foundation, the Milbank Memorial Fund, Peterson Center on Healthcare, the Robert Wood Johnson Foundation, and The SCAN Foundation.

BetterCarePlaybook.org



Agenda

- Welcome and Introductions
- Jose Figueroa, Harvard School of Public Health: Using Segmentation Frameworks to Identify Patients with Complex Needs
- Louis Cabanilla, Point32Health: Developing a Patient Dashboard to Drive Organizational Strategy
- Andrew Renda, Humana: Integration of Social Determinants of Health Data
- Moderated Q&A

Today's Presenters

Karla Silverman, MS, RN, CNM
Associate Director, Complex Care Delivery, Center for Health Care Strategies

Louis Cabanilla, MSc
Director of Clinical Analytics, Point32Health

Jose Figueroa, MD, MPH
Assistant Professor of Health Policy and Management, Harvard T.H. Chan School of Public Health; Assistant Professor of Medicine, Harvard Medical School

Andrew Renda, MD, MPH
Vice President, Bold Goal and Population Health Strategy, Humana

Segmentation Frameworks

- Individuals with complex health and social needs are a heterogenous population. A “one size fits all” approach won’t work for everyone.
- Segmentation frameworks combine analytics with clinical insights to help health systems and payers identify groups of individuals with shared characteristics.
- Once specific groups are identified, interventions and care can be tailored to the specific needs of each population segment.

Using Segmentation Frameworks to Identify Patients with Complex Needs

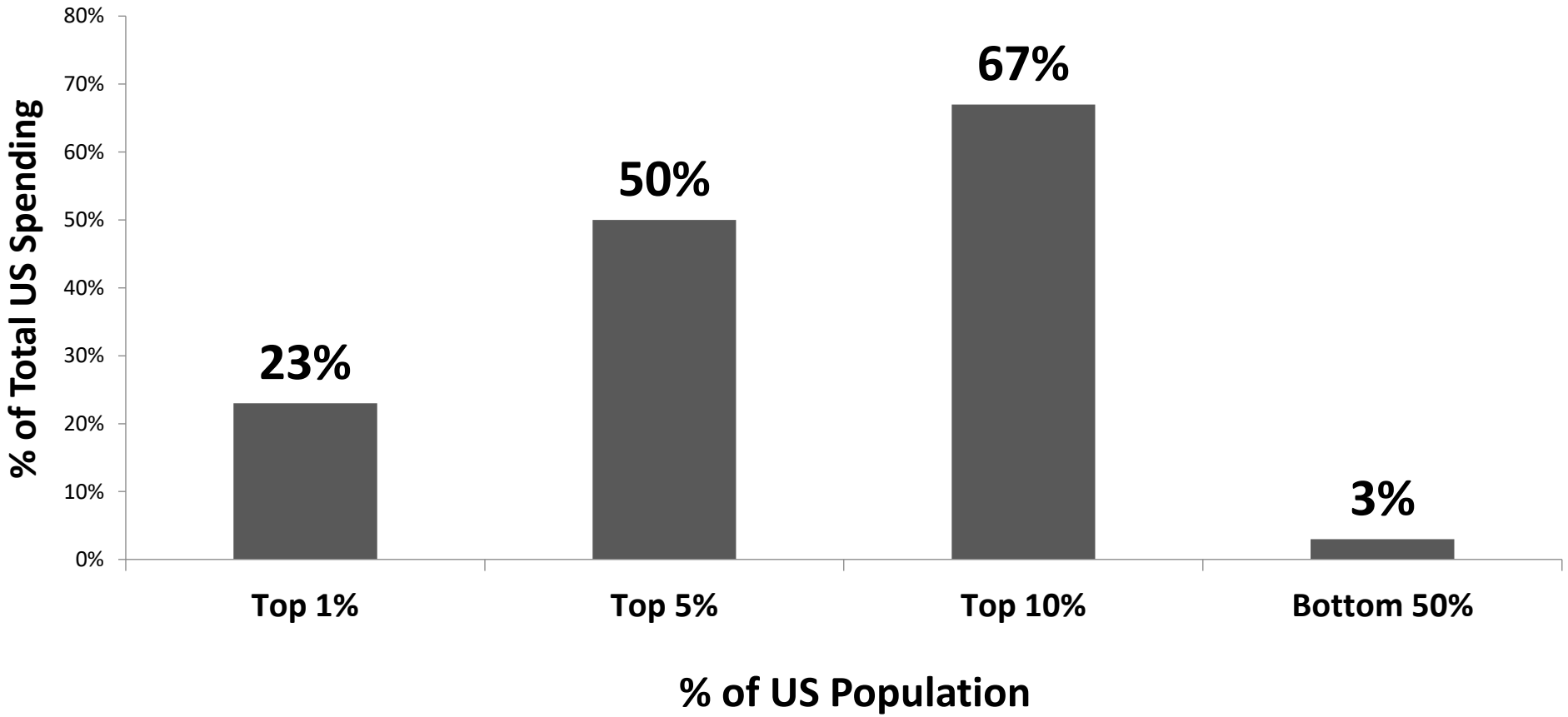
Jose F. Figueroa, MD, MPH

Assistant Professor of Health Policy & Management, HSPH

Assistant Professor of Medicine, HMS

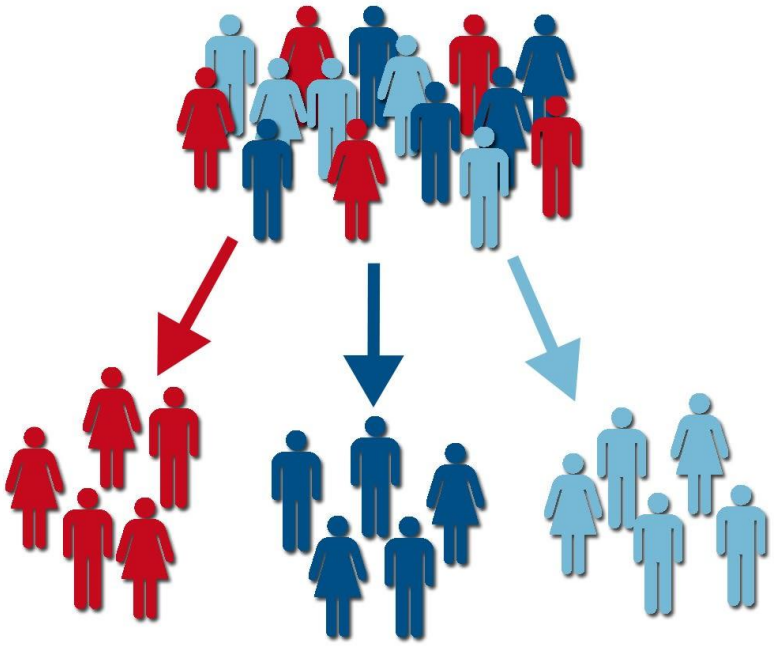
October 28th, 2021

Why the Focus on High-Need, High-Cost Patients?



MEPS, 2018.

Segmenting Populations for Action

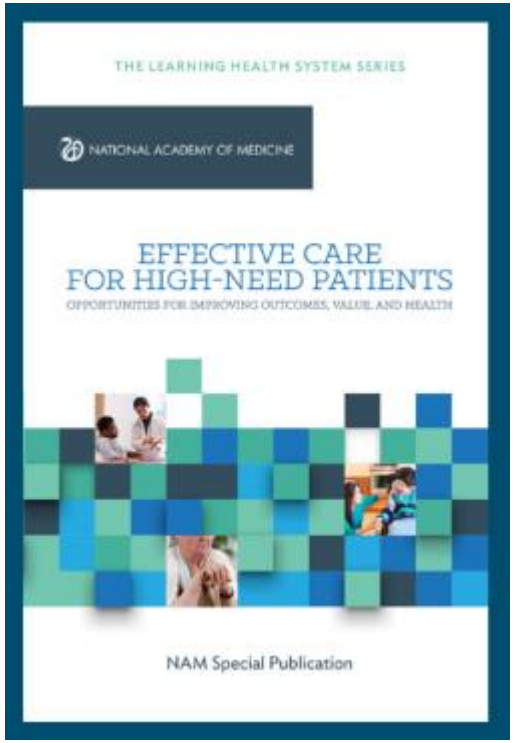


1. Help identify patients who will become high-need, high-cost

2. Help determine if programs/interventions work for complex patients

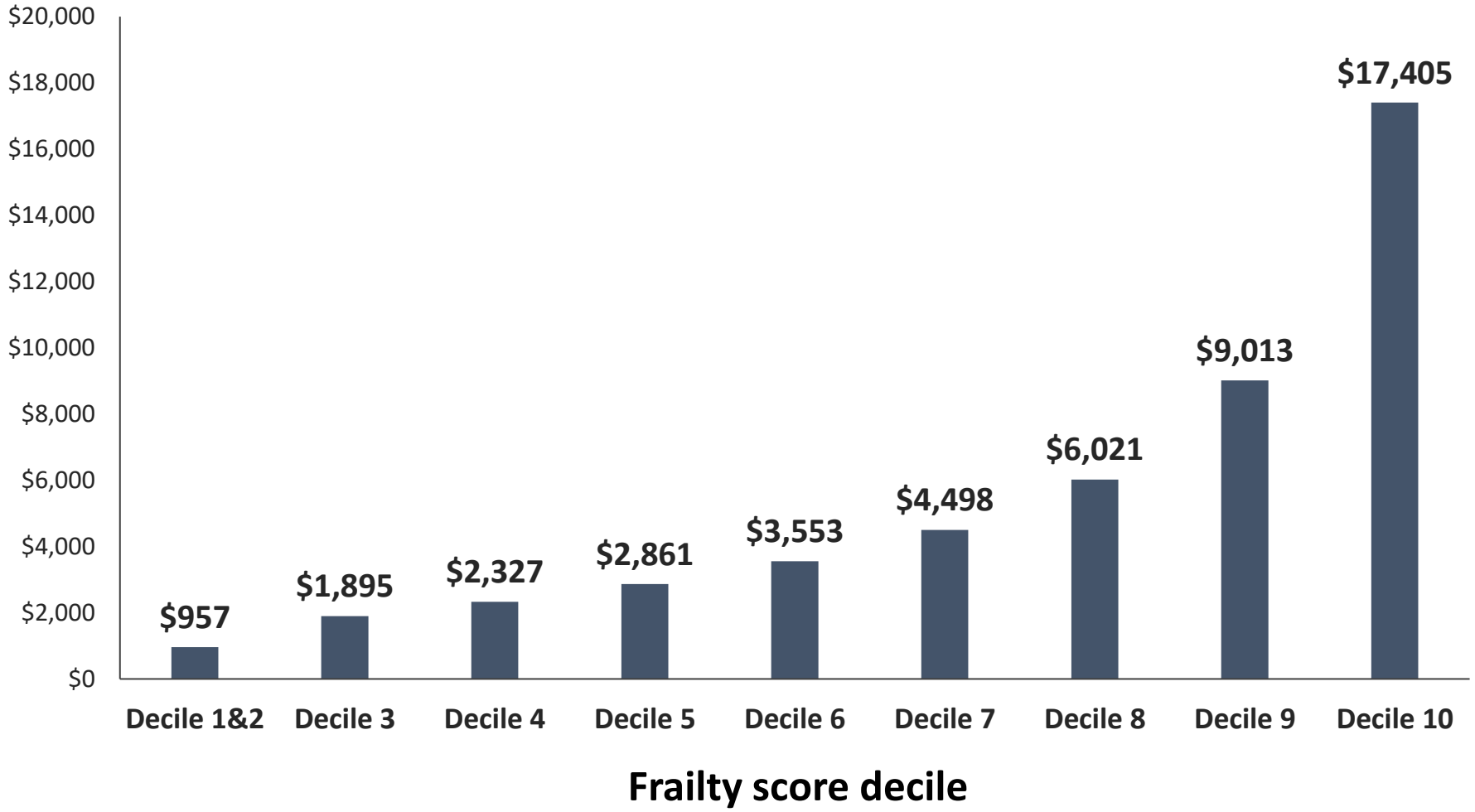
3. Identify “high-performing” healthcare providers for complex patients

