

CHAPTER V

Foundation Health Measures (FHM)

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Background

Global, cross-cutting summary measures of population health have been included in Healthy People since the initiative's second decade.¹⁻³

In Healthy People 2020, the cross-cutting summary measures are called Foundation Health Measures. Such measures have been a cornerstone of Healthy People because they reflect the impact of actions and interventions implemented to achieve the Healthy People objectives and goals. The measures are used to monitor improvement in population health in the broadest sense.

Two tiers of Foundation Health Measures are included in Healthy People 2020 (Table V-1). The first tier includes three measures of healthy life expectancy that combine life expectancy with selected summary measures of health.⁴ The first tier measures are ordered to form a hierarchy, with an indicator of participation in society—activity limitation—at the top, followed by a measure of disability, and, finally, a measure of respondent-assessed health. The second tier of Foundation Health Measures disaggregates the measures of healthy life expectancy

Table V-1. Healthy People 2020 Foundation Health Measures

Measure Number	Measure Statement	Data Sources
Tier 1. Healthy Life Expectancy		
FHM-1.1	Healthy life expectancy ¹ at birth—Free of limitation of activity ²	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-1.2	Healthy life expectancy at birth—Free of disability ³	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-1.3	Healthy life expectancy at birth—In good or better health ⁴	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-2.1	Healthy life expectancy at age 65—Free of limitation of activity	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-2.2	Healthy life expectancy at age 65—Free of disability	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-2.3	Healthy life expectancy at age 65—In good or better health	National Health Interview Survey (NHIS), CDC/NCHS, National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
Tier 2. Summary Mortality and Population Health Measures		
FHM-3	Life expectancy at birth	National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-4	Life expectancy at age 65	National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS
FHM-5.1	Any activity limitation, all ages	National Health Interview Survey (NHIS), CDC/NCHS
FHM-5.2	Any activity limitation, 65 and over	National Health Interview Survey (NHIS), CDC/NCHS
FHM-6.1	Any disability, all ages	National Health Interview Survey (NHIS), CDC/NCHS
FHM-6.2	Any disability, 65 and over	National Health Interview Survey (NHIS), CDC/NCHS
FHM-7.1	Respondent-assessed health status—In fair or poor health, all ages	National Health Interview Survey (NHIS), CDC/NCHS
FHM-7.2	Respondent-assessed health status—In fair or poor health, 65 and over	National Health Interview Survey (NHIS), CDC/NCHS

¹Life expectancy is defined as the average number of years a population of a certain age would be expected to live, given a set of age-specific death rates in a given year. Healthy life expectancy is the average number of healthy years a person can expect to live if age-specific death rates and age-specific morbidity rates remain the same throughout his or her lifetime.

²Activity limitation is assessed by asking respondents about their (or a family member's) limitations in: activities of daily living, such as eating, bathing/showering, dressing, getting in and out of bed, or using the toilet; instrumental activities of daily living, such as using the telephone, doing housework, preparing meals, shopping, or managing money; playing, going to school, or working; remembering; and any other activity that they (or their family member) cannot do because of a physical, mental, or emotional problem. The terms "activity/participation limitation" and "activity limitation" are used interchangeably.

³The six American Community Survey (ACS) disability questions assess any serious difficulties with hearing; seeing; concentrating, remembering, or making decisions; walking or climbing stairs; dressing or bathing; and doing errands alone. Respondents who report any of these difficulties are considered to have a disability.

⁴Respondent-assessed health status is assessed from the single question: "Would you say [your/ALIAS's] health in general is excellent, very good, good, fair, or poor?" Health status may be assessed and reported by the respondent for himself or herself, or on behalf of a family member living in the same household.

into their component parts, namely: life expectancy; activity limitation; disability; and respondent-assessed health.⁵

Tier 1. Foundation Health Measures: Healthy Life Expectancy

Healthy life expectancy is the average number of healthy years a person can expect to live if age-specific death rates and age-specific morbidity rates remain the same throughout his or her lifetime. Thus, healthy life expectancy is a snapshot of current death and illness patterns illustrating the long-range implications of the prevailing age-specific death and illness rates. The measure is comparable across different populations and time periods.

Healthy People 2020 tracks healthy life expectancy using three measures, each of which is evaluated at birth and at age 65 (Table V-1):

- Expected years of life free of activity limitation
- Expected years of life free of disability
- Expected years of life in good or better health

The **Technical Notes** provide more information about the definition and construction of these measures.

Tier 2. Foundation Health Measures: Summary Mortality and Population Health Measures

The Tier 2 Foundation Health Measures disaggregate the measures of healthy life expectancy into their component parts, namely: life expectancy; activity limitation; disability; and respondent-assessed health (Table V-1). For comparability with the Tier 1 healthy life expectancy measures, Tier 2 life expectancy is evaluated at birth and at age 65. Similarly, the summary population health measures (activity limitation, disability, and respondent-assessed health) are evaluated for all ages and for adults aged 65 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

Life Expectancy

Life expectancy is a summary mortality measure often used to describe the overall health status of a population. Life expectancy is defined as the average number of years a population of a certain age would be expected to live, given a set of age-specific death rates in a given year.

