# STATE OF AGING IN CENTRAL INDIANA

CENTRAL INDIANA SENIOR FUND
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## SECTION 9
# HEALTH OUTCOMES

June 2023


The Polis Center
We bring things into perspective.

INDIANA UNIVERSITY
PUBLIC POLICY INSTITUTE

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Regenstrief Institute
Center for Aging Research

In this report, we refer to three subsets of older adults.

Younger-old: age 55-64
Middle-old: age 65-84
Oldest-old: age 85+

# HEALTH OUTCOMES

Many older adults deal with chronic diseases, like cancer and cardiovascular-related issues, increased disability, and increased susceptibility to lower-respiratory problems. These conditions can be exaggerated by social stressors and lifestyle factors, and they place older adults at increased risk from COVID-19. This section of the report discusses mortality rates, rates of disease, notable changes, and disparities in the health of Central Indiana's older populations.

Key findings include:

- While for the U.S. and Indiana, the COVID-19 mortality rate for those age 55 and older continued to increase dramatically between 2020 and 2021, in Central Indiana the upward trend in the COVID-19 mortality rate for those age 55 and older leveled off between 2020 and 2021.
- In 2021, COVID-19 continued to increase health outcome disparities between Black and White populations.
- There was increased mortality in Central Indiana due to Alzheimer's disease and diabetes, and a halt to the previous decline in mortality due to cancer and heart disease.
- Suicide rates are rising among older men in Central Indiana.
- Cancer remained the leading cause of death for the younger- and middle-old adults.
- Deaths from falls, drug overdose, and suicide have continued to increase in older adults in Central Indiana, matching state and national trends.

For US and Indiana, mortality increased dramatically in 2020 and 2021 as a result of COVID-19, however, a stagnant trend in mortality rates for older adults was observed for Central Indiana from 2020 to 2021.

Age-adjusted mortality rates, age 55+ per 100,000

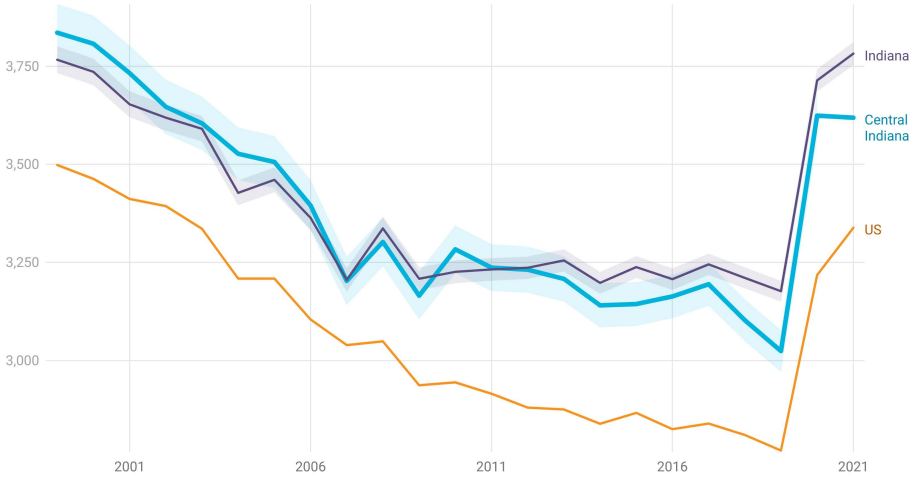



Chart: The Polis Center • Source: U.S. Centers for Disease Control and Prevention • Created with Datawrapper

Source: U.S. Centers for Disease Control and Prevention


**How to read this chart.** These statistics are only estimates. The estimate itself is shown as a dark line. The shaded area around that line represents the confidence interval. We are 95 percent sure the true value lies in that shaded area.

