A BOLD GOAL:

Addressing Social Determinants & Improving Health in an Aging Population

Amit Parulekar
Corporate Strategy Lead, Office of Population Health, Humana
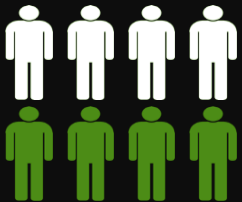
Our aging population is facing unique health challenges:

10,000 people are enrolling in Medicare each day.

By 2050, the number of people over 65 will double to **83.7** million

Diabetes

Depression

Food insecurity

Loneliness

DIFFERENT INVESTMENTS.
SIMILAR OUTCOMES.

11%
GDP

LIFE EXPECTANCY
80.9

17.9%
GDP

LIFE EXPECTANCY
80

[Health Affairs, "National Health Care Spending In 2016: Spending And Enrollment Growth Slow After Initial Coverage Expansions]
http://health.gov.ie/publications-research/statistics/statistics-by-topic/health-expenditure/; CIA World Factbook

MAINTAINING GOOD HEALTH IS DIFFICULT.

WHAT WE SPEND *VS.*
WHAT ACTUALLY MAKES US HEALTHY

What the U.S. spends

8%
4%
88%
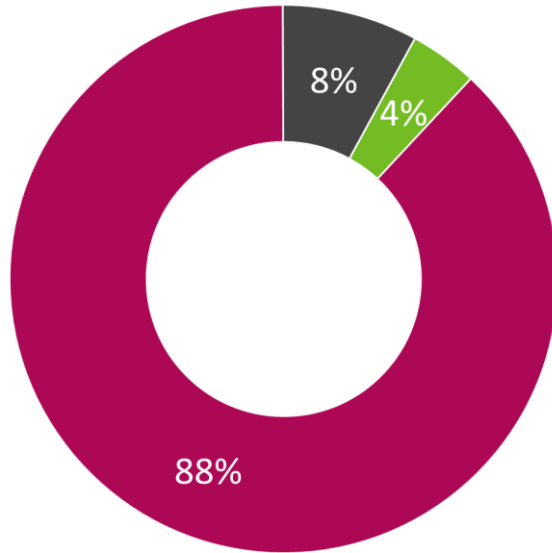
- Medical Services
- Other
- Healthy Behaviors

What actually makes people healthy

20%
20%
10%
50%
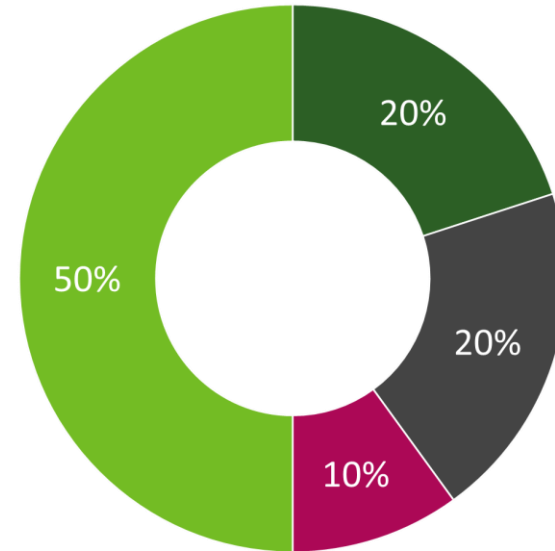
- Healthy Behaviors
- Genetics
- Environment
- Access to care

We are more than a health insurance company.

We want to be leaders in population health.

HEALTH IS AN ECOSYSTEM

Access to healthcare

Diabetes

Medications

Depression

Asthma

Primary care physician

Person

Community

Physical activity

Access to good food

Loneliness

Social isolation

Air quality

Looking inside and outside the clinical setting.

MEASURING PROGRESS WITH HEALTHY DAYS

1 In the last 30 days, how many days have you physically not been well?

2 In the last 30 days, how many days have you mentally not been well?

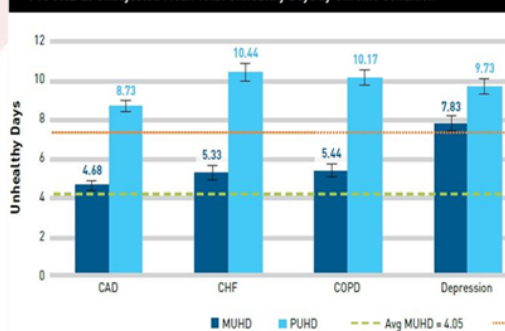**PHYSICALLY UNHEALTHY DAYS** + **MENTALLY UNHEALTHY DAYS** = **TOTAL UNHEALTHY DAYS**