Activity Limitation

Activity limitation refers to a long-term reduction in a person's ability to perform his or her usual activities, including requiring the help of other persons with personal care or routine needs; playing and going to school for children and youth; working for adults; remembering; and any other activity that he or she cannot do or participate in because of a physical, mental, or emotional problem.⁶

Disability

The term disability describes persons at risk of a limitation in their ability to fully participate in society. Persons are identified as having a disability through a set of six standardized questions developed for the American Community Survey (ACS). These questions ask if a person has difficulty in six domains of functioning: hearing; seeing; concentrating, remembering, or making decisions; walking or climbing stairs; dressing or bathing; and doing errands alone.⁷

Respondent-assessed Health Status

Respondent-assessed health status is a measure of how an individual perceives his or her health. It is assessed by a single question that asks a respondent to rate his or her health as "excellent," "very good," "good," "fair," or "poor."⁸

Selected Findings

Healthy Life Expectancy at Birth

- **Healthy life expectancy free of activity limitation at birth** (FHM-1.1) increased by 0.2 years between 2010 and 2014, from 67.9 to 68.1 years (Table V-2, Figure V-1). Both males and females could expect to live 0.3 years longer free of activity limitation in 2014 compared with 2010. In both 2010 and 2014, women could expect to live free of activity limitation 3.3 years longer than men.
- **Healthy life expectancy free of disability at birth** (FHM-1.2) decreased by 0.3 years between 2010 and 2014, from 66.3 to 66.0 years (Table V-2, Figure V-1). Over the same time period, the number of years persons could expect to live free of disability decreased by 0.3 years for males and 0.2 years for females. In 2010, women could expect to live free of disability 2.9 years longer than men; in 2014, women could expect to live free of disability 3.0 years longer than men.

Table V-2. Life Expectancy and Healthy Life Expectancy at Birth (in years): 2010 and 2014

	Year	Total	Male	Female
Life expectancy at birth (FHM-3)	2010	78.7	76.2	81.0
	2014	78.8	76.4	81.2
Healthy life expectancy at birth—Free of activity limitation (FHM-1.1)	2010	67.9	66.2	69.5
	2014	68.1	66.5	69.8
Healthy life expectancy at birth—Free of disability (FHM-1.2)	2010	66.3	64.8	67.7
	2014	66.0	64.5	67.5
Healthy life expectancy at birth—In good or better health (FHM-1.3)	2010	69.6	68.0	71.2
	2014	70.4	68.7	72.2

NOTE: The [Technical Notes](#) provide more information about the definition and construction of these measures.

DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS

- **Healthy life expectancy in good or better health at birth (FHM-1.3)** increased by 0.8 years between 2010 and 2014, from 69.6 to 70.4 years (Table V-2, Figure V-1). Over the same time period, the increase in the number of years in good or better health was 0.7 years for men and 1.0 years for women. In 2010, women could expect to live in good or better health 3.2 years longer than men; in 2014, women could expect to live in good or better health 3.5 years longer than men.

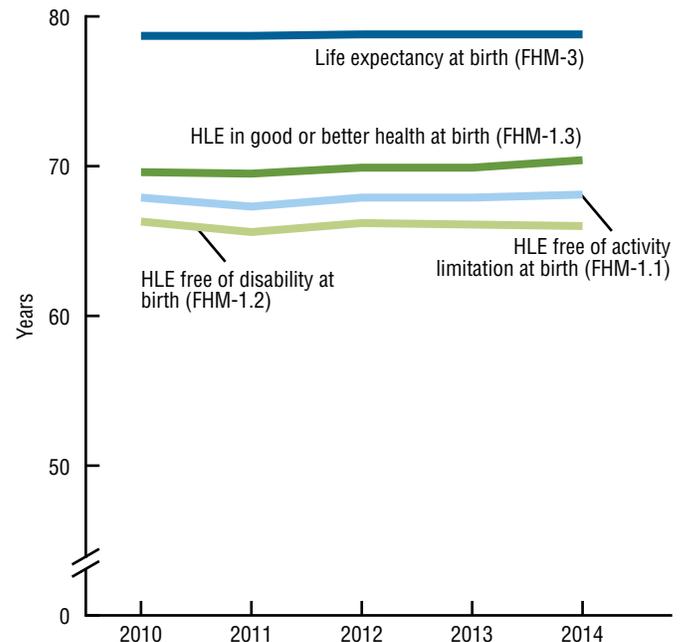
In 2014, compared with the life expectancy at birth of 78.8 years, persons could expect to live an average of (Table V-2, Figure V-2):

- 68.1 years (86.4%) free of activity limitation.
- 66.0 years (83.7%) free of disability.
- 70.4 years (89.3%) in good or better health.