# MORTALITY

Mortality rates for Indiana and Central Indiana older adults have long been higher than the national average. While the COVID-19 pandemic drove mortality rates to levels not seen in 20 years across the country, the mortality rates in Indiana and Central Indiana remained higher than the national average. It is notable, however, that between 2020 and 2021, mortality rates for older adults in Central Indiana essentially stayed the same, i.e., decreasing by just one-tenth of a percent, while the older adult mortality rate increased four percent in the U.S. and two percent in Indiana.[1]

Black older adults in Central Indiana had the highest mortality rates in each age group, with the exception of the oldest-old (age 85 and older), where White older adults

## The pandemic increased the disparities between White and Black death rates

Indiana's age-adjusted mortality rate (per 100,000) for age 55+ by race and ethnicity

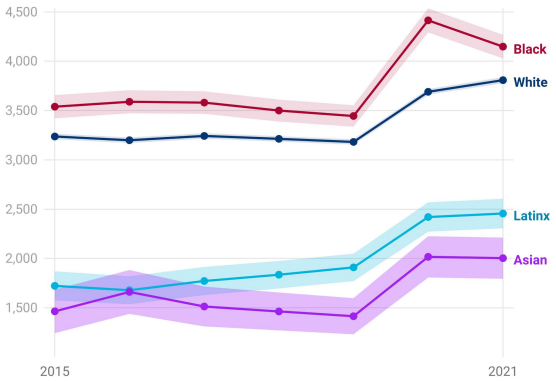



Chart: The Polis Center • Source: U.S. Centers for Disease Control and Prevention • Created with Datawrapper

had the highest mortality rates. Latinx older adults had the lowest mortality rates across all age groups, although there was greater uncertainty in the data.[2] The racial/ethnic disparities seen in Central Indiana mirrored those across the state and nation.[3] While the pandemic initially caused age-adjusted mortality rates to increase the most for Indiana Black older adults in 2020, mortality rates for Black individuals went down in 2021. Age-adjusted mortality rates for White individuals slightly increased, while mortality rates for Latinx and Asian individuals stayed consistent from 2020 to 2021, with uncertainty in the data.

## COVID-19 MORTALITY FOR OLDER ADULTS

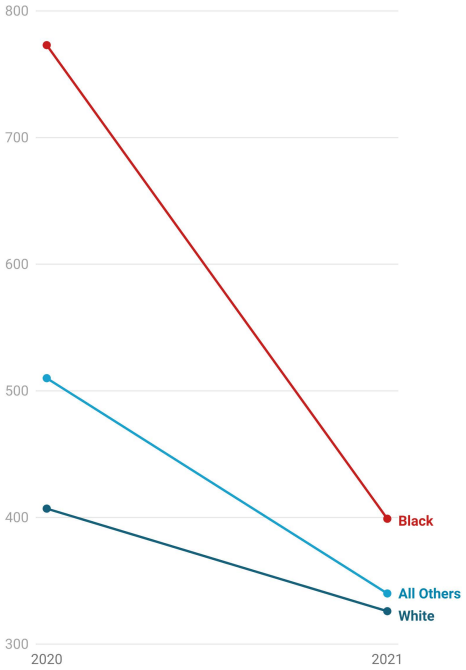
While Central Indiana mortality rates from cancer and heart disease were similar for Black and White older adults, the age-adjusted COVID-19 mortality rates were over 22 percent higher for Black older adults than for White older adults (399 and 326 deaths per 100,000 population, respectively.[4] Nationally, this racial disparity was even greater, with Black older adult COVID-19 mortality rates 28 percent higher than for White older adults (500 and 389 deaths per 100,000 population, respectively. In Indiana, the disparity was lower, with Black older adult COVID-19 mortality rates just over eight percent higher than White older adult COVID-19 mortality rates (459 and 423 deaths per 100,000 population, respectively.

Relative to the first two years of the pandemic, death rates for adults age 50+ in Indiana remained low between April 2022 to April 2023. However, Central Indiana's rural areas tended to have greater overall COVID-19 death rates than Marion County.

The impact of COVID-19 on mortality was higher than just those deaths where COVID-19 was listed as the underlying cause of death. Some deaths may be indirectly attributable to COVID-19. To assess the overall impact of a pandemic, epidemiologists often measure "excess deaths", i.e., the difference between the recorded number of deaths and the expected number of deaths in a specific period. This measure of excess death can provide information about the overall burden of mortality related to the COVID-19 pandemic, including deaths that were directly attributed to COVID-19 and those that are potentially attributable to COVID-19 indirectly. In Indiana, from the week beginning on February 1, 2020, to May 24, 2023, there were 28,292 predicted excess deaths across all causes. From COVID-19, there were predicted to be 23,302 excess deaths, making up most of the overall predicted excess deaths.[5]

### These disparities were pronounced in COVID-19 death rates.

Age-adjusted COVID-19 mortality rates (per 100,000) by race, Central Indiana, age 55+, 2021