RESEARCH INSIGHTS DRIVE OUR FOCUS

HD and Chronic Conditions

FIGURE 2. Unadjusted Mean Total Unhealthy Days by Chronic Condition*

HD and Quality Metrics

Measure Type	Measure	Eligible, N	Noncompliant, n	Incremental PUHD, Mean	Incremental MUHD, Mean
HEDIS, Diabetes	Eye exam	8458	2814	1.13	0.87
	A1C control (<9)	8458	2171	1.04	0.78
	LDL-C control (<100)	8458	3766	0.74	0.94
	LDL-C screening	8503	715	2.23	1.30
	Nephropathy screening	8458	704	0.98	0.08

Addressing Social Determinants of Health
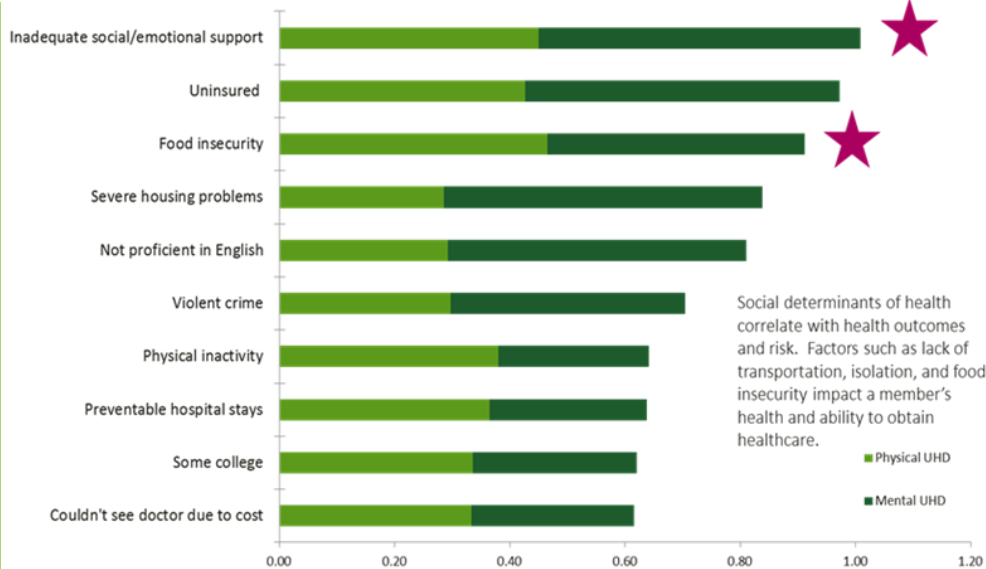
Social determinants of health correlate with health outcomes and risk. Factors such as lack of transportation, isolation, and food insecurity impact a member's health and ability to obtain healthcare.

Magnitudes of Unhealthy Days change if improving SDOH from 75th to 25th percentile

High Tech + High Touch Approach

We must have a comprehensive health care strategy.

INVEST

in long-term relationships with key stakeholders to improve population health.

BUILD

a health care ecosystem that connects patients, providers, payers, and community resources more efficiently and effectively.

CREATE

advanced analytics and data interoperability to anticipate care gaps, triage patients and coordinate care.
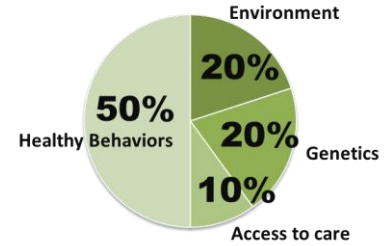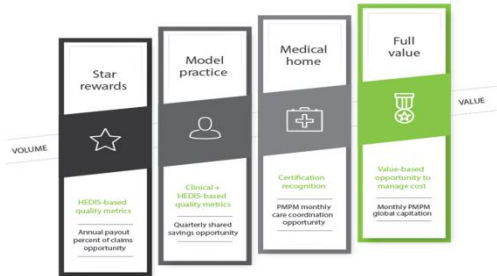
INVEST:

CONSUMER EXPERIENCE

WHAT ACTUALLY MAKES PEOPLE HEALTHY

PATIENT

Environment
20%

50%
Healthy Behaviors

20% Genetics

10%

Access to care

VALUE-BASED CARE

TOOLS AND RESEOURCES

CLINICIANS

VOLUME

Star rewards

HEDIS-based quality metrics

Annual payout percent of claims opportunity

Model practice

Clinical + HEDIS-based quality metrics

Quarterly shared savings opportunity

Medical home

Certification recognition

PMPM monthly care coordination opportunity

Full value

Value-based opportunity to manage cost

Monthly PMPM global capitation

VALUE

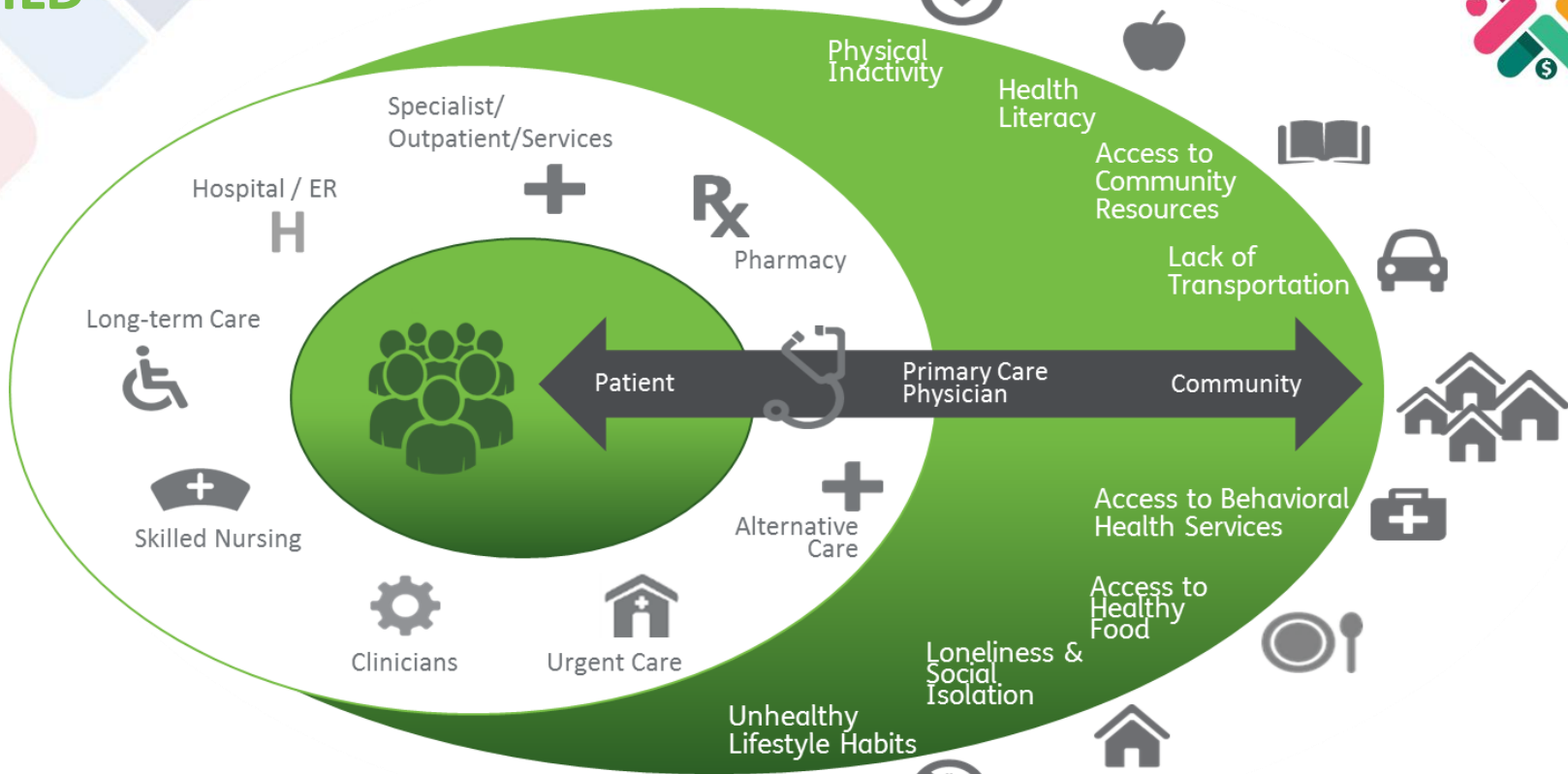Food Insecurity & Health
A toolkit for Physicians and Healthcare Organizations

Nonprofit organizations

Government leaders and agencies

Community members

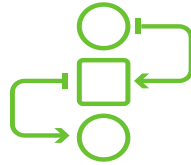Physicians and clinicians

For-profit companies

COMMUNITY

Advanced analytics and SDOH data

Segmentation, predictive models, artificial intelligence

Integrate into the workflow solutions to share insights to improve outcomes

Platform technologies and resources

BUILDING A SOCIAL DETERMINANTS DATA ECOSYSTEM

Loneliness/Isolation

- Social associations
- Household compostion
- Homelessness
- Investment security
- Marital status
- Proximity to clinics
- Public library locations
- Pet ownership
- Crime rate

Physical Inactivity

- Location of gyms
- Access to hiking trails

Food Insecurity

- SNAP benefits received
- Unemployment
- Poverty status
- Economic history
- Home ownership
- Veteran status
- Cost of living
- Food banks
- Availability of healthy foods