Healthy Life Expectancy at Age 65

- **Healthy life expectancy free of activity limitation at age 65 (FHM-2.1)** increased by 0.2 years between 2010 and 2014, from 13.3 to 13.5 years (Table V-3, Figure V-3). Both males and females could expect at age 65 to live 0.2 years longer free of activity limitation in 2014 compared with 2010. In both 2010 and 2014, women could expect at age 65 to live free of activity limitation 1.1 years longer than men.

Figure V-1. Life Expectancy and Healthy Life Expectancy at Birth (in years): 2010–2014



NOTES: HLE is healthy life expectancy. The [Technical Notes](#) provide more information about the definition and construction of these measures.

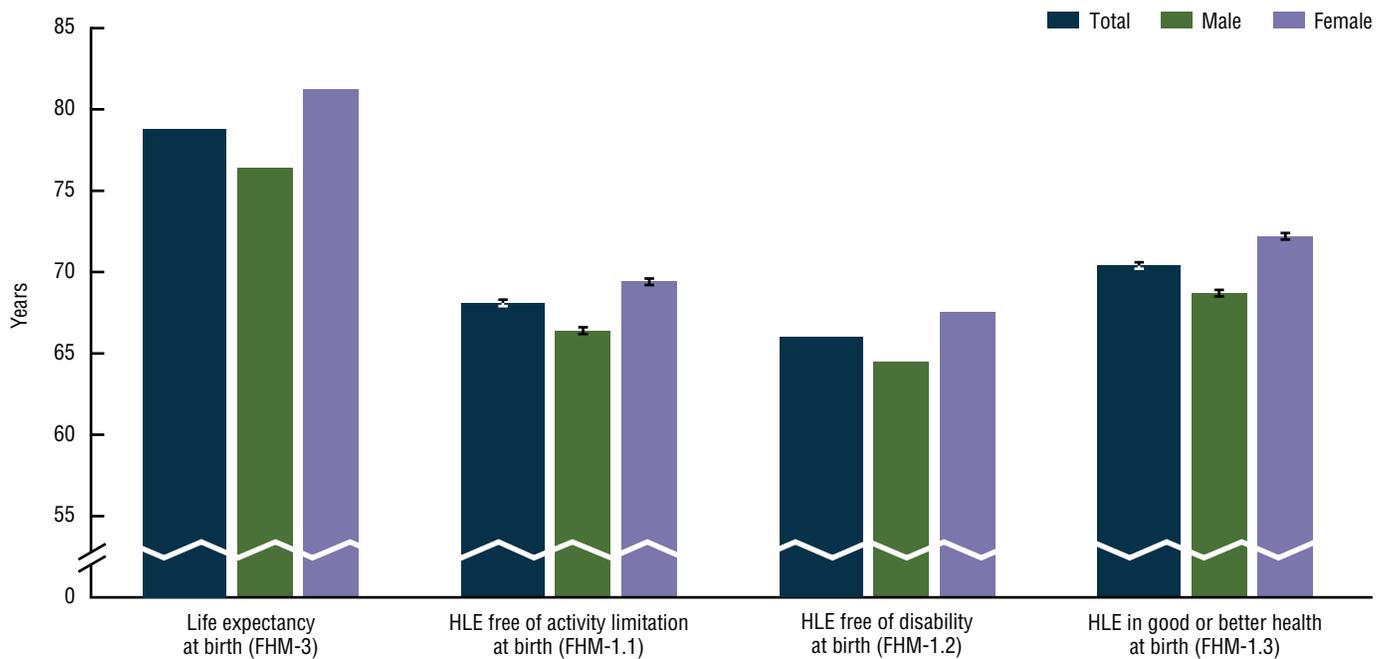
DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS

- **Healthy life expectancy free of disability at age 65 (FHM-2.2)** decreased by 0.2 years between 2010 and 2014, from 11.3 to 11.1 years (Table V-3, Figure V-3). Over the same time period, the number of years persons could expect at age 65 to live free of disability decreased by 0.4 years for males and 0.1 years for females. In 2010, women could expect at age 65 to live free of disability 1.2 years longer than men; in 2014, women could expect at age 65 to live free of disability 1.5 years longer than men.
- **Healthy life expectancy in good or better health at age 65 (FHM-2.3)** increased by 0.7 years between 2010 and 2014, from 14.3 years to 15.0 years (Table V-3, Figure V-3). Both males and females could expect at age 65 to live 0.7 years longer in good or better health in 2014 compared with 2010. In both 2010 and 2014, women could expect at age 65 to live in good or better health 2.1 years longer than men.