Building a Segmentation Framework



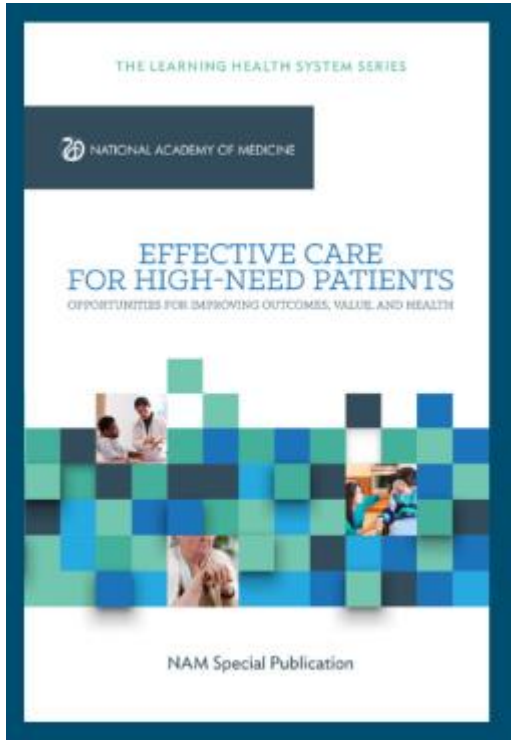
- Frailty
- Serious mental illness
- Complex multimorbidity
- Major disability
- Social vulnerability

Building a Segmentation Framework



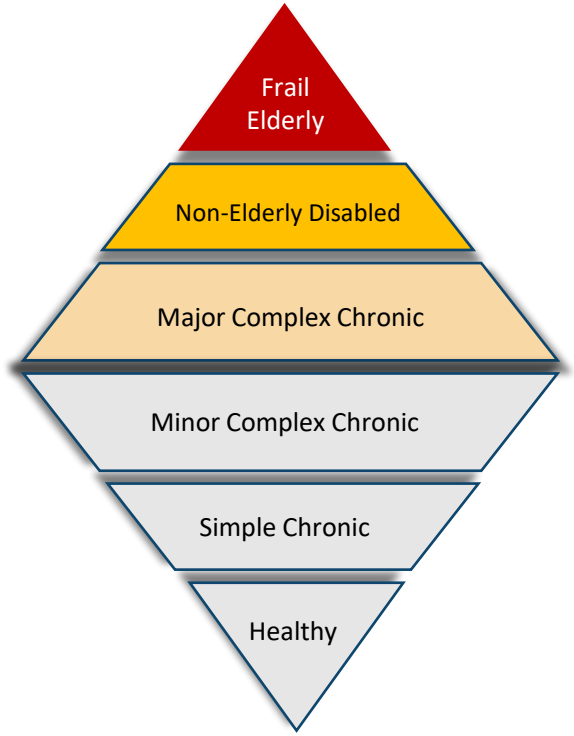
Kim DH et al.

Building a Segmentation Framework



- **Frailty**
- **Serious mental illness**
- **Complex multimorbidity**
- **Major disability**
- **Social vulnerability**

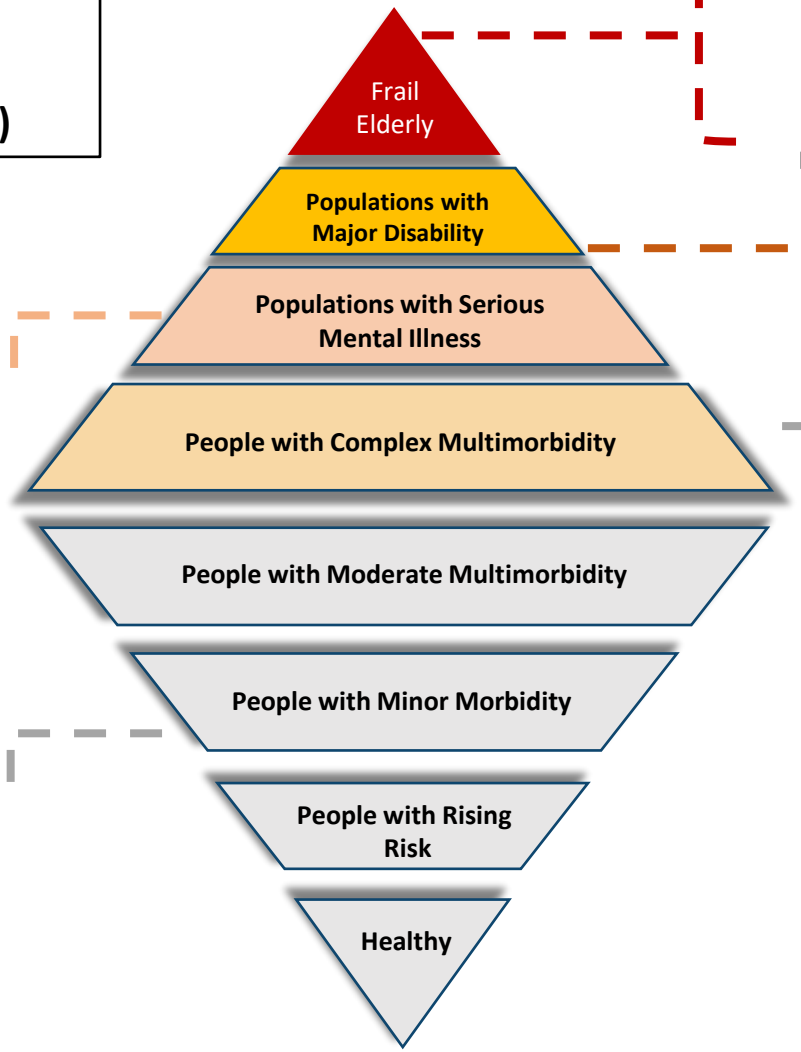
Clinically-Relevant Population Segments



Updated HN/HC Segmentation Framework

Developed in collaboration w/ Institute for Accountable Care & ACOs (*Funded by the Commonwealth Fund*)