Transportation

- Access to public transportation
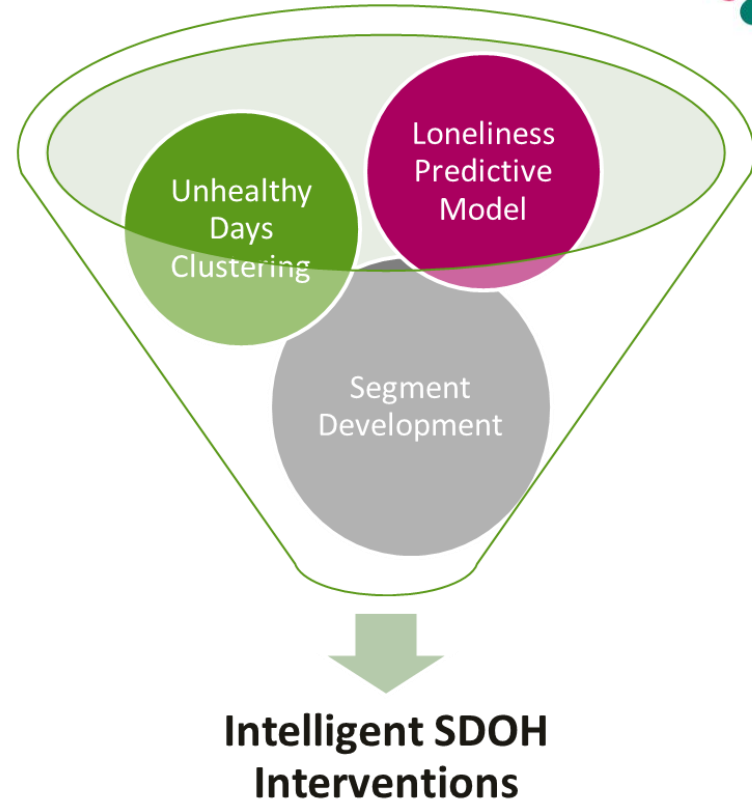- Traffic accidents