In 2014, compared with the life expectancy at age 65 of 19.3 years, persons could expect to live an average of (Table V-3, Figure V-4):

- 13.5 years (69.9%) free of activity limitation.
- 11.1 years (57.5%) free of disability.
- 15.0 years (77.7%) in good or better health.

Figure V-2. Life Expectancy and Healthy Life Expectancy at Birth (in years), by sex: 2014



NOTES: HLE is healthy life expectancy. I is 95% confidence interval. Confidence intervals could not be calculated for the estimates of HLE free of disability at birth. The **Technical Notes** provide more information about the definition and construction of these measures.
 DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS

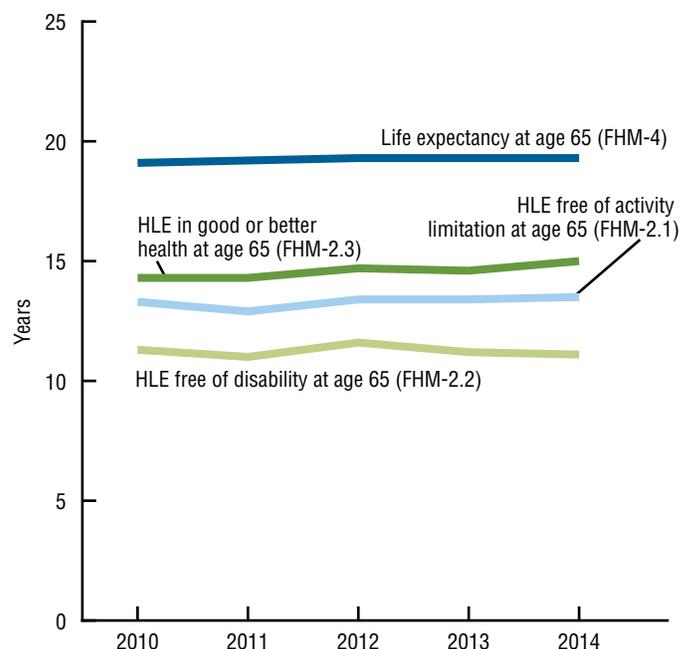
Table V-3. Life Expectancy and Healthy Life Expectancy at Age 65 (in years): 2010 and 2014

	Year	Total	Male	Female
Life expectancy at age 65 (FHM-4)	2010	19.1	17.7	20.3
	2014	19.3	18.0	20.5
Healthy life expectancy at age 65—Free of activity limitation (FHM-2.1)	2010	13.3	12.7	13.8
	2014	13.5	12.9	14.0
Healthy life expectancy at age 65—Free of disability (FHM-2.2)	2010	11.3	10.7	11.9
	2014	11.1	10.3	11.8
Healthy life expectancy at age 65—In good or better health (FHM-2.3)	2010	14.3	13.2	15.3
	2014	15.0	13.9	16.0

NOTE: The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS

Figure V-3. Life Expectancy and Healthy Life Expectancy at Age 65 (in years): 2010–2014



NOTES: HLE is healthy life expectancy. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS

Life Expectancy

- Between 2010 and 2014, **life expectancy at birth** (FHM-3) increased by 0.1 years, from 78.7 to 78.8 years (Table V-2, Figure V-1). Both males and females could expect to live an average of 0.2 years longer in 2014 compared with 2010. In both 2010 and 2014, women could expect to live an average of 4.8 years longer than men.
- Between 2010 and 2014, **life expectancy at age 65** (FHM-4) increased by 0.2 years, from 19.1 to 19.3 years (Table V-3, Figure V-3). Over the same time period, life expectancy at age 65 increased by 0.3 years for males, from 17.7 to 18.0 years, and 0.2 years for females, from 20.3 to 20.5 years. In 2010, at age 65 women could expect to live 2.6 years longer than men; in 2014, at age 65 women could expect to live 2.5 years longer than men.

Activity Limitation

- Between 2010 and 2014, the age-adjusted proportion of **persons of all ages with activity limitation** (FHM-5.1) decreased by 0.1 percentage points, from 11.4% to 11.3%, although this change was not statistically significant (Table V-4, Figure V-5). In 2014, the difference by sex was not statistically significant (Table V-4, Figure V-6).
- Between 2010 and 2014, the age-adjusted proportion of **persons aged 65 and over with activity limitation**

(FHM-5.2) decreased by 0.2 percentage points, from 29.4% to 29.2%, although this change was not statistically significant (Table V-5, Figure V-7). In 2014, a lower age-adjusted proportion of males aged 65 and over (27.5%) had an activity limitation compared to females (30.3%) (Table V-5, Figure V-8).