Clinically-Relevant Population Segments



Subpopulation #1: Functional/cognitive limitations + complex morbidity

Subpopulation #2: Functional + cognitive

Subpopulation #3: Functional limitations only

Subpopulation #1: Rare Genetic Disorders

Subpopulation #2: Severe neurological disorders

Subpopulation #3: Other functionally impairing disorders

Subpopulation #1: SMI + Behavioral health + complex morbidity

Subpopulation #2: SMI + BH + Minor comorbidity

Subpopulation #3: SMI or BH only

Subpopulation #1: People with systemic autoimmune disorders

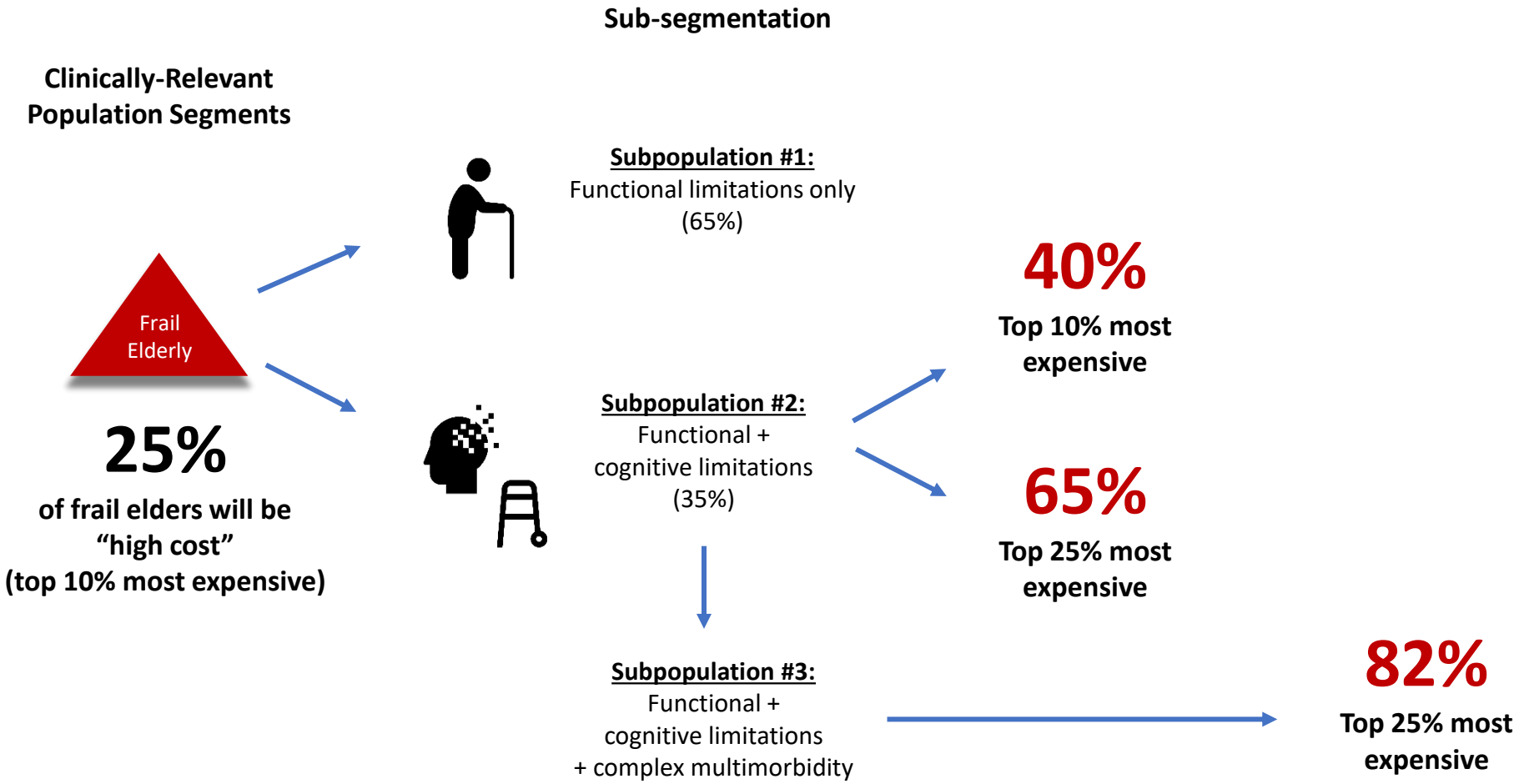
Subpopulation #2: People with complex chronic conditions (3+: CHF, DM, ESRD, etc)

Subpopulation #2: People with HIV/AIDS + multimorbidity

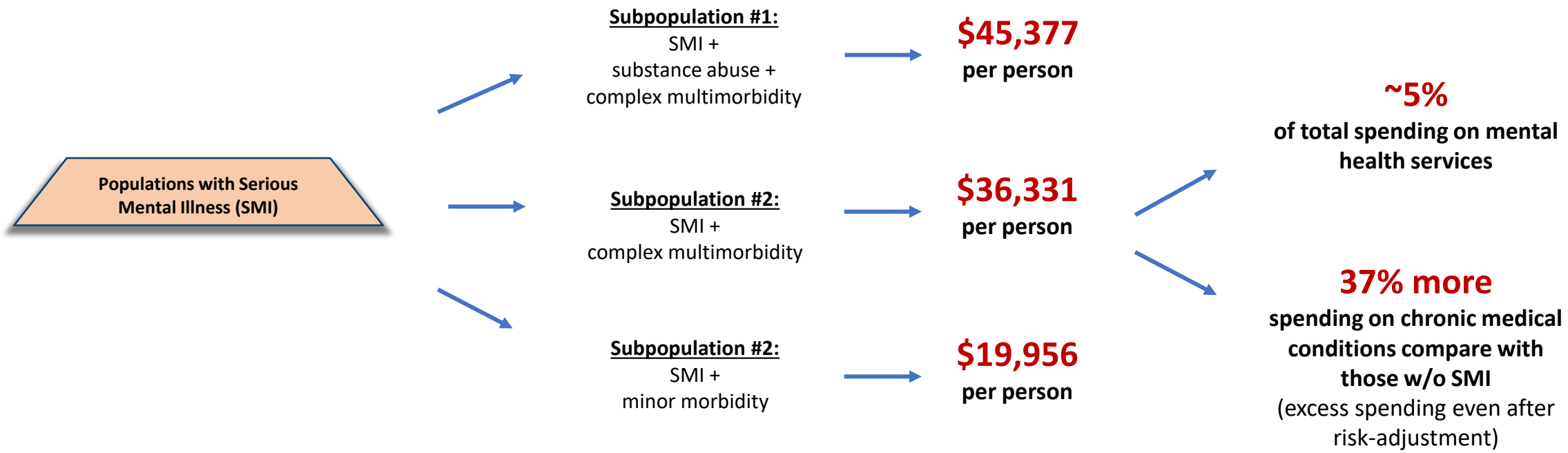
Subpopulation #1: People with metabolic syndrome

HARVARD SCHOOL OF PUBLIC HEALTH

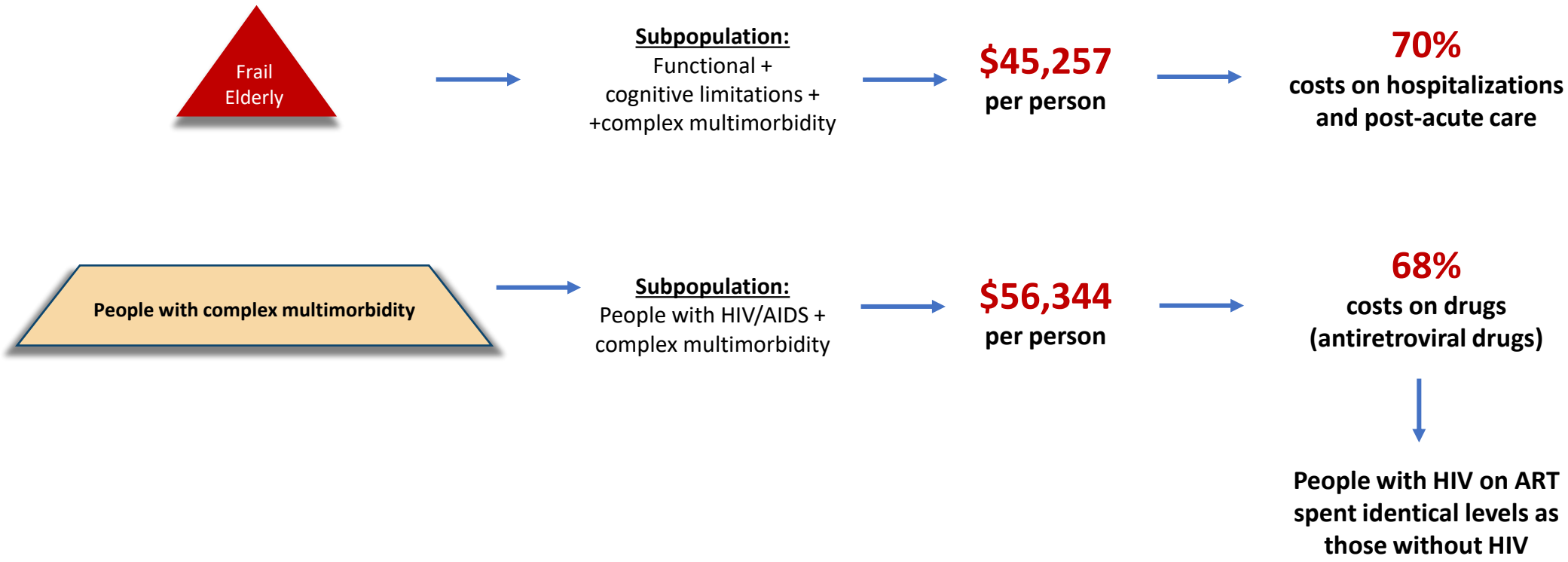
Segmentation Frameworks for HN/HC Patients