NOT EXHAUSTIVE

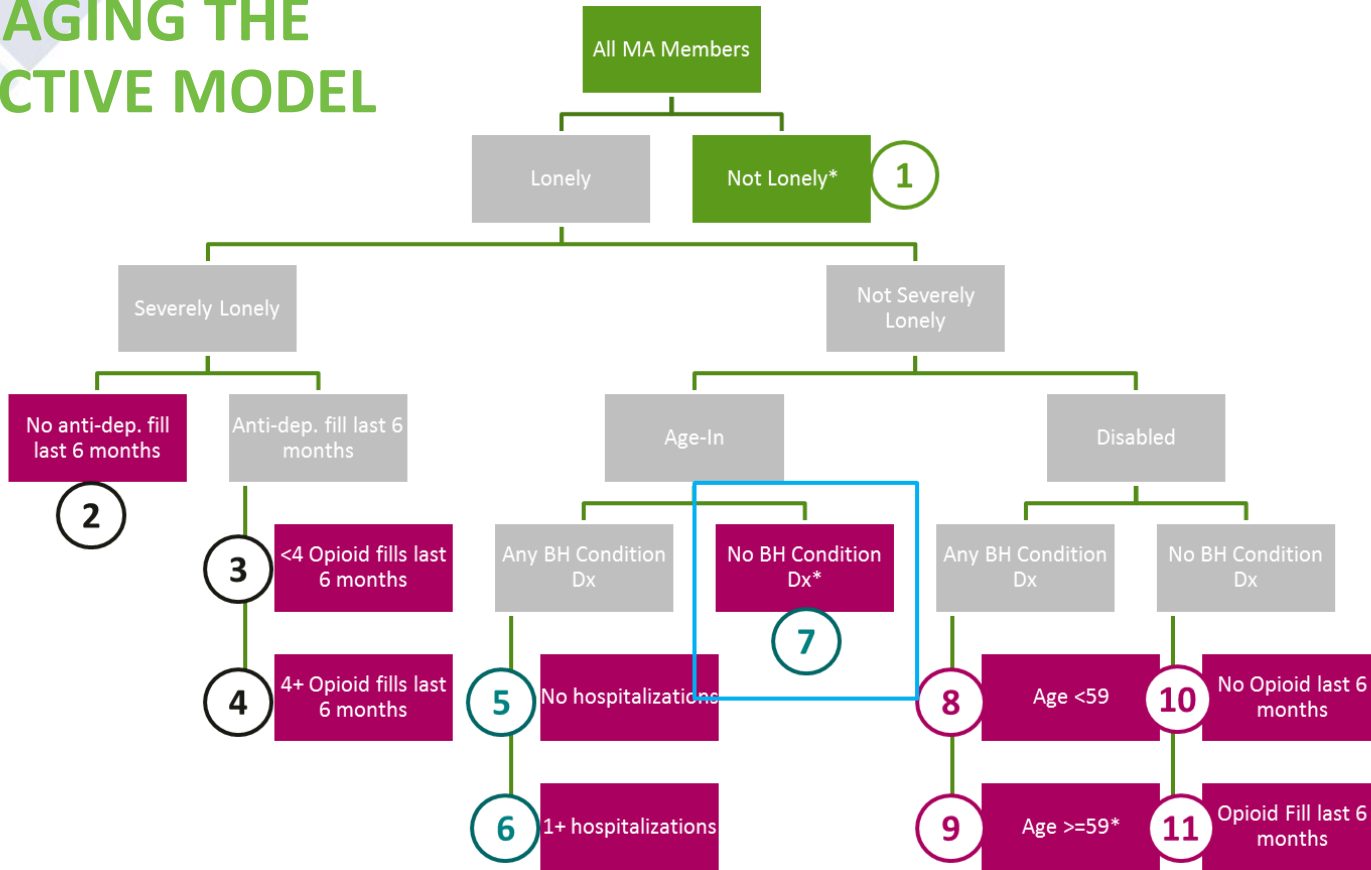# USING ADVANCED ANALYTICS TO UNDERSTAND OUR MEMBERSHIP
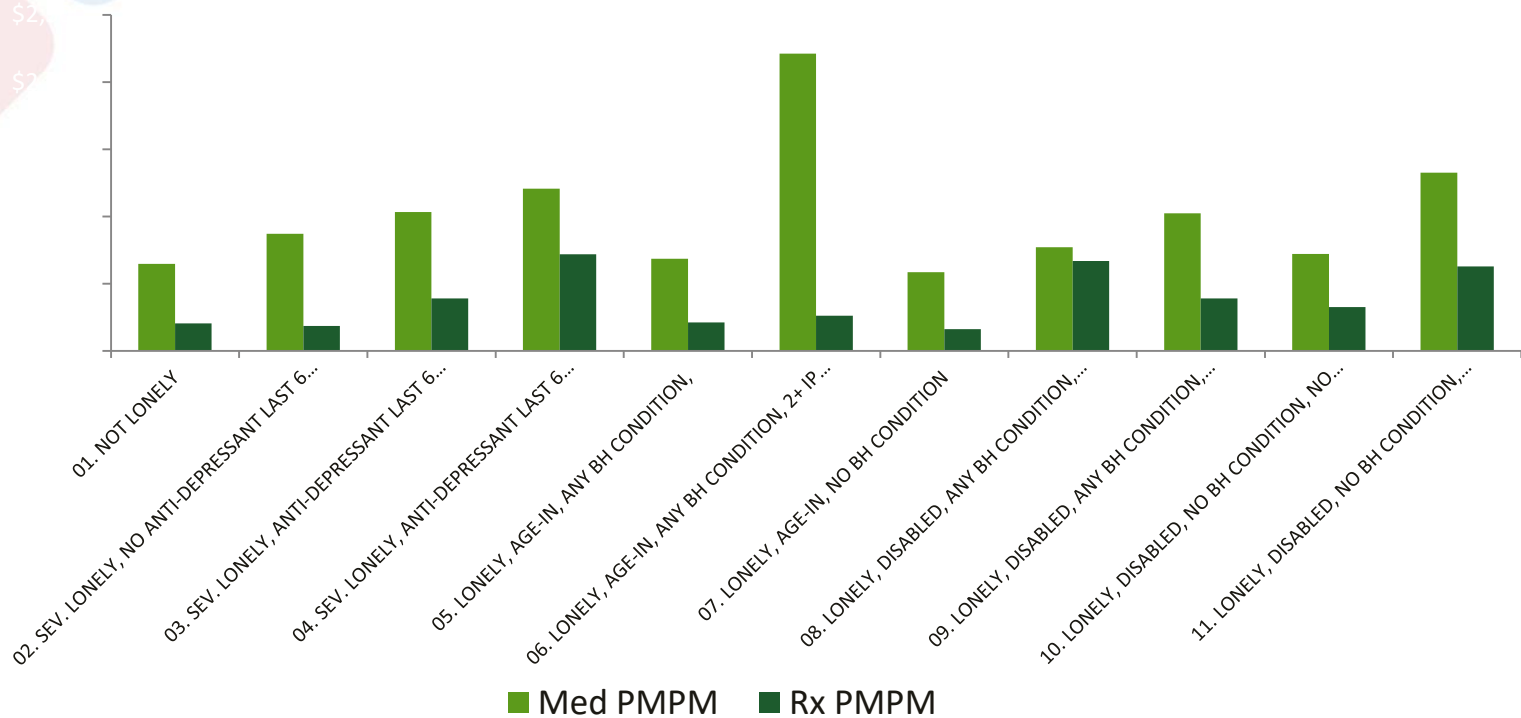
Loneliness Predictive Model

Leveraging Healthy Days data, the loneliness predictive model, and administrative data attributes, Humana is uniquely positioned to identify key segments that can be intervened with using appropriate interventions that meet members where they are.