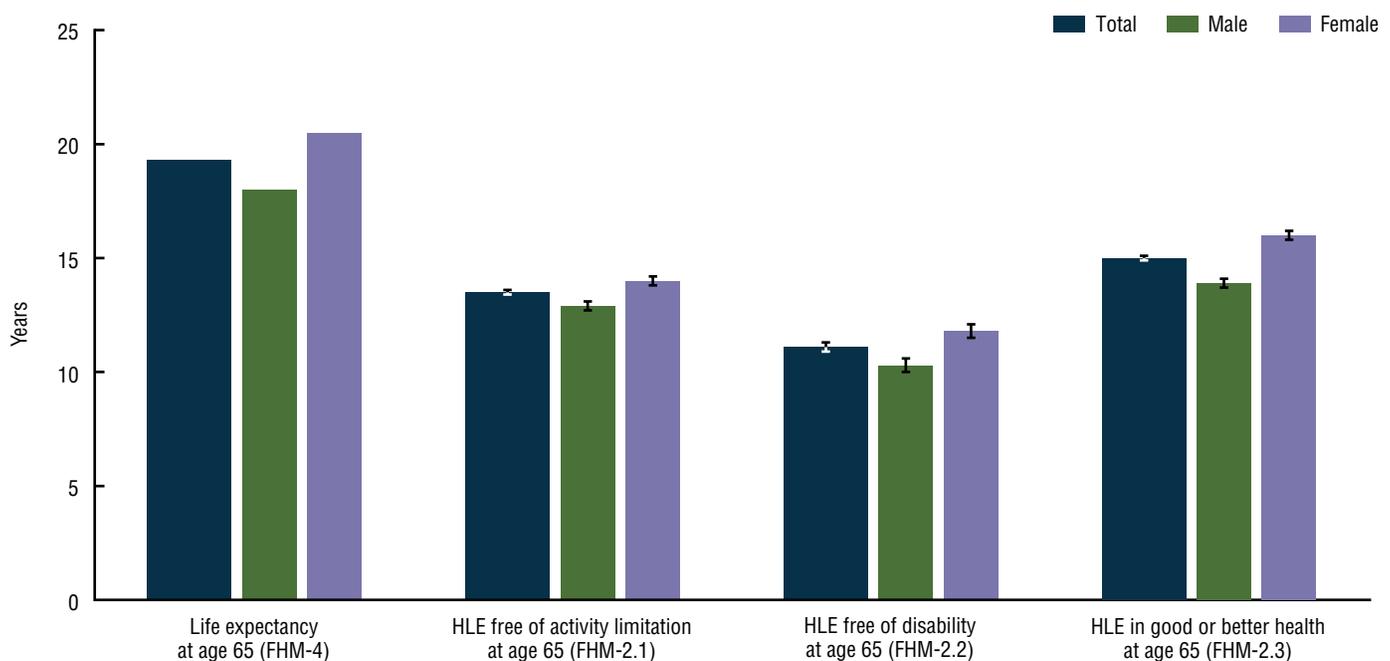
Disability

- Between 2010 and 2014, the age-adjusted proportion of **persons of all ages with disability** (FHM-6.1) increased by 0.4 percentage points, from 12.5% to 12.9%, although this change was not statistically significant (Table V-4, Figure V-5). In 2014, the difference by sex was not statistically significant (Table V-4, Figure V-6).
- Between 2010 and 2014, the age-adjusted proportion of **persons aged 65 and over with disability** (FHM-6.2) increased by 1.8 percentage points, from 39.2% to 41.0%, although this change was not statistically significant (Table V-5, Figure V-7). In 2014, the difference by sex was not statistically significant (Table V-5, Figure V-8).

Respondent-assessed Health Status

- Between 2010 and 2014, the age-adjusted proportion of **persons of all ages with respondent-reported “fair or poor health”** (i.e., not “good or better health”) (FHM-7.1) decreased by 0.7 percentage points, from

Figure V-4. Life Expectancy and Healthy Life Expectancy at Age 65 (in years), by sex: 2014



NOTES: HLE is healthy life expectancy. I is 95% confidence interval. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCES: National Health Interview Survey (NHIS), CDC/NCHS and National Vital Statistics System-Mortality (NVSS-M), CDC/NCHS

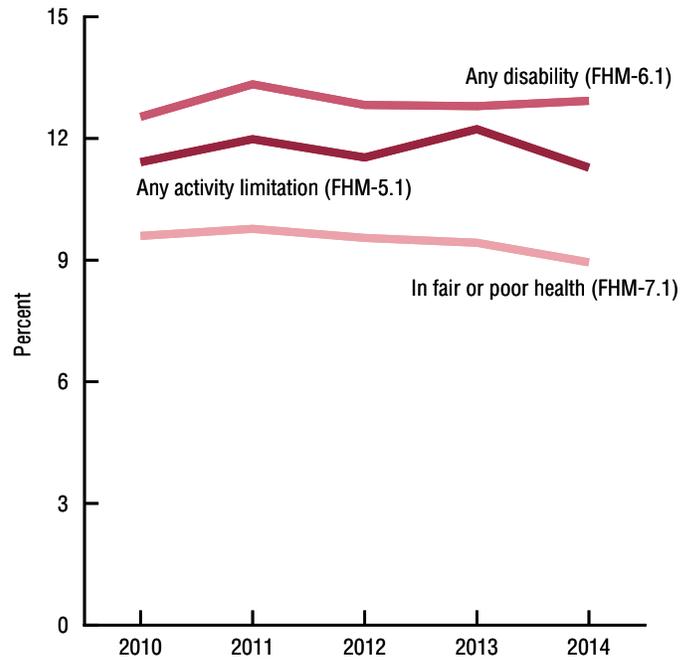
Table V-4. Summary Population Health Measures, all ages: 2010 and 2014

