

Bold Goal, Population Health Strategy  
Office of the Chief Medical Officer

# Healthy Days Guide

Measuring health-related quality of life and population health

# We want more Healthy Days for our associates, members and communities we serve

The U.S. Centers for Disease Control and Prevention (CDC) health-related quality of life (HRQOL-4) four-question Healthy Days tool was developed in the early 1990s. Its ease of use and ability to track and trend population health attracted our attention in 2015 when we launched Humana's Bold Goal, a population health strategy focused on both community and business integration to improve the clinical and social outcomes of our members.

For the last four years, Humana has been working with community-based organizations and physician practices to address social determinants and health-related social needs at a local level. We use Healthy Days to track progress, which measures the mentally and physically Unhealthy Days of an individual over a 30-day period. The tool relies on an individual's perception of their health—so it's easy to administer and has a proven track record. Healthy Days also has a direct correlation between chronic illness, disease progression and social determinants of health (SDOH).

The Bold Goal, Population Health Strategy, team and the Office of the Chief Medical Officer would like to see more community organizations, hospitals, pharmacists, nurses and physician practices adopt Healthy Days as a way to track and trend the health of member and patient populations.

Sincerely,



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The information contained in Section 01 of this document is based on information provided by The U.S. Centers for Disease Control and Prevention (CDC), <https://www.cdc.gov/hrqol/index.htm>

# SECTION 01

## What is Healthy Days?

The CDC health-related quality of life four-question assessment tool, Healthy Days, measures self-reported mentally and physically Unhealthy Days of an individual over a 30-day period. For the expanded definition, visit [www.cdc.gov/hrqol/hrqol14\\_measure.htm](http://www.cdc.gov/hrqol/hrqol14_measure.htm).

## What is health-related quality of life?

Health-related quality of life (HRQOL) and its determinants encompass those aspects of overall quality of life that can be clearly shown to affect health—either physical or mental.

**On the individual level,** HRQOL includes physical and mental health perceptions and their correlates—such as health risks and conditions, functional status, social support and socioeconomic status.

**On a community level,** HRQOL includes resources, conditions, policies and practices that influence a population’s health perceptions and functional status.

## Origin of Healthy Days

- The need was identified for a standard set of valid HRQOL measures that could be used in U.S. health surveillance systems.
- A collaborative program was initiated in 1989 by the CDC’s National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP).
- The NCCDPHP collaborated with the CDC’s Disability Prevention Program, Women’s Health Program, and National Center for Health Statistics Questionnaire Development Research Lab and Epidemiology Program Office to develop and validate the Healthy Days tool, a compact set of measures that states and communities could use to measure HRQOL.
- The core Healthy Days measures assess a person’s perceived sense of well-being through four questions on:

- 1 Self-rated health
- 2 Number of recent days when physical health was not good
- 3 Number of recent days when mental health was not good
- 4 Number of recent activity limitation days because of poor physical or mental health

# SECTION 01

## Healthy Days measures

1. Would you say that in general your health is excellent, very good, good, fair, or poor?
2. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
3. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
4. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

## How is the summary index of Unhealthy Days calculated?

Unhealthy Days is an estimate of the overall number of days during the previous 30 days when the respondent felt that either his or her physical or mental health was not good. To obtain an estimate of a person's overall Unhealthy Days, responses to questions #2 and #3 are added together, with a logical maximum of 30 Unhealthy Days.

$$\begin{array}{r} \text{Physically} \\ \text{Unhealthy} \\ \text{Days} \end{array} + \begin{array}{r} \text{Mentally} \\ \text{Unhealthy} \\ \text{Days} \end{array} = \begin{array}{r} \text{Total} \\ \text{Unhealthy} \\ \text{Days} \end{array}$$

## How can people have up to 60 Unhealthy Days in a 30-day period?

Physically Unhealthy Days and mentally Unhealthy Days are different domains of health that may occur simultaneously.



### 8 UNHEALTHY DAYS

Male, 35 years old; diabetes

S	M	T	W	TH	F	S
		●	●●	●	3	4
		1	2			5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
●						
27	28	29	30			

- Physically Unhealthy Days = 5
- Mentally Unhealthy Days = 3



### 30 UNHEALTHY DAYS

Male, 45 years old; diabetes and depression

S	M	T	W	TH	F	S
		●	●●	●	3	4
●●	●●	●●	●	●	●	●●
6	7	8	9	10	11	12
13	14	15	16	17	18	19
●●	●●	●	●	●	●	●
20	21	22	23	24	25	26
●	●	●	●			
27	28	29	30			

- Physically Unhealthy Days = 15
- Mentally Unhealthy Days = 15



### 55 UNHEALTHY DAYS

Female, 65 years old; diabetes, depression and amputation

S	M	T	W	TH	F	S
		●	●●	●	3	4
●●	●●	●●	●●	●●	●●	●●
6	7	8	9	10	11	12
13	14	15	16	17	18	19
●●	●●	●●	●●	●	●	●
20	21	22	23	24	25	26
●●	●●	●●	●●			
27	28	29	30			