Unhealthy Days Clustering

Loneliness Predictive Model

Segment Development

Intelligent SDOH Interventions

LEVERAGING THE PREDICTIVE MODEL

All MA Members

Lonely

Not Lonely* (1)

Severely Lonely

Not Severely Lonely

No anti-dep. fill last 6 months (2)

Anti-dep. fill last 6 months

(3) <4 Opioid fills last 6 months

(4) 4+ Opioid fills last 6 months

Age-In

Disabled

Any BH Condition Dx

No BH Condition Dx* (7)

Any BH Condition Dx

No BH Condition Dx

(5) No hospitalizations

(6) 1+ hospitalizations

(8) Age <59

(9) Age >=59*

(10) No Opioid last 6 months

(11) Opioid Fill last 6 months

SOCIAL ISOLATION AND LONELINESS PREDICTIVE MODEL

Legend: Med PMPM, Rx PMPM

Categories:
- 01. NOT LONELY
- 02. SEV. LONELY, NO ANTI-DEPRESSANT LAST 6...
- 03. SEV. LONELY, ANTI-DEPRESSANT LAST 6...
- 04. SEV. LONELY, ANTI-DEPRESSANT LAST 6...
- 05. LONELY, AGE-IN, ANY BH CONDITION,
- 06. LONELY, AGE-IN, ANY BH CONDITION, 2+ IP ...
- 07. LONELY, AGE-IN, NO BH CONDITION
- 08. LONELY, DISABLED, ANY BH CONDITION,...
- 09. LONELY, DISABLED, ANY BH CONDITION,...
- 10. LONELY, DISABLED, NO BH CONDITION, NO...
- 11. LONELY, DISABLED, NO BH CONDITION,...

LEVERAGING THE PREDICTIVE MODEL

Loneliness Segment	Loneliness Sub-Segments	% of 11k Surveyed	% of 232k Predicted	Difference (Pred./Surv.)
	All members	100%	100%	1.0
	Not lonely	62.3%	66.4%	1.1
Severely Lonely	No anti-depressant fill in last 6 months	4.4%	1.7%	0.4
	Anti-depressant fill last 6 months, <4 opioid fills last 6 months	3.2%	3.1%	1.0
	Anti-depressant fill last 6 months, 4+ opioid fills last 6 months	1.2%	1.8%	1.5
Lonely (Age-in)	BH Dx and <1 hospital admits last 90 days	6.7%	8.4%	1.3
	BH Dx and 1+ hospital admits last 90 days	1.6%	0.8%	0.5
	No BH Dx	11.2%	3.2%	0.3
Lonely (Disabled)	BH Dx and Age <59	1.6%	2.5%	1.5
	BH Dx and Age 60+	4.0%	5.8%	1.4
	No BH Dx and 0 opioid fills in the last 6 months	2.3%	3.9%	1.7
	No BH Dx and 1+ opioid fill in the last 6 months	1.5%	2.3%	1.5

INTEGRATING TECHNOLOGY & ANALYTICS IN WORKFLOWS

Develop and Train on Social Determinants of Health

Screen and offer community resources

Integrate into Clinical Review Process

Track and Report Success

Leverage Clinical Expertise of Internal Pharmacist and Nursing teams

Develop Partnerships

➢ Humana Pharmacy
➢ Clinical Operations

Leverage Member Segmentation and Predictive Model

BEHAVIORAL HEALTH PATHWAYS

Member Pathways

How do members get into Humana Behavioral Health?

Referred by self, primary care physician, or Humana medical partners

Presenting for a **facility**-based level of care or a **crisis call**

Identified in rounds with Humana Medical Counterparts

Entry Points

TASK

Task in CGX to:
HBH REFERRALS
*use template below to fill out the task

PHONE

(866) 900-5021

Humana internal use only
Members may call the number on the back of their card

EMAIL

Email if you do not have CGX access to:
BehavioralReferrals@humana.com
*use template below to fill out the email

TEMPLATE

1. Requested intervention:
2. Behavioral issue present during contact (describe), including that there is **no** immediate risk of harming self/others:
3. BH diagnosis (if any):
4. Preferred member contact time and number:

SEVERITY AND/OR COMPLEX BH NEEDS

When To Refer

Common referral conditions from rounds to risk assessment for behavioral needs

- Addiction/SUD treatment
- Member crisis but no immediate risk
- Serious Mental Illness (SMI)
- Eating Disorders
- Pregnancy or recent birth complicated by BH needs
- Consultation on appropriate level of care
- Special needs population - BH treatment needed
- BH symptoms complicating a chronic physical health condition
- BH symptoms significantly affecting daily life
- Psychiatric evaluation needed
- Early indicators of BH symptoms
- BH provider access issue

What resources can help?

Loneliness Resource Guide

Are you feeling lonely? You're not alone.

Resources to help fight loneliness & social isolation

Feeling lonely? You're not alone.

If you're feeling lonely, you're not alone. Anyone can feel lonely. Did you know that it's common to experience feelings of loneliness even when surrounded by friends and family? Or that feeling lonely can be as dangerous for your health as smoking 15 cigarettes a day?[1] That's why it's important for you to know, no matter your situation, there are things you can do to get the help you need.

How to use your resource kit

This resource kit is designed to help you on your journey to feeling connected and healthy, with vital information, tools, and resources you need right at your fingertips.

Inside, you'll find four sections organized with information, useful tips, and resources that may help make your life easier.*

* Remember, this communication doesn't guarantee benefits and doesn't indicate all services received will be covered by your plan. Please refer to your Evidence of Coverage or call Customer Service at the number on the back of your insurance ID card to confirm that the service will be covered by your plan.