	Year	Total		Male		Female	
		Percent	SE	Percent	SE	Percent	SE
Proportion of persons of all ages with any activity limitation (FHM-5.1)	2010	11.4	0.16	11.5	0.19	11.2	0.19
	2014	11.3	0.15	11.4	0.19	11.1	0.18
Proportion of persons of all ages with any disability (FHM-6.1)	2010	12.5	0.19	12.5	0.25	12.5	0.23
	2014	12.9	0.21	13.1	0.26	12.8	0.25
Proportion of persons of all ages in fair or poor health (FHM-7.1)	2010	9.6	0.14	9.2	0.17	10.0	0.17
	2014	8.9	0.12	8.7	0.16	9.2	0.15

NOTES: SE is the standard error of the estimate. Estimates are age-adjusted to the year 2000 standard population using six age groups: under 18, 18-44, 45-54, 55-64, 65-74, and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

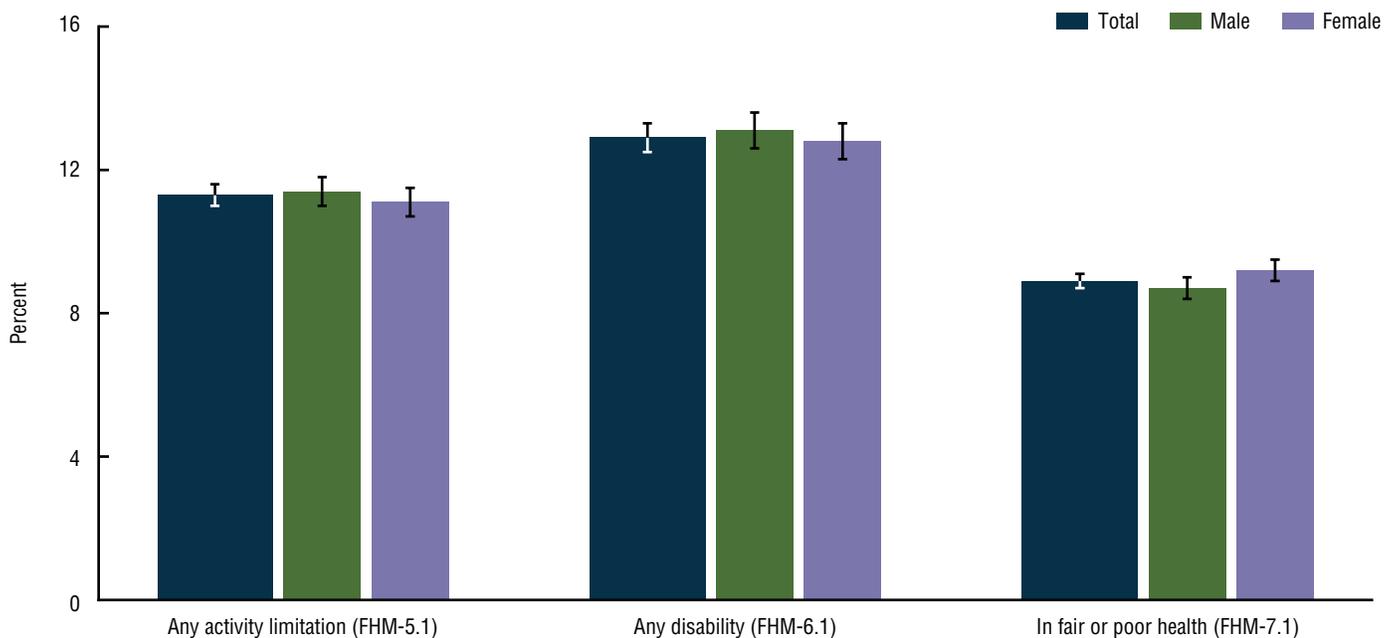
Figure V-5. Summary Population Health Measures, all ages: 2010-2014



NOTES: Estimates are age-adjusted to the year 2000 standard population using six age groups: under 18, 18-44, 45-54, 55-64, 65-74, and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