- Physically Unhealthy Days = 28
- Mentally Unhealthy Days = 27

# SECTION 01

## How is the Healthy Days measure used?

### General use cases

- Used in tracking population health status and HRQOL in countries, states and communities to:
  - 1) Identify health disparities
  - 2) Track population trends
  - 3) Build broad coalitions around a measure of population health compatible with the World Health Organization's definition of health

### Specific use cases

- Used for research or program planning by the CDC Cardiovascular Health, Nutrition and Physical Activity and HIV/AIDS Programs as well as by the Public Health Foundation, the Foundation for Accountability, the American Cancer Society and others
- Used in the state-based Behavioral Risk Factor Surveillance System (BRFSS) since 1993
  - Healthy Days measures support the two major goals of Healthy People 2010/2020: Improving the Quality and Years of Healthy Life and Eliminating Health Disparities
- Used in the National Health and Nutrition Examination Survey (NHANES) for persons aged 12 and older since 2000
- Used in the U.S. Medicare Health Outcomes Survey (HOS)—a measure in the National Commission for Quality Assurance's (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) since 2003

# SECTION 01

## Healthy Days continues to be our measurement of choice

According to the CDC, Healthy Days provides a simple, yet comprehensive, HRQOL summary measure that is a valid and responsive index of perceived physical and mental health over time that is generally acceptable to public health and social science researchers, policymakers and practitioners.

## How is Humana using Healthy Days?

- **Population health observation** – Annual population survey assessments across lines of business, communities and within chronic condition and SDOH populations
- **Outcome measures** – Leading indicator outcome measures in interventions
- **Proactive intervention** – Screening tool for underserved populations, and those with 20+ Unhealthy Days receive callback for SDOH and clinical triage

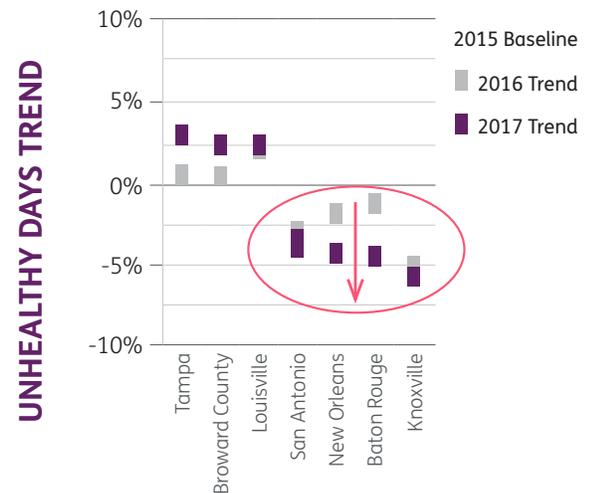
## Journey to impact: Our blueprint for success



## Humana use cases

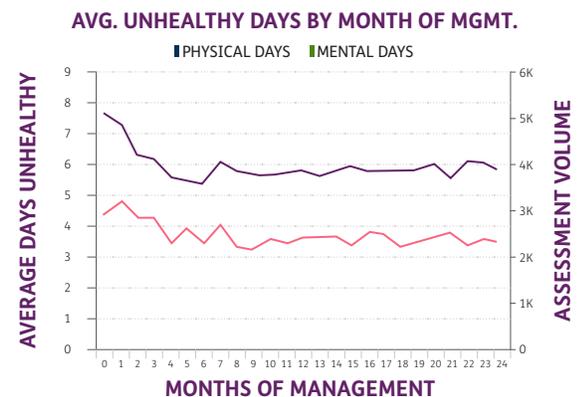
### Population health observation

Annual population survey assessments in lines of business, communities and within chronic condition and SDOH populations



### Outcome measures

Leading indicator outcome measures in pilots and programs



### Proactive intervention

Screening tool for underserved populations, and those with 20+ Unhealthy Days receive callback for SDOH and clinical triage

# SECTION 02

## Peer-reviewed literature and use cases

Sample peer-reviewed literature highlighting how Healthy Days has been used or mentioned as a key topic

- United States

Moriarty D.G., Zack M.M., and Kobau R. **“The Centers for Disease Control and Prevention’s Healthy Days Measures—Population tracking of perceived physical and mental health over time.”** *Health and Quality of Life Outcomes*. 2003; 1:37

Healthy Days data are useful for identifying health needs and disparities, assessing the state of chronic condition populations, and tracking population trends. Both the full 14-question Healthy Days survey (CDC HRQOL-14) and the brief version (CDC HRQOL-4) have been used in surveillance systems, research and population health report cards.