Segmentation Frameworks for HN/HC Patients

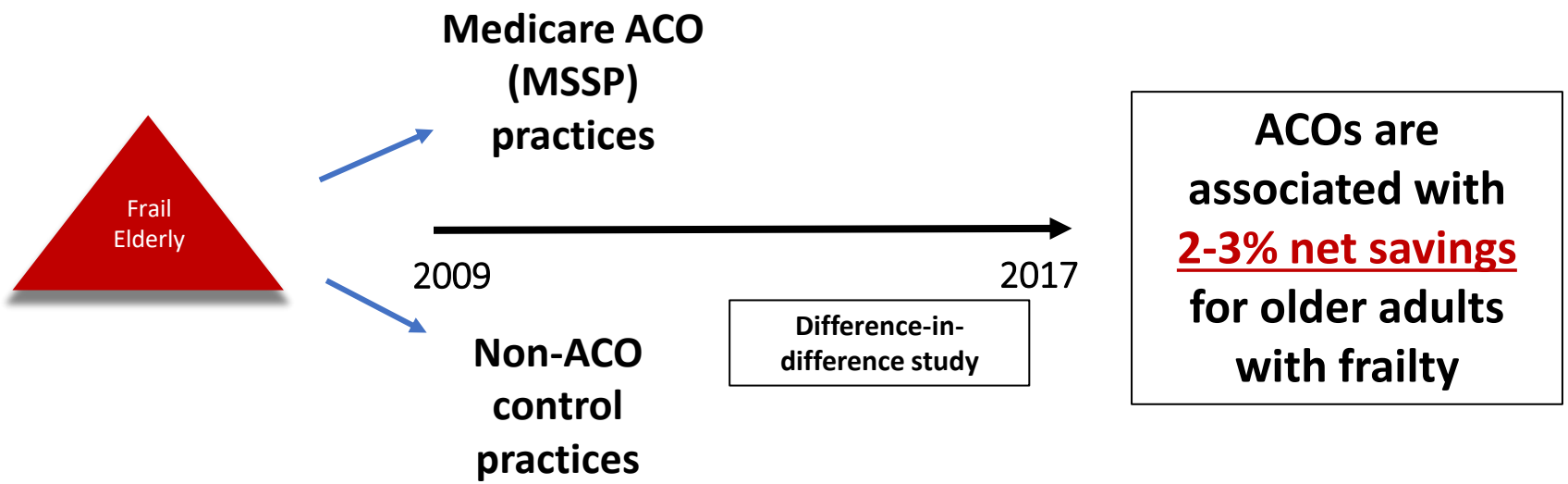


Using Segmentation to Understand Why Patients Become High-Need, High-Cost



Using Segmentation to Understand Which Programs Work for Specific Populations

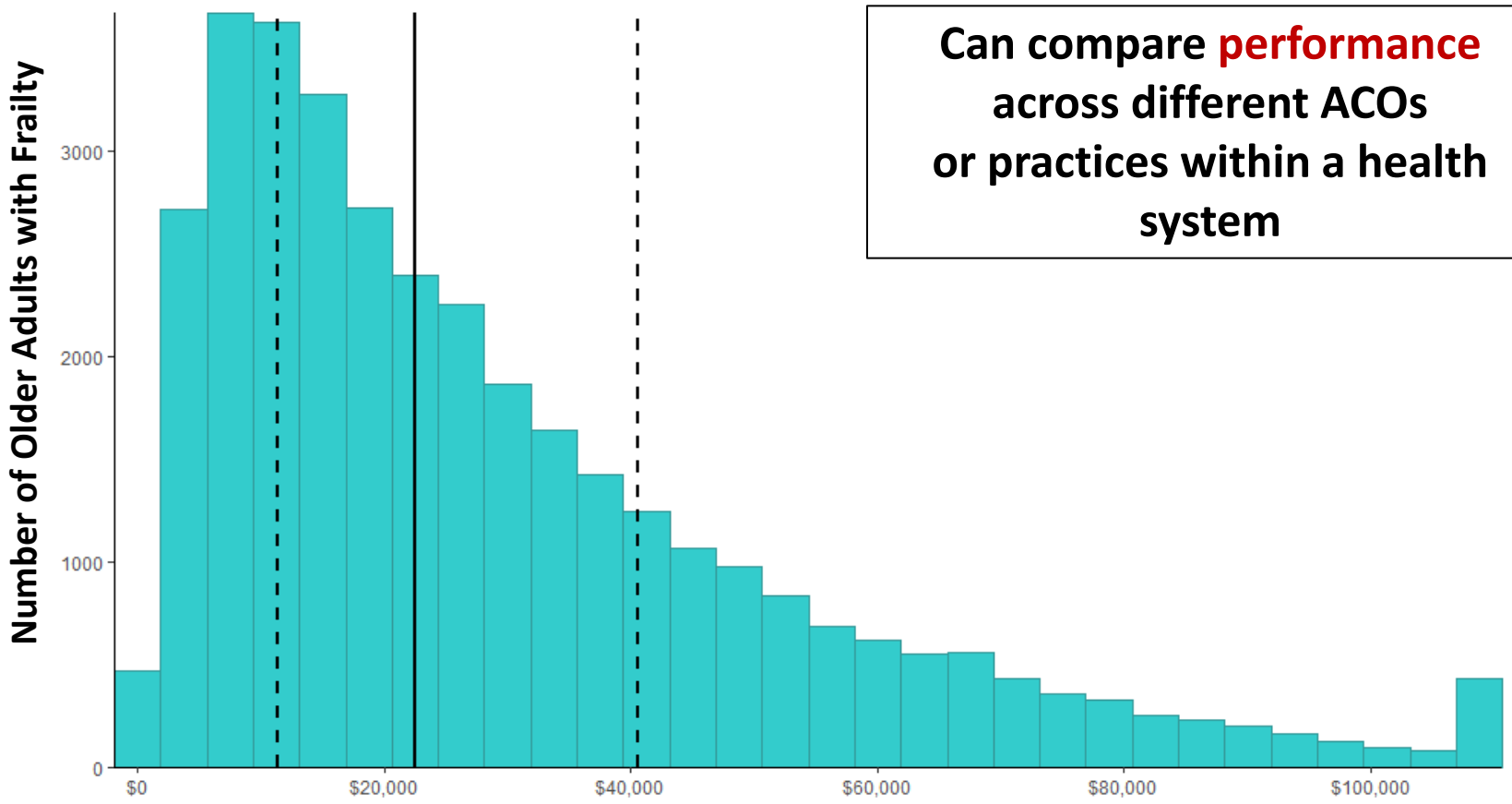
Do ACOs help reduce costs for older adults with frailty?



Segmentation can help assess ROI of programs & interventions

Figueroa et al., JGIM, 2020. (Funded by Commonwealth Fund)

Spending Varies Substantially Across People & Organizations



Can compare performance across different ACOs or practices within a health system

Inclusion of Social Determinants in Segmentation Frameworks is Critical

Social Determinants of Health	Examples of Variables for Inclusion	Health Outcomes of Interest
Economic Stability	Income and wealth Employment Debt Expenses	**Life expectancy** **Mortality** **Morbidity** **Health expenditures** **Functional status** **Patient experience and satisfaction** **Quality of life and well-being** **Burnout among healthcare workforce**
Education	Higher education Literacy/language Early childhood education Vocational training	
Individual identify and behavior	Race/ethnicity Gender identify Healthy behaviors (exercise, diet, smoking, sleep) Drug and alcohol use	
Social context and community	Social integration Social support and isolation Community Engagement Discrimination	
Food Security	Hunger Access to healthy options	
Neighborhood and physical environment	Housing Transportation Safety/Crime Parks, playgrounds, walkability Geography Air and water quality	
Health Care System	Health coverage Provider access & quality of care	

Review of Key Points

- Segmentation frameworks can help you identify who will become (and why they become) high-need, high-cost
- Segmentation can help you determine which programs or interventions work for patients with complex needs (determine ROI for specific populations)
- Segmentation frameworks can help identify ”high-performing” healthcare providers

Thank you!

Questions?

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Point32Health

Segmentation and Stratification to Identify High Needs/High Cost Members

October 28, 2021

Overview

- Over the past two years Point 32 Health worked with Dr Jose Figueroa to develop an enterprise segmentation and stratification tool to accurately profile Medicare, Commercial, Connector, and Medicaid across five states, for newborns to members over 100 years of age, with a variety of medical and social needs

- The cornerstone of this is seven segments and twenty five sub-segments to bucket the membership into clinically meaningful groups

- A Composite Index or Clinical Complexity Score (CCS) based on utilization, chronic conditions (Medical, Mental Health, SUD) and SDoH (Social Determinants of Health) allows for comparison of complexity of need for each member

- Effort included resources from Population Health teams, Medical Directors, IT, analytics and consulting support from Cleartelligence

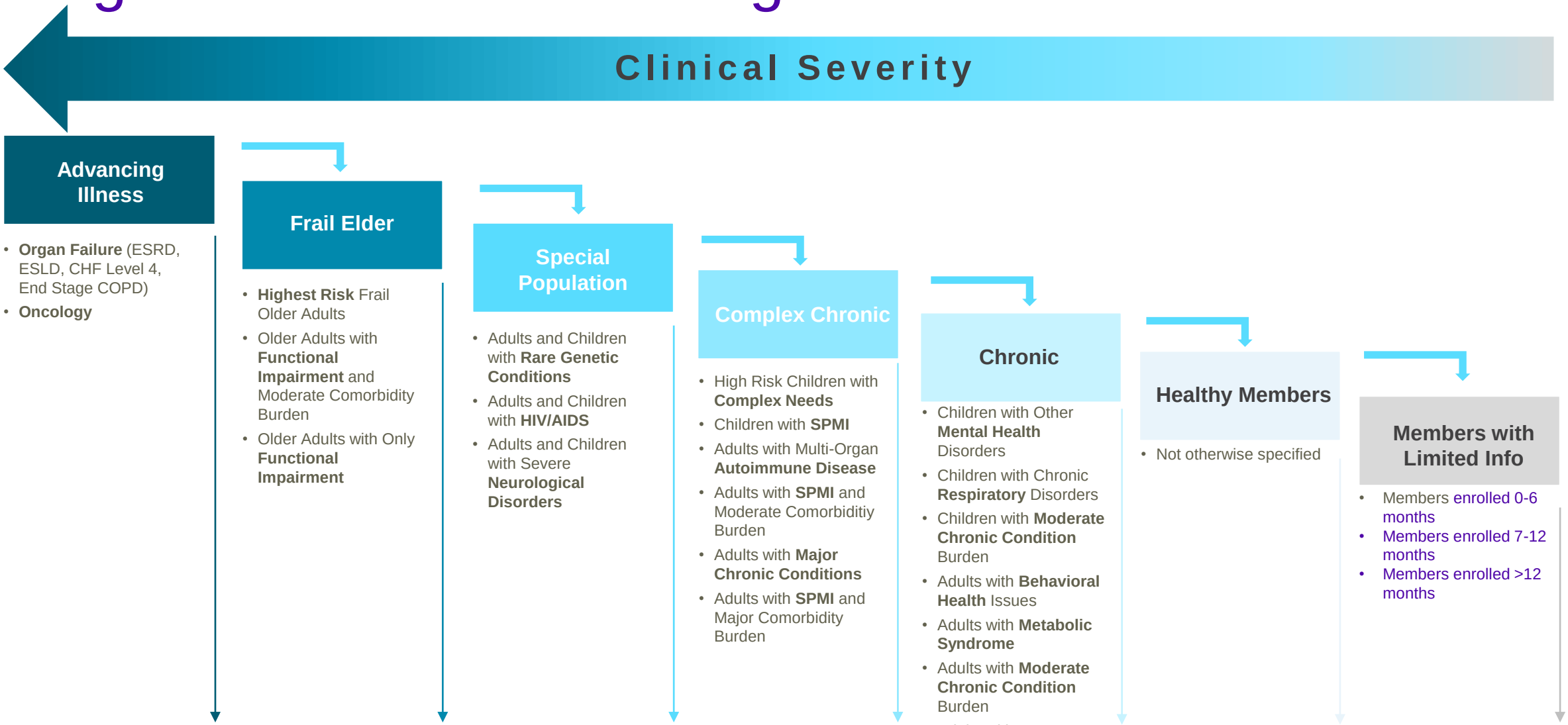
Overview of Segmentation

- The segmentation allows users to view members in terms of profile rather than a condition.