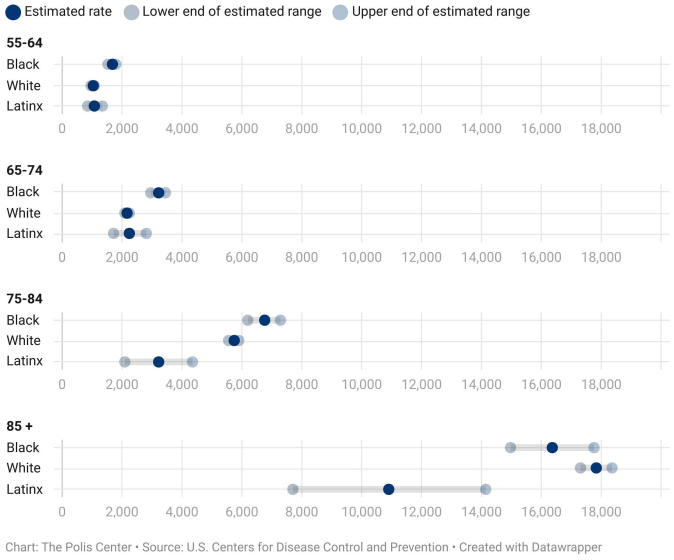

Source: CDC Wonder

Compared to the number of expected deaths, 1,969 more Hoosiers died of Alzheimer's disease since February 1, 2020.[6] Similar trends were seen nationally. An analysis of Medicare enrollees showed that excess mortality was twice as high for older adults with dementia in the early phase of the COVID-19 pandemic than for those without dementia.[7] Higher than average deaths were also observed for hypertensive diseases in Indiana since February 1, 2020, with 2,721 deaths above average. Deaths due to other causes like diabetes and cerebrovascular disease also saw higher numbers than average.[8]

Multiple factors may have contributed to the increase of diseases beyond COVID-19 throughout the pandemic.9 According to the World Health Organization, excess mortality during the pandemic can be attributed to a disruption in health care services such as lack of access, reduced doctor visits for primary care, disruption in treatments, and travel disruptions.10
The pandemic caused a significant negative impact, and additional research is needed to fully understand the reasons behind excess mortality and find steps to reduce it. The indirect effects of COVID-19, including increased use of telehealth, decreased access to community resources, and increased social isolation may also have impacted health outcomes. These effects disproportionately affect older adults with dementia who often have sparse social networks and increased dependence on health systems.