GHHJWZPEN

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A SIMPLE WAY TO FIND OUT IF A MEMBER IS LONELY

Use the validated UCLA three question loneliness screener (below). If a patient's response to any of these questions is *Some of the time* or *Often*, they are experiencing loneliness.

1. How often do you feel that you lack companionship?

   Hardly ever/Some of the time/ Often

2. How often do you feel left out?

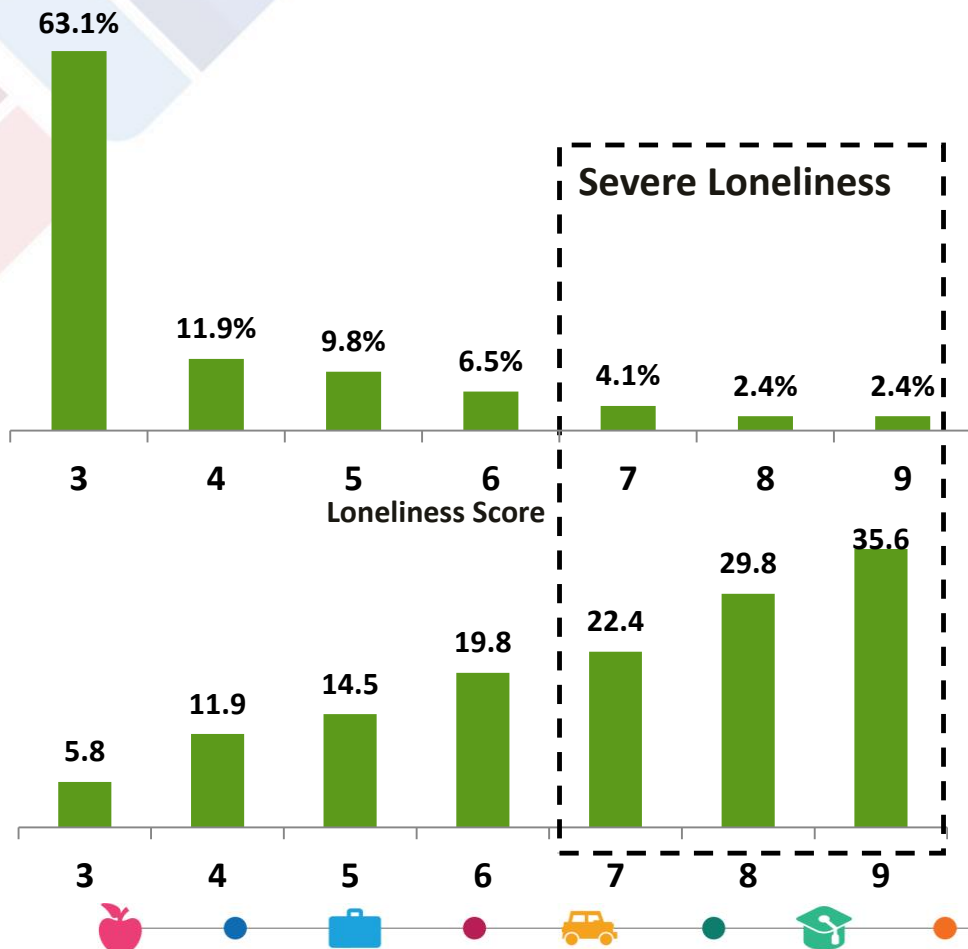   *Hardly ever/Some of the time/ Often*

3. How often do you feel isolated from others?

   Hardly ever/Some of the time/ Often

Mary Elizabeth Hughes, Linda J. Waite, Louise C. Hawkley, John T. Cacioppo: A Short Scale for Measuring Loneliness in Large Surveys: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2394670/

LONELINESS SURVEY DATA

Severe Loneliness

63.1%
11.9% 9.8% 6.5% 4.1% 2.4% 2.4%

3 4 5 6 7 8 9
Loneliness Score

35.6
29.8
22.4
19.8
14.5
11.9
5.8

3 4 5 6 7 8 9

Key Findings:

Loneliness scores were correlated with unhealthy days.

37% of Humana members were lonely.

9% of Humana members were severely lonely. (Loneliness score 7-9)

WHAT TYPE OF INTERVENTIONS CAN HELP PATIENTS?