This is valuable to:

  - Identify members by need rather than a specific condition to avoid overly complex mapping and identification algorithms
  - Avoid outreach for members with more significant needs that may not be appropriate for an intervention
  - Provide clinical teams with a very concise profile of the member to give them a starting point for where to focus their efforts

Segmentation and Sub-segmentation



Overview of Stratification

- The stratification process utilizes a ten point composite index of member complexity based on utilization (observed and modelled), chronic medical and BH conditions, and identified SDOH needs to match and prioritize members for a targeted intervention

- The use of a composite index provides more context for understanding a member than a single point estimate from a black box model (e.g. risk of hospitalization or cost of treatment estimates)

- The stratification provides distilled data points to the clinical teams to support their work

- The complexity score is highly predictive of negative outcomes such as risk of readmission, high ED utilization, and high cost

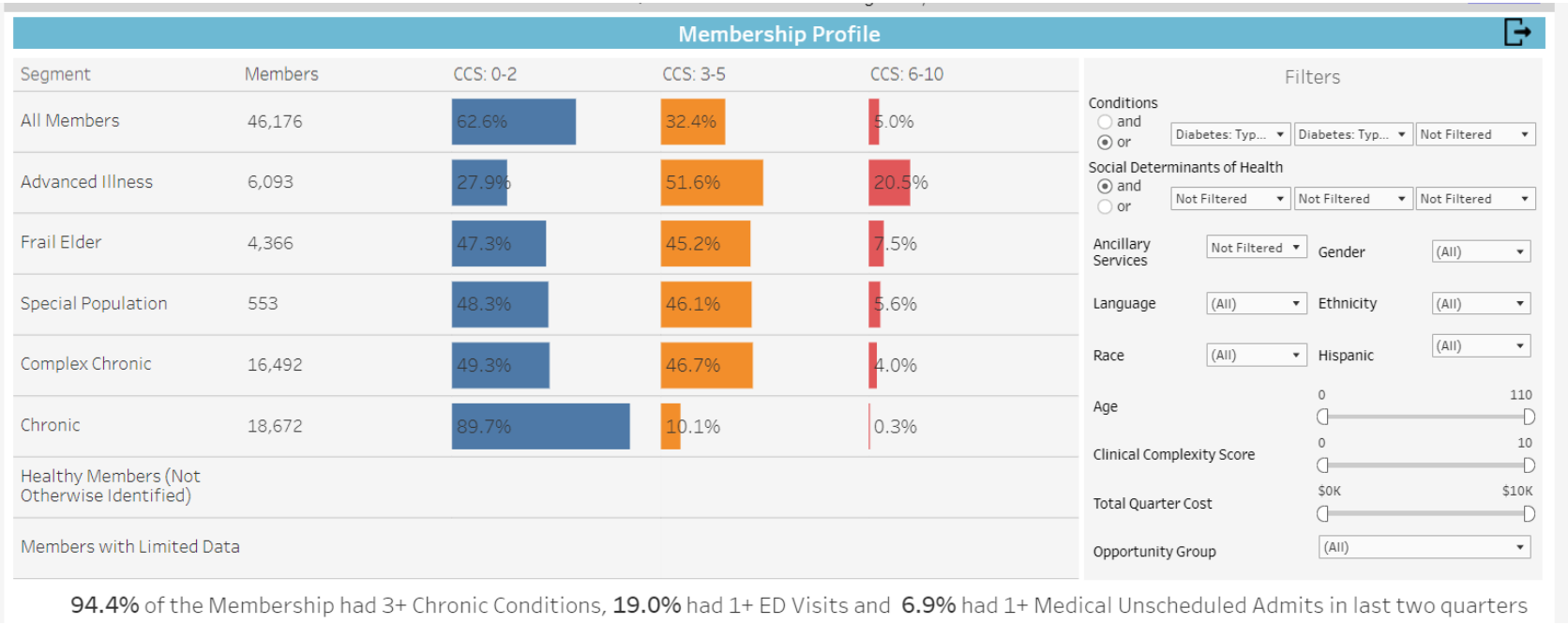
Overview of SDoH Data

- The SDoH flags are defined by the three areas that can negatively impact a member's ability to interact with healthcare
  1. **Economic or housing instability**: Most obvious SDOH flag. Research has shown economic considerations can severely impact health outcomes
  2. **Member provider communication**: Members with a REL consideration. A member who does not speak English or have a cultural difference that puts him/her at higher risk to not understand medical or Rx instructions, and suffer a negative outcomes as a result
  3. **Access limitations:** Members who may have difficulty physically getting to a location of a provider or pharmacy. Members who self-report having transportation issues, or who are dependent care givers are likely to have more difficulty physically making an office appointment for example.
- Data is aggregated from claims, State/employer reported demographics, self reported, and CM/UM reported sources

Predictive Modeling versus Member Profiling

- The Segmentation and Stratification process provides a profile of a member rather than a single point estimate for an event
- For example, a predictive model may estimate the risk of a member being high cost. This model would fail to separate out a member with an expensive but well controlled medical condition and a member with a poorly controlled chronic condition leading to avoidable ED and/or inpatient use
- Prioritization of keeping members in the preventative care setting and out of the ED/inpatient setting requires an understanding of the profile of the member

Example: Type II Diabetes – Sample population



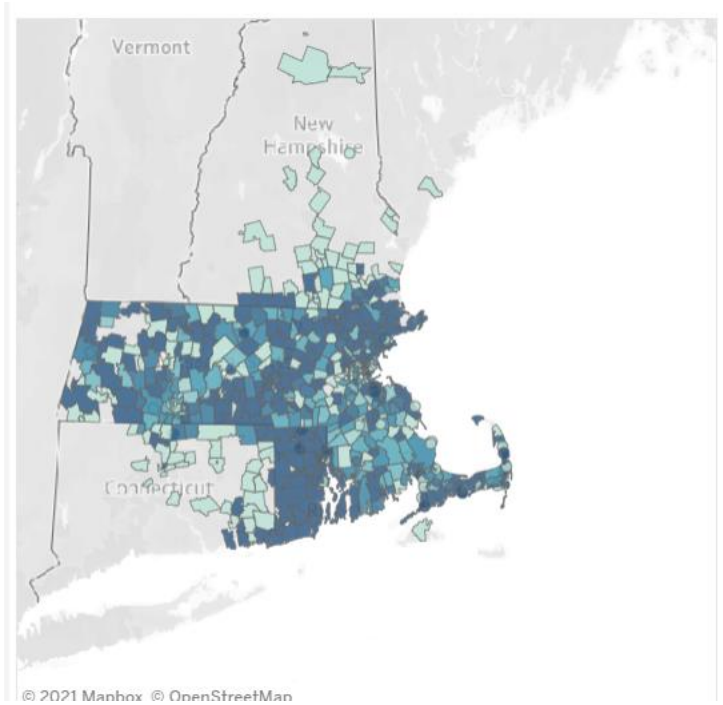
- Looking at a single chronic condition (diabetes) by segmentation show how heterogeneous a population with a condition can be
- Most expensive members are in the Advancing Illness segment. Costs are driven by end of life considerations. These members are targeted with a palliative care intervention
- Members in the Complex Chronic segment have high rates of SMI and rising cost. Complex CM programs target these members
- App based programs targets members in the Chronic Segment who have relatively low costs

Example: Segment Movement – One year window: Sample population

From	To: Advanced Illness	Chronic	Complex Chronic	Frail Elder	Healthy Members (Not Otherwise Identified)	Members with Limited Data	Special Population	Grand Total
Advanced Illness	2,715	438	1,186	748	2	2	70	5,161
Chronic	980	38,428	12,325	539	4,021	347	237	56,877
Complex Chronic	1,209	16,360	15,228	563	272	68	147	33,847
Frail Elder	761	378	478	1,638	2	3	36	3,296
Healthy Members (Not Otherwise Identified)	125	16,669	1,668	16	24,359	1,136	115	44,088
Members with Limited Data	393	12,546	2,639	66	20,742	17,955	182	54,523
New Member	216	6,213	1,425	25	9,265	23,322	121	40,587
Special Population	80	121	81	50	16	6	591	945
Grand Total	3,212	42,604	16,897	1,873	26,350	24,817	717	116,470

- The sample matrix above shows how member segment movement is tracked
- Since the pandemic began there has been an increase in the Complex Chronic segment driven largely by new SPMI diagnoses
- Members in the Limited Data segment are of increasing interest as a significant number move directly into Chronic/Complex Chronic

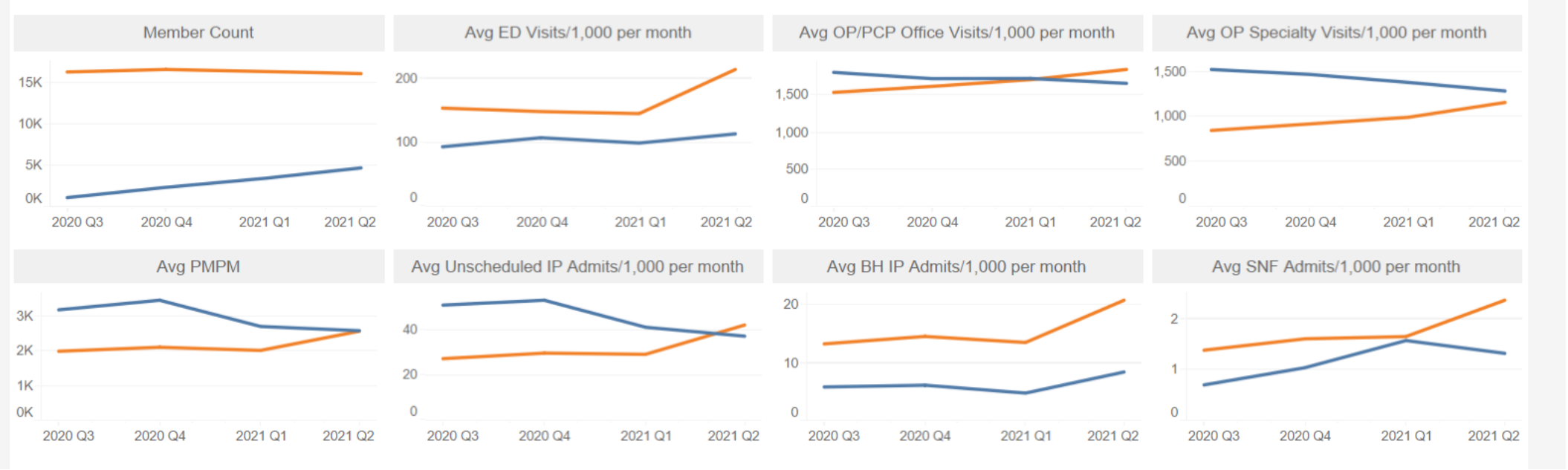
Example: COVID Vaccination Tracking: Sample Population