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Chen H.T., Baumgardern D.J., Rice, J.P. **“Health-related quality of life among adults with multiple chronic conditions in the United States, Behavioral Risk Factor Surveillance System, 2007.”** *Prev Chronic Dis*. 2011 Jan; 8(1):A09

HRQOL-4 (general health, Physically and Mentally Unhealthy Days, activity limited days) were compared for 8 chronic conditions. Results: People with 3 or more chronic conditions had the highest risk of reporting fair or poor health. People with cardiovascular conditions or diabetes had higher risk of reporting poor HRQOL. Conclusion: Strategies that help clinicians to manage their patients’ chronic conditions may contribute to improved HRQOL among adults.

- International

Aslan U.B., Cavlak U, Yagci N., Baskan E. **“Reliability and validity of the Turkish version of the CDC HRQOL-4 scale in patients with chronic low back pain.”** *Pak J Med Sci*. 2010; 26(4):875-879

This study examined reliability and validity of the Turkish version of CDC’s Healthy Days tool (CDC HRQOL-4) in chronic low back pain (CLBP) patients. Results indicate that the Turkish version is a short, reliable and valid tool to assess HRQOL in CLBP patients.

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Kolbe-Alexander, T.L., Buckmaster, Nossel C., et al. **“Chronic disease risk factors, Healthy Days and medical claims in South African employees presenting for health risk screening.”** *BMC Public Health*. 200; 8:228

The aim of this study was to determine the health and risk profile of South African employees presenting for health risk assessments and to measure their readiness to change and improve lifestyle behavior. Health-related age was significantly associated with number of days adversely affected by mental and physical health, days away from work and total annual medical costs. Increased health-related expenditure was associated with increased number of risk factors, absenteeism and reduced physical activity.

- Humana-authored publications

Slabaugh S.L., Shah M., Zack M., Happe L., Cordier T., Havens E., Davidson E., Miao M., Prewitt T., Jia H. **“Leveraging Health-Related Quality of Life in Population Health Management: The Case for Healthy Days.”** Popul Health Manag. 2016 Mar 31.

This paper studies the Healthy Days survey instrument (CDC HRQOL-4) as a tool to advance population health. A systematic literature review was conducted and revealed correlations to chronic health conditions. Methods for analyzing Healthy Days data are discussed, including stratified sampling techniques, statistical measures to account for variance, and modeling techniques for skewed distributions. Healthy Days captures broad dimensions of health from the individual’s perspective, and is a simple way to holistically measure the health and well-being of a population and its trend over time.

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Cordier T., Slabaugh S.L., Havens E., et al. **“A health plan’s investigation of Healthy Days and chronic conditions.”** Am J Manag Care. 2017;23(10):e323-e330

This cross-sectional study using Healthy Days survey data linked to medical claims, investigated how self-reported Unhealthy Days are related to 6 chronic conditions. All 6 chronic conditions were associated with significantly more physically Unhealthy Days, and chronic obstructive pulmonary disease, depression, and diabetes were associated with significantly more mentally Unhealthy Days. Quality measure noncompliance was associated with increased Unhealthy Days. Utilization and cost increased with increasing Unhealthy Days.

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Cordier T., Song Y., Cambon J., Haugh G.S., Steffen M., Hardy P., Staehly M., Hagan A., Gopal V., Tye P.D., Renda A. **“A bold goal—more Healthy Days through improved community health.”** Popul Health Manag. 2018; 21(3):202-208

Humana, a large health care company, set a Bold Goal of 20% improvement in health in the communities it serves. Improvement was assessed using CDC’s Healthy Days tool. This paper presents the methods for measuring progress, reports results for the first year of tracking, and describes Humana’s community-based interventions. Healthy Days improved by 3.1% from 2015 to 2016. The paper also describes how additional work identifying associations between social determinants of health (SDOH) and Healthy Days is influencing Humana’s strategy.

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Cole S., Zbikowski S., Renda A., Wallace A., Dobbins J., Matt B. **“Examining changes in Healthy Days after health coaching.”** Am J Health Promot. 2018 Nov 29:890117118816286

This retrospective observational study describes changes in health-related quality of life (HRQOL) related to variation in demographic characteristics, program goals, and program participation, among health coaching program participants. Findings indicate significant improvements in Healthy Days, following 6 months of health coaching.

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Kihlström L., Burris M., Dobbins J., McGrath E., Renda A., Cordier T., Song Y., Prendergast K., Serrano Arce K., Shannon D., and Himmelgreen D. **“Food Insecurity and Health-Related Quality of Life: A Cross-Sectional Analysis of Older Adults in Florida, U.S.”** Ecology of Food and Nutrition. 2019; 58(1):45-65

This study investigated the association between food insecurity and health-related quality of life (HRQOL), measured in Healthy Days (CDC HRQOL-4). Food-insecure individuals were more likely to report  $\geq 14$  physically unhealthy and  $\geq 14$  days with activity limitations.

**Humana.**

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