Figure V-6. Summary Population Health Measures, all ages, by sex: 2014



NOTES: I is 95% confidence interval. Estimates are age-adjusted to the year 2000 standard population using six age groups: under 18, 18-44, 45-54, 55-64, 65-74, and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

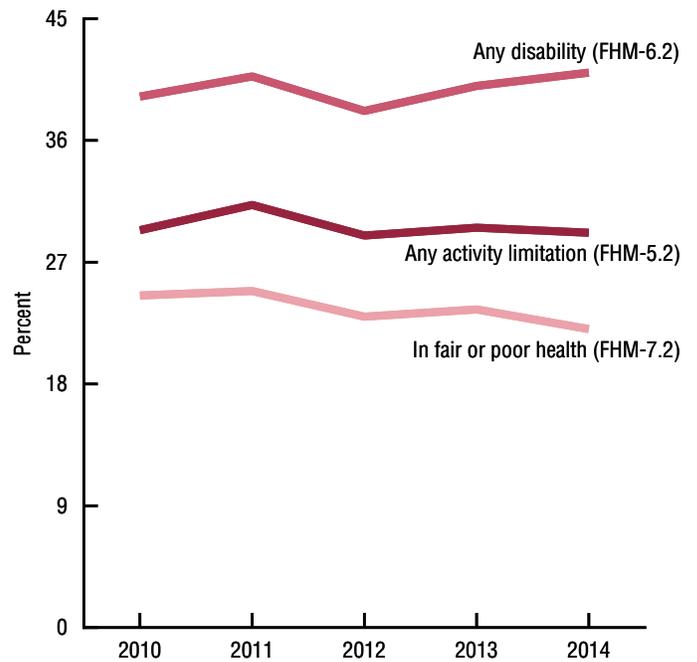
Table V-5. Summary Population Health Measures, ages 65 and over: 2010 and 2014

	Year	Total		Male		Female	
		Percent	SE	Percent	SE	Percent	SE
Proportion of persons aged 65 and over with any activity limitation (FHM-5.2)	2010	29.4	0.61	27.4	0.76	30.8	0.72
	2014	29.2	0.55	27.5	0.71	30.3	0.65
Proportion of persons aged 65 and over with any disability (FHM-6.2)	2010	39.2	0.75	38.7	1.10	39.6	0.95
	2014	41.0	0.79	41.7	1.08	40.4	0.94
Proportion of persons aged 65 and over in fair or poor health (FHM-7.2)	2010	24.6	0.51	25.2	0.73	24.1	0.60
	2014	22.1	0.47	22.5	0.65	21.7	0.55

NOTES: SE is the standard error of the estimate. Estimates are age-adjusted to the year 2000 standard population using two age groups: 65-74 and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

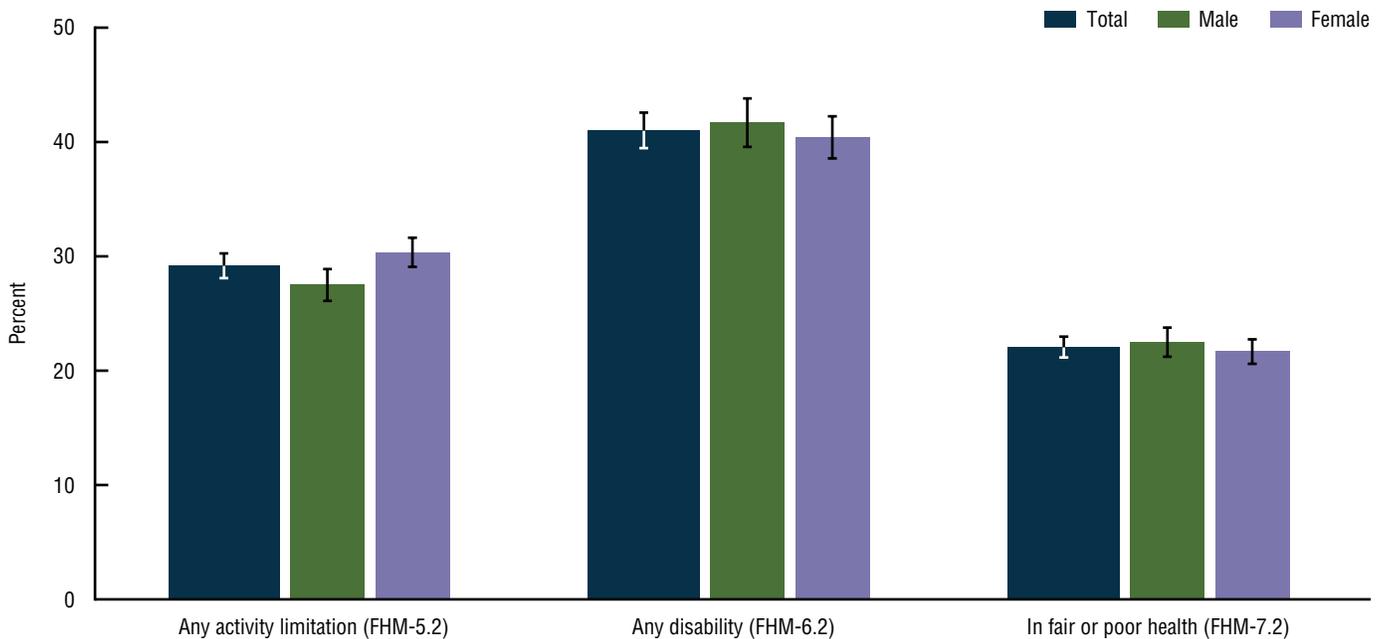
Figure V-7. Summary Population Health Measures, ages 65 and over: 2010-2014