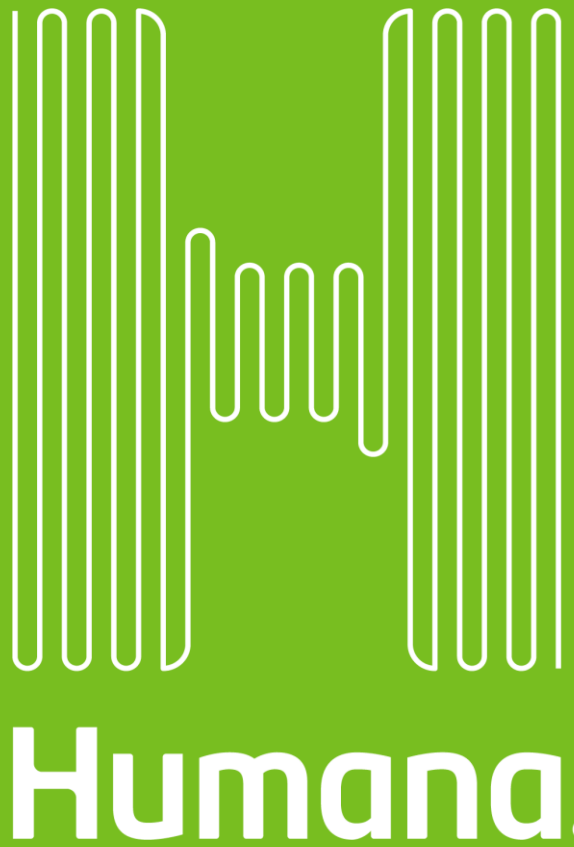
Age	Number of Chronic Conditions					
	0	1	2	3	4+	Total
19 and under	123,295 14,534 11.8%	62,513 11,159 17.9%	35,172 7,983 22.7%	20,182 5,374 26.6%	23,012 6,653 28.9%	264,174 45,703 17.3%
20-44	129,025 48,069 37.3%	45,096 25,260 56.0%	35,359 20,185 57.1%	25,536 14,539 56.9%	41,888 22,822 54.5%	276,904 130,875 47.3%
45-54	35,299 12,197 34.6%	13,854 9,079 65.5%	14,038 9,425 67.1%	12,347 8,324 67.4%	31,081 20,474 65.9%	106,619 59,499 55.8%
55-64	31,862 11,152 35.0%	12,159 8,588 70.6%	15,223 10,906 71.6%	15,885 11,489 72.3%	52,037 37,792 72.6%	127,166 79,927 62.9%
65-74	5,579 1,672 30.0%	1,665 1,163 69.8%	2,554 1,789 70.0%	3,226 2,280 70.7%	16,244 11,770 72.5%	29,268 18,674 63.8%
75-84	1,215 387 31.9%	232 154 66.4%	434 294 67.7%	675 463 68.6%	6,535 4,577 70.0%	9,091 5,875 64.6%
85+	711 103 14.5%	41 27 65.9%	84 50 59.5%	182 123 67.6%	2,714 1,829 67.4%	3,732 2,132 57.1%
Total	326,986 88,114 26.9%	135,560 55,430 40.9%	102,864 50,632 49.2%	78,033 42,592 54.6%	173,511 105,917 61.0%	816,954 342,685 41.9%

- The COVID risk matrix was used in April of 2020 to prioritize outreach for education, and again in the early stages of the vaccine roll out
- Segmentation supported the identification of members who would likely have difficulty getting to a mass vaccination location

Example: Program Evaluation: Sample Population



- To enable continuous improvement, the impact of programs are evaluated across time based on utilization metrics
- Evolving with support from Data Scientists to incorporate better matching algorithms and more advanced statistical techniques



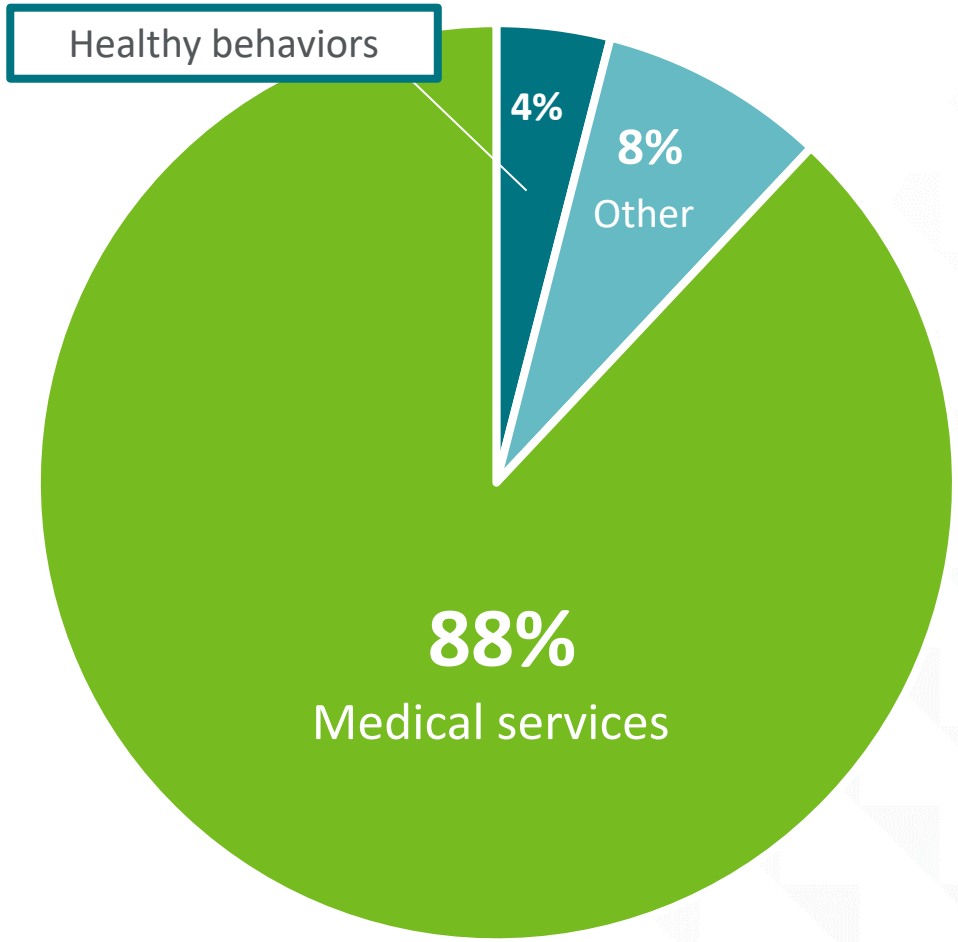
Bold Goal
Social Health Strategy

Andrew Renda, MD, MPH

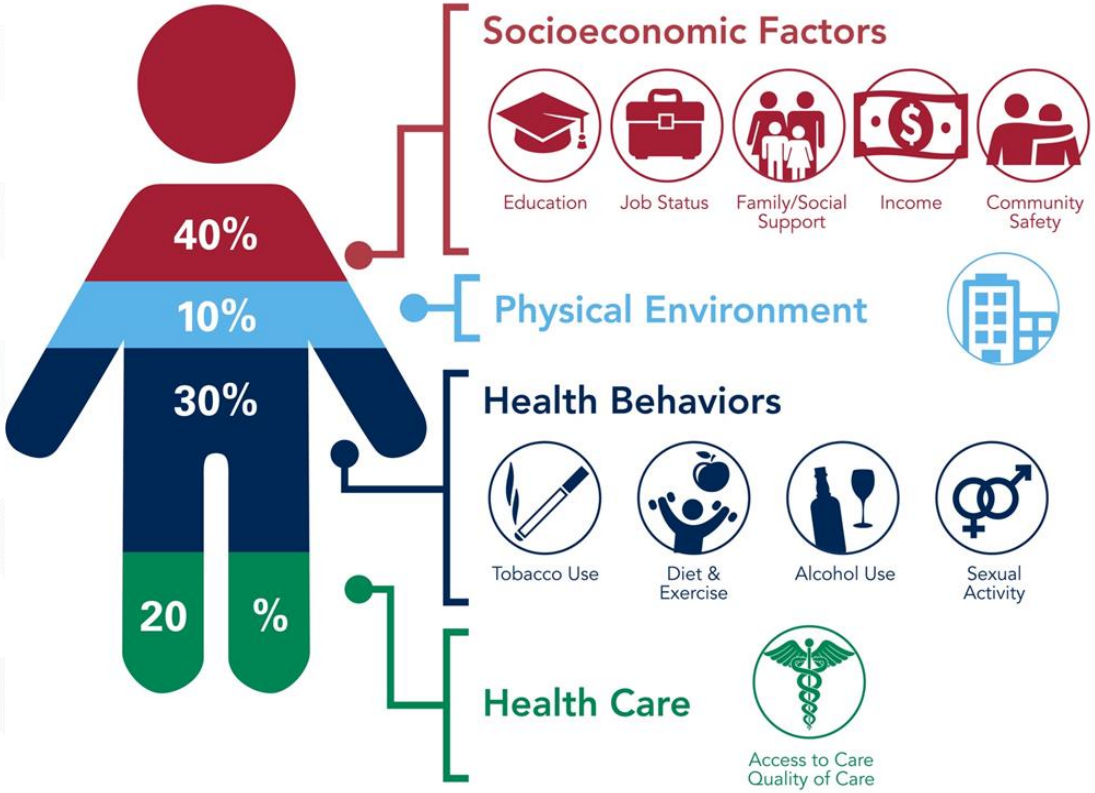
Vice President
Bold Goal and Population Health Strategy

We need to invest in the whole person

U.S. health care spend



What actually makes people healthy



Health-Related Needs and Determinants

Structural Determinants of Health

- Encompasses the **social and political** context in which one lives, works and plays
- Health inequities, structural racism, public policies, labor/employment policies, cultural values

Social Determinants of Health

- Conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks
- **Upstream influences** of poor health; i.e. living conditions, food availability, health system, social cohesion

Health-Related Social Needs

- **Immediate health-related social needs like**: food security, loneliness, transportation, and housing quality and stability
- "Health-harming conditions affecting individuals."