## Racial and ethnic disparities persisted across most age groups

Central Indiana mortality rates (per 100,000) by age and race, 2021




Source: U.S. Centers for Disease Control and Prevention

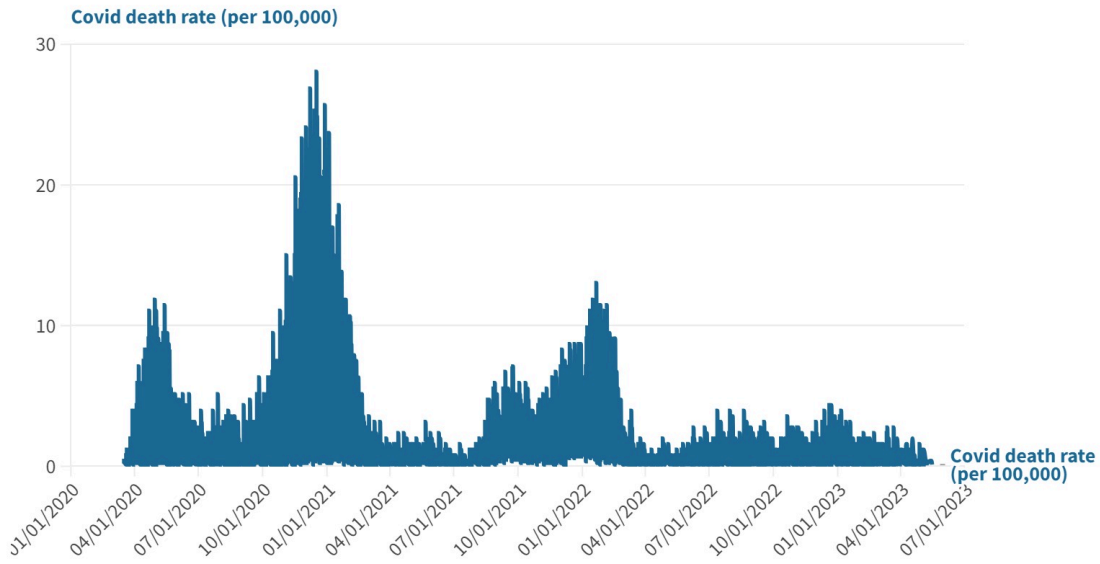
## DISABILITY

According to the CDC, disability is defined as any condition of the body and mind that makes it more difficult for a person to do certain activities and interact with the world around them.[11] The types of disabilities include impairments affecting vision, movement, thinking, remembering, learning, communicating, hearing, mental health, and social relationships.[12] The prevalence of disabilities in the older adult population provides a measure of the impact of chronic conditions on quality of life and suggests the proportion of adults who are able to remain active and independent as they age.[13]

In 2021, 18 percent of those age 55-64 in Central Indiana had a disability, compared with 29 percent for those age 65-84 and 66 percent of those age 85 and over. Ambulatory disability is the most common type of disability in the older adult population in Central Indiana, followed by independent living and hearing disability. Between 2016 and 2021, overall disability rates fell by three percent for the older adult population, following trends from 2015 to 2020. Disability can be conceived as a gap between individuals' capacities (physical, cognitive, and sensory) and their performance in daily activities and participation in social life.[14,15]

## Daily Indiana Covid Death Rate

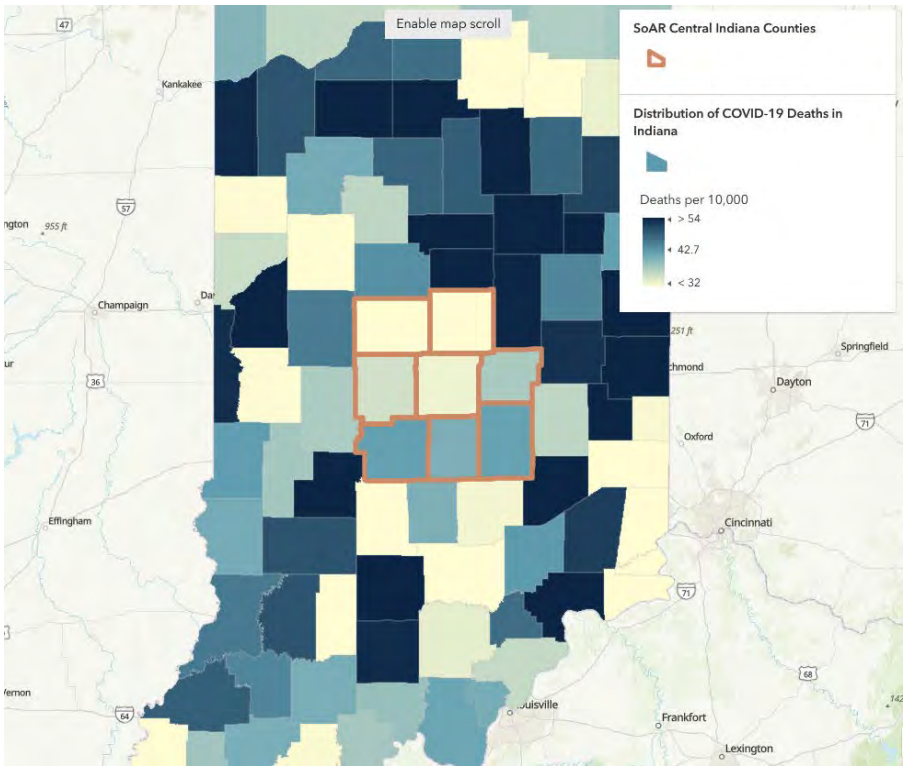
Age 50+




Source: Indiana State Department of Health

## Distribution of COVID-19 deaths (as of March 10, 2023) in Indiana

Deaths per 10,000




Source: Indiana State Department of Health

These physical and social barriers result in loss or limitation of opportunities to participate at an equal level in normal community life.[16] This functional disability in older adults is routinely measured by their ability to perform activities of daily living (ADL).[17] [18]

According to the 2021 results of the Community Assessment Survey for Older Adults (CASOA), Central Indiana adults age 60 and older found that maintaining their homes (57 percent, up from 46 percent since 2017) or yards (45 percent, down from 50 percent in 2017) was at least a minor problem.[19] Activities of daily living were also a challenge for many. Nearly two-thirds (65 percent) of older adults reported that doing heavy or intense housework was at least a minor problem.