Resources or programs that include:

- Making a new connection

- Maintaining existing relationships

- Building confidence

- Increasing their value or purpose

- Cognitive therapy (i.e. mindfulness)

- Learning a new skill

- Interaction with younger generations

- Education - focus on goals and achievement

- Volunteering

- Physical activity

SHORT TERM VALUE ANALYSIS AND IMPACT ON PMPM

Post-Survey Medical Net Paid Amount PMPM between *Lonely* and *Not Lonely* Groups

RAW   PS MATCHED

■ Lonely   ■ Not Lonely
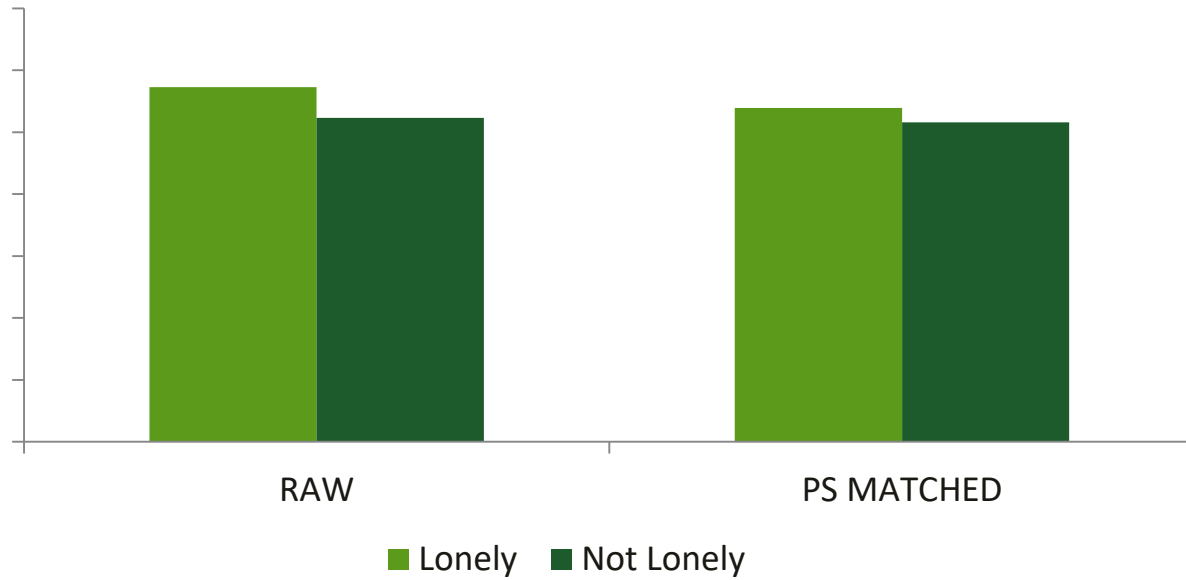
THREE-YEAR VALUE ANALYSIS: IMPACT ON ADHERANCE

Propensity Matching Equalizes Members in Baseline Year

Outcomes Period (3-Year)

*Characteristics addressed in Propensity Scoring Model*

Demographic	Clinical Profile	Utilization	Product Details
Age	CAD	Medical Allowed	SNP
Sex	Heart Failure	ER Visits	Dual Eligible
CMS Region	COPD	Physician Office Visits	Low Income Subsidy
Rurality	Hyperlipidemia	Outpatient Visits	Pharmacy Mail Order[1]
	Chronic Kidney Disease		Risk Score
	Depression		
	Diabetes		

LONG-TERM VALUE ANALYSIS FOR MEDICATION ADHERANCE

Cumulative Allowed Savings per Member Over Time with 95% Confidence Intervals

Legend: Total Member Impact — Total Member Impact (2.5%) — Total Member Impact (97.5%)
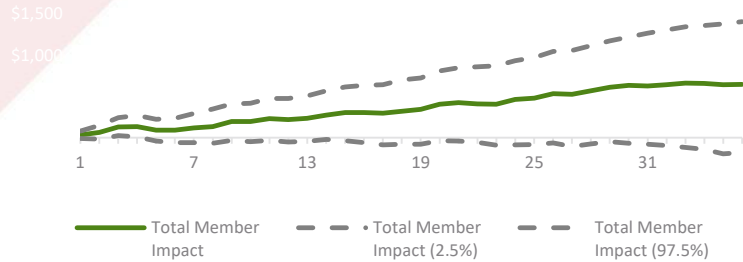
Insights

- Statistically significant savings in medical allowed.
- Statistically significant increase in pharmacy spending.
- Increase in pharmacy spending outweighed by savings in medical allowed, however, this is not statistically significant.
- Confidence intervals widen the further out in time costs are projected.

Cumulative Medical Allowed Savings per Member Over Time with 95% Confidence Intervals

Legend: Medical Member Impact — Medical Member Impact 2.5% — Medical Member Impact 97.5%
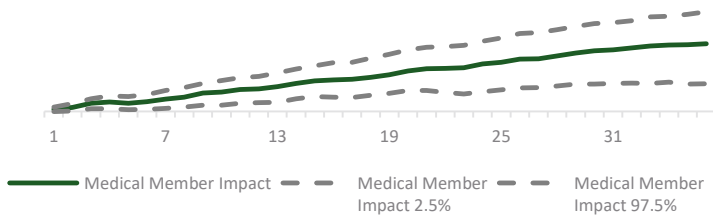
Cumulative Pharmacy Allowed Savings per Member over Time with 95% Confidence Intervals

Legend: Rx Member Impact — Rx Member Impact 2.5% — Rx Member Impact 97.5%