NOTES: Estimates are age-adjusted to the year 2000 standard population using two age groups: 65-74 and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

Figure V-8. Summary Population Health Measures, ages 65 and over, by sex: 2014



NOTES: I is 95% confidence interval. Estimates are age-adjusted to the year 2000 standard population using two age groups: 65-74 and 75 and over. The **Technical Notes** provide more information about the definition and construction of these measures.

DATA SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

9.6% to 8.9% (Table V-4, Figure V-5). In 2014, a lower age-adjusted percentage of males (8.7%) were in fair or poor health compared with females (9.2%) (Table V-4, Figure V-6).

- Between 2010 and 2014, the age-adjusted proportion of persons aged 65 and over with respondent-reported “fair or poor health” (i.e., not “good or better health”) (FHM-7.2) decreased by 2.5 percentage points, from 24.6% to 22.1% (Table V-5, Figure V-7). In 2014, the difference by sex was not statistically significant (Table V-5, Figure V-8).

More Information

Readers interested in more information about the Foundation Health Measures are invited to visit the [HealthyPeople.gov](http://www.healthypeople.gov/2020/about/Foundation-Health-Measures) website: <http://www.healthypeople.gov/2020/about/Foundation-Health-Measures>.

Data for the Foundation Health Measures were from the following data sources:

- National Health Interview Survey: <http://www.cdc.gov/nchs/nhis/>
- National Vital Statistics System—Mortality: <http://www.cdc.gov/nchs/deaths.htm>

Footnotes

1. U.S. Department of Health and Human Services. Healthy People 2000: National Health Promotion and Disease Prevention Objectives. Washington, DC: Government Printing Office. 2001.
2. Erickson P, Wilson R, Shannon I. Years of Healthy Life. Healthy People 2000 Statistical Notes, no 7. Hyattsville, MD: National Center for Health Statistics. 1995.
3. The initiative’s first iteration, Healthy People 1990, included five broad “health goals” that reflected the importance of enhancing life in each of the five major life stages: infants; children; adolescents and young adults; adults; and older adults. These health goals were monitored primarily using mortality measures. See publication: U.S. Department of Health, Education, and Welfare. Healthy People: The Surgeon General’s Report on Health Promotion and Disease Prevention. Washington, DC: U.S. Government Printing Office. 1979. These original five goals were retained in future Healthy People decades; however, changes in how health was conceptualized and measured resulted in new summary measures of health being used in subsequent decades.

4. Madans JH, Weeks JD. A Framework for Monitoring Progress Using Summary Measures of Health. *J Aging Health* 28(7):1299–314. 2016.
5. The **Technical Notes** provide more information about the definition and construction of the Foundation Health Measures.
6. Since the 1997 National Health Interview Survey (NHIS), activity limitation has been assessed by asking respondents about their (or a family member’s) limitations in: activities of daily living, such as eating, bathing/showering, dressing, getting in and out of bed, or using the toilet; instrumental activities of daily living, such as using the telephone, doing housework, preparing meals, shopping, or managing money; playing, going to school, or working; remembering; and any other activity that they (or their family member) cannot do because of a physical, mental, or emotional problem.
7. Since 2008, the National Health Interview Survey (NHIS) has included disability questions as part of an effort to develop and implement a standardized set of questions across multiple surveys in multiple countries. The American Community Survey (ACS) disability questions were adopted in 2011 by the U.S. Department of Health and Human Services (HHS) as the standard set of disability questions to be included on all HHS national surveys, including NHIS. The six ACS questions assess any serious difficulties with hearing; seeing; concentrating, remembering, or making decisions; walking or climbing stairs; dressing or bathing; and doing errands alone. Respondents who report any of these difficulties are considered to have a disability. See: <http://aspe.hhs.gov/dataacnl/standards/ACA/4302/index.shtml>.
8. In the National Health Interview Survey (NHIS), respondent-assessed health status has been assessed from the single question “*Would you say [your/ALIAS’s] health in general is excellent, very good, good, fair, or poor?*” Health status may be assessed and reported by the respondent for himself or herself, or on behalf of a family member living in the same household.

Suggested Citation

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