Humana's
BOLD GOAL

Improve the health of the people and communities we serve by making it easier for everyone to achieve their best health

Humana set a Bold Goal to improve the health of the people and communities we serve by making it easier for everyone to achieve their best health

NO KID HUNGRY · MOM'S MEALS · UNIVERSITY of HOUSTON · Volunteers of America · Coalition to End Social Isolation & Loneliness · FAR from ALONE · MILKEN INSTITUTE

FEEDING AMERICA · BOYS & GIRLS CLUBS OF AMERICA · United Way · MARCH OF DIMES · papa · siren

MEALS ON WHEELS AMERICA · THE ROOTCAUSE COALITION · Quantified Ventures · de Beaumont · Institute on Aging · gravity PROJECT

It's part of our DNA

- Expanded to 16 communities in 2020
- 3.5 million SDOH screenings in 2020
- 816,000 more Healthy Days for our MA members in Bold Goal communities in 2019
- Launched strategic academic partnerships throughout 2020 supporting the physician of tomorrow
- Delivered over 1.1 million meals from March 2020 through end of year as a response to COVID-19

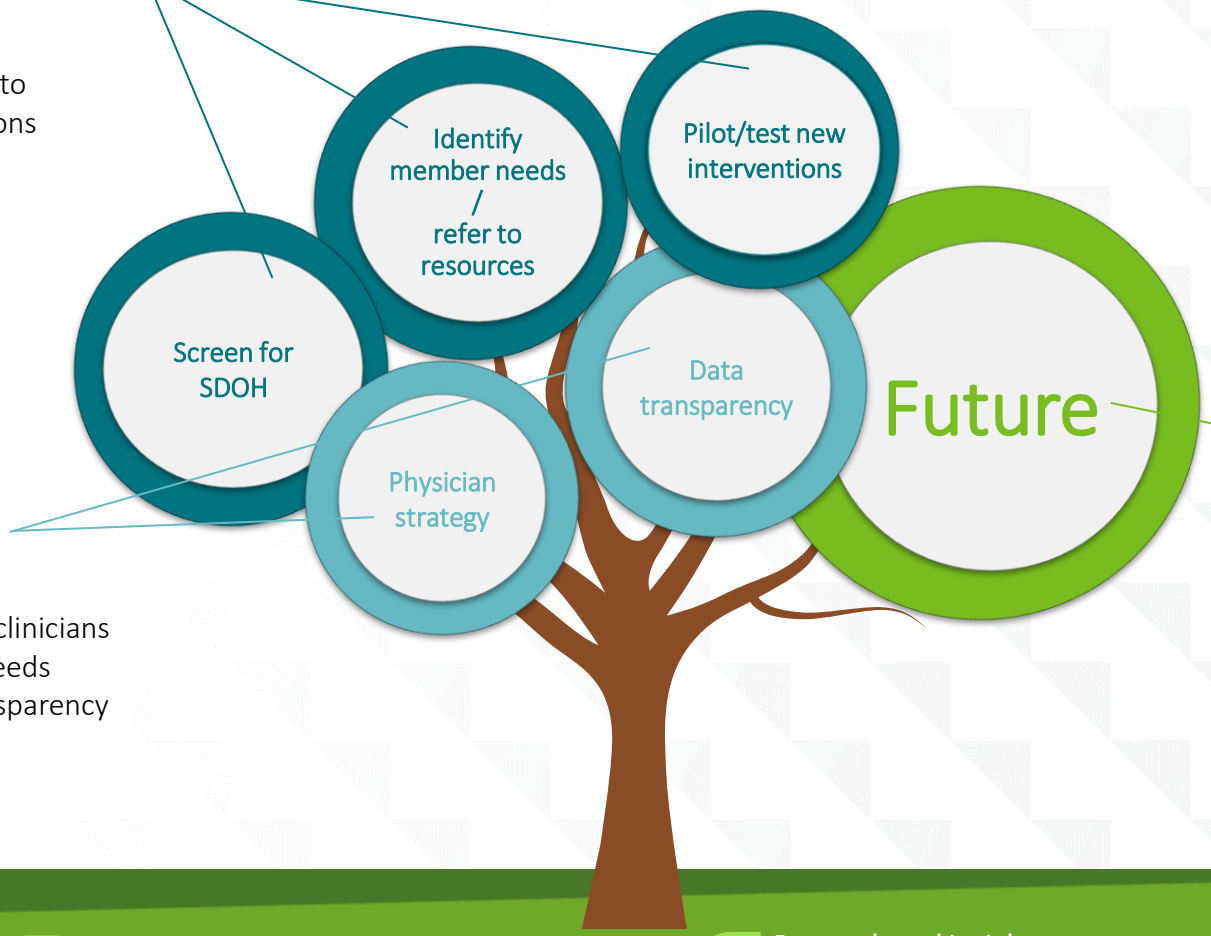
Our growth toward operational maturity

Ongoing

SDOH Screenings / Test and Learn

- Screen members for SDOH
- Design and implement pilots to identify successful interventions

*The core promise of SDOH interventions is to drive value by **improving health outcomes**, however, they may also support **growth** and **improved experience.***



Foundational

Table Stakes

- Integrate and support physicians/clinicians to address health-related social needs
- Provide internal and external transparency into social health needs

Long Term

Scaling and Operationalizing

- Prove results on Test and Learns
- Scale successful interventions through:
  1) Integration into clinical, quality and business operating models
  2) Build into member plan benefits

Data and Analytics

Data on health-related social needs helps us identify member outreach

Research and Insights

Research and insights on our members' social health needs help us identify/test interventions

SDOH Data and Analytics Ecosystem

DATA ACQUISITION

Member

- Claims
- Provider Network
- Clinical Programs
- Utilization
- Financials
- Pharmacy
- Wellness
- Devices

Community

Social Determinants of Health datasets

- Public
- Consumer (Purchased)

SDOH Screenings

- Social Isolation
- Food Insecurity
- Transportation
- Housing
- Financial Strain
- Access to Care
- Neighborhood Safety etc.

NLP to Mine Unstructured Text

BULDING DATA PRODUCT

BUSINESS RULES

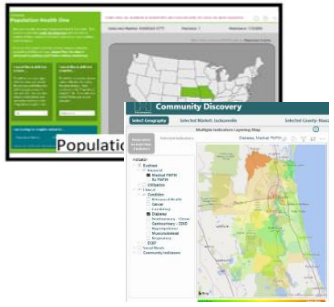
DATA GOVERNANCE

CLOUD DATA MODERNIZATION

AI AND ANALYTIC PLATFORMS

SDOH DATA PRODUCTS AND ANALYTICS

Pop Health One



AI models

Predictive Models

Transportation
Loneliness
Food Insecurity
Housing Insecurity
Financial Strain

API Strategy

OPERATIONALIZE SDOH

ADDRESSING SOCIAL NEEDS

Build pilots and interventions

OPERATIONAL MATURITY

API's deliver real-time insights at the point of care

AI RECOMMENDATIONS

Focused recommendations

BUSINESS IMPACT

- ✓ Data that identifies needs, gaps and opportunities
- ✓ Insights to drive an improved experience
- ✓ Measures that prove the value of engagements

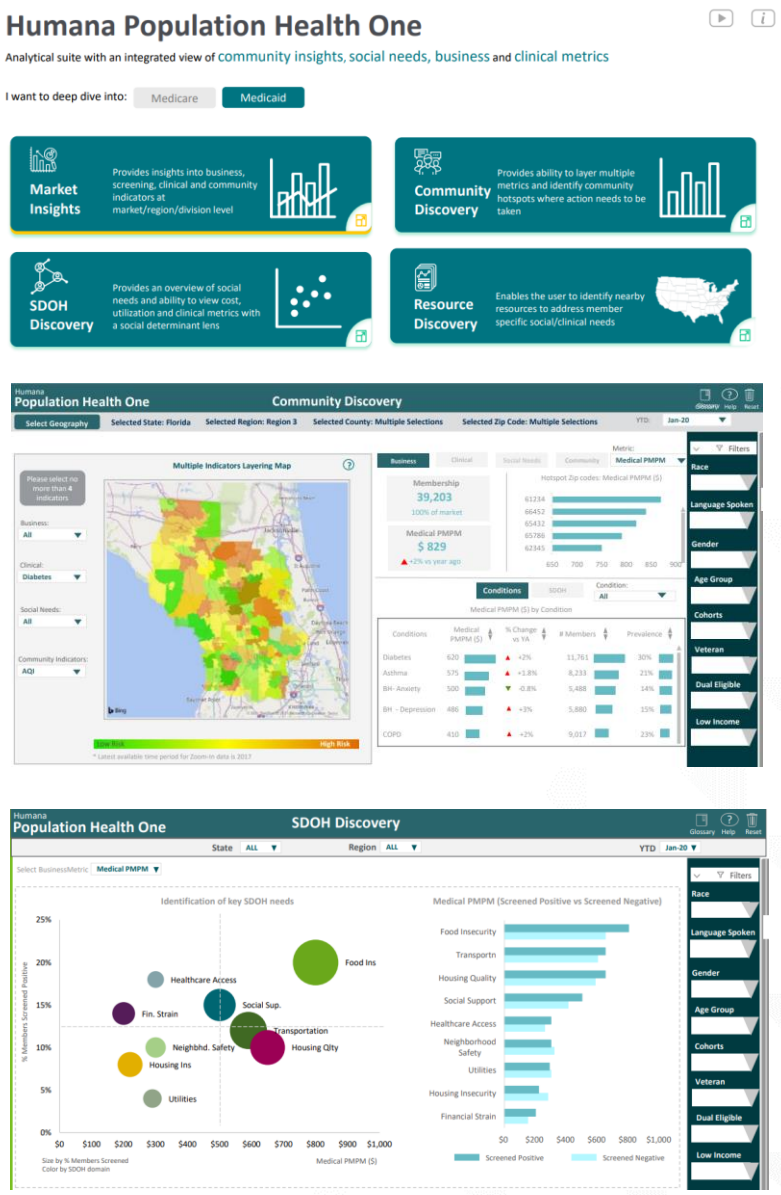
Health-related social need prevalence in Humana populations

Five health related social needs have been designated as priorities; each is widely prevalent and associated with a pronounced impact on health

Priority Medicare Health-Related Social Needs	Prevalence, Humana MA Members, *2020*[5]	Unhealthy Days impact per 30-day period[2]	Increased PMPM Cost Associated with HSRN[1]	Additional Health Risks & Supporting Data[2]
Loneliness/ social isolation	29%	1.01	42%	• **+64%** more likely to develop clinical dementia • **+29%** increase in risk of premature death due to social isolation
Food insecurity	26%	0.85	52%	• **+50%** more likely to be diabetic • **+60%** more likely to have Congestive Heart Failure
Housing quality	21%	0.80	25%	• **4 per minute** rate of evictions in 2016 for a total of 2.3 million[4]
Financial strain	41%	0.52	54%	• **55%** of Humana MA members who screened positive for financial strain are food insecure; **33%** have housing quality issues; **48%** are lonely
Non medical transportation	10%	N/A	54%	• **3.6 million:** number of Americans who do not obtain medical care due to transportation barriers[3]

[1] Source: Baseline comprehensive survey of MA individual members, October 2019-February 2020 (No exclusions: members may have other Health Related Social Needs) – claims lookback in 2019; [2] Sources: https://populationhealth.humana.com/social-determinants-of-health/; https://populationhealth.humana.com/policy-briefs/; [3] Sviokla et al. 2010 ; [4] Sources: Humana_HousingBrief_Final_External_version_2020.pdf; [5] Humana internal analysis, pre-publication

Population Health One



Capabilities

- Identify **hot-spot zip codes** and **high-risk members** who needs intervention
- Ability to look at KPIs thru **health equity and health disparities lens** (race, gender, veteran, duals, disability etc.)
- Advanced **AI/ML capabilities** to identify potential bold goal markets and predict SDOH needs
- Integrated view of **150+ KPIs** in single solution
- **Multi-dimensional view of a member** with Cost, Utilization, condition, social and community

Scaling food insecurity

2015

Humana's Bold Goal Launched

Focused on food insecurity due to high prevalence of Unhealthy Days

2016

Early Learnings pilot 500+ people screened for food insecurity, 46% screened positive with 2x as many unhealthy days
Broward County, FL

2017

Physician Screening & Referral Toolkit created

2018

Developed food insecurity predictive model

Integration of food insecurity and other social need screenings into clinical model/programs

2019

Partnered with Meals on Wheels America for post-discharge meal and Friendly Visitor benefit

Supporting development of three food insecurity quality measures and implementation guide

2020

Healthy Foods Card benefit launched to address food insecurity and financial strain

Established partnership with No Kid Hungry

SDOH Value-Based Payment model launched

In 2020, Humana's Basic Needs Program provided more than 1.1 million meals to at-risk members during COVID-19

2021

6+ MILLION social need screenings

Expanded post-discharge food insecurity benefit filed in 2020 for 2021 benefit year

Driving the business case through thought leadership

OliverWyman

TRANSFORM CARE ENGAGE CONSUMERS DRIVE INNOVATION MAXIMIZE VALUE

ENGAGE CONSUMERS INFOGRAPHICS APRIL 22, 2021

Humana's Bold SDOH Strategy

Lessons Learned and Future Visions

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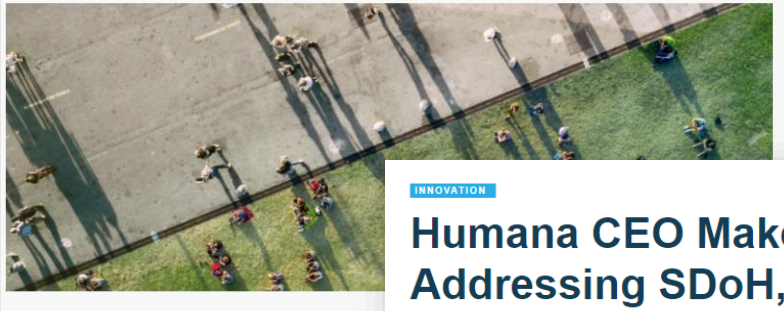


As the largest provider of health plan services to the Medicare Advantage population, Humana helps millions of vulnerable individuals get access to healthcare. In recognition of the key role Social Determinants of Health (SDOH) play in successfully treating health conditions, Humana has launched the Bold Goal initiative. This population health strategy aims to improve the health of the people and communities we serve by making it easier for everyone to achieve their best health by addressing the root causes of health disparities.

INNOVATION

Humana CEO Makes Case for Addressing SDoH, Investing in Home-Based Care

By **Andrew Donlan** | September 2, 2020

Share

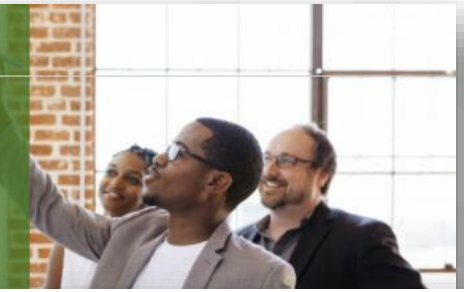
Bruce Broussard joined Humana Inc. (NYSE: HUM) as its president and CEO in 2011. Since then, he has helped steer the Louisville, Kentucky-based company toward a future that's largely focused on "the home" and social determinants of health (SDoH).

Humana has made several moves in those two areas, especially in recent years. They include its acquisitions of Kindred at Home and Curo Health Services, in addition to a lengthy list of pilot programs with innovative organizations such Papa, SilverSneakers and others.

Most recently, in July, Humana announced plans to invest $100 million in the at-home primary care startup Heal.

Humana

Issue Briefs: Bringing insights to the industry



Policy Briefs, released quarterly, support Humana's Social Determinants of Health initiatives throughout the enterprise and further the strategy to influence population health focused policy change.

August 2021

Social Determinants of Children's Health Issue Brief

BOLD GOAL
POPULATION HEALTH STRATEGY
OFFICE OF HEALTH AFFAIRS AND ADVOCACY

The intent of this brief is to increase knowledge and inform our stakeholders of opportunities to address social determinants of health, a core function of Humana's Bold Goal, Population Health Strategy. Our Bold Goal is dedicated to improving the health of the people and communities we serve by making it easier for everyone to achieve their best health.

Humana
Healthy Horizons

PopulationHealth.Humana.com
#MoreHealthyDays

Thank You

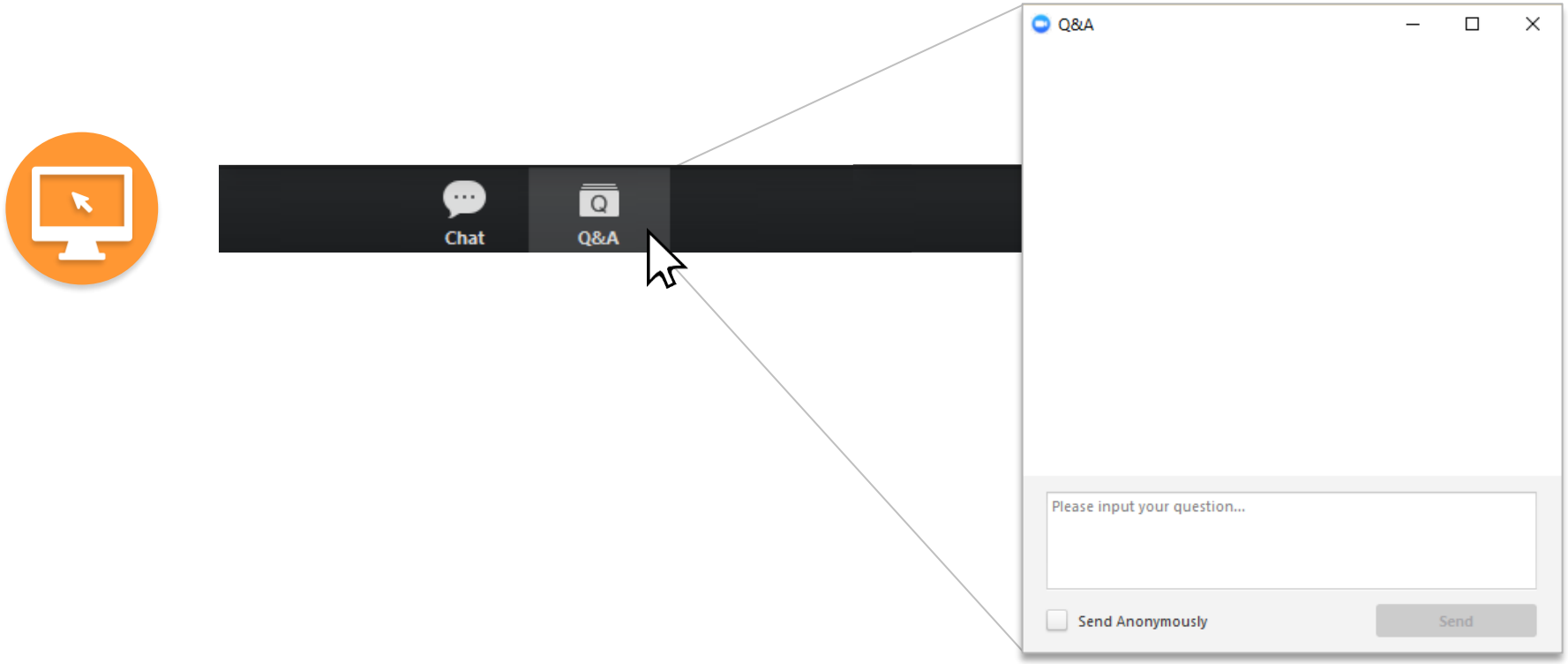
Humana has many resources available for patients, providers and other stakeholders, to address social determinants of health. Please visit our population health website at Humana.com/populationhealth.

Humana®

Question & Answer

Questions?

- To submit a question, click the Q&A icon located at the bottom of the screen.



Linked Resources

- High-Need, High-Cost Segmentation Framework
- Playbook webinar: Using Population Identification Strategies to Tailor Care for Individuals with Complex Needs
- NYC Health and Hospitals: Operational Guide to Identify, Understand, and Treat High-Need Patients

Share Your Successes on the Playbook

Have you established a promising practice?

Published a study about your complex care program?

The Playbook welcomes content submissions to help spread best practices in complex care.

BetterCarePlaybook.org/submit

the Playbook

Better Care for People with Complex Needs

Thank you!

Please submit your evaluation survey.