## Increased mortality in 2021 was driven by COVID-19, increases in Alzheimer's and diabetes, and a halt in the decline of cancer and heart disease.

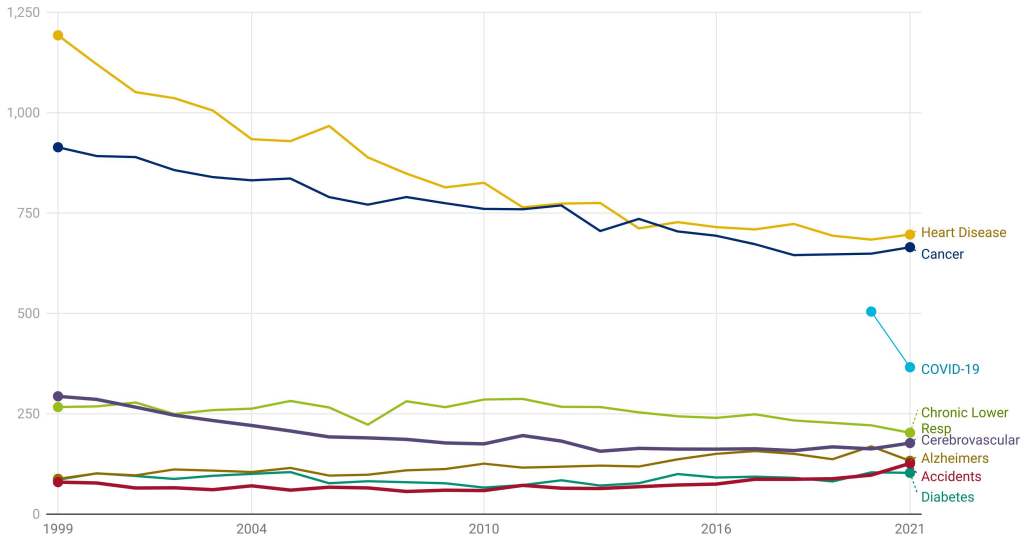



Chart: The Polis Center • Source: U.S. Centers for Disease Control and Prevention • Created with Datawrapper

Source: U.S. Centers for Disease Control and Prevention

# NOTABLE HEALTH CHANGES IN CENTRAL INDIANA

The health needs of older adults are different than those of younger age groups. Common chronic conditions affecting older adults are often accompanied by functional disability, making it more difficult to participate in typical daily activities and interactions and potentially reducing their quality of life. Despite some improvement in self-management of symptoms, treatments, and lifestyle choices, the rates of some chronic diseases still were trending in the wrong direction.

## DEPRESSION

Clinical depression is a common and serious mood disorder. It causes severe symptoms that affect how one feels, thinks, and approaches daily activities, such as sleeping, eating, or working. Statewide, rates of depression for Hoosiers age 55 and older were stable from 2011 to 2021. In 2021, adults age 55 to 64 were more likely to be depressed than those age 65 and older (23 percent versus 16 percent, respectively).[20] The rates were higher for women than men

(32 percent versus 16 percent, respectively) and highest (44 percent) among Indiana households with an income of less than $15,000.

These numbers likely underrepresent the magnitude of clinical depression among the older adult population due to underreporting. According to the 2021 CASOA report for Central Indiana, 44 percent of older adults said feeling depressed is at least a minor problem, 44 percent said dealing with loss of a close family member or friend is a problem, and 33 percent said experiencing confusion or forgetfulness is at least a minor problem. Accurate diagnosis of depression in older adults is important because undiagnosed or misdiagnosed depression can eventually culminate in other mental health and social problems, such as decreased cognitive and social functioning and increased suicide rates. Although women are more likely to be diagnosed with depression,[21] men are more likely to commit suicide and are less likely to seek mental health help as compared to women[22] and are less likely to be appropriately diagnosed.[23] Men over age 55 commit suicide at five to six times the rate of women. Since 1999, national and statewide suicide rates have been increasing for both men and women, although the rate of increase for women is lower.[24] From 2019-2021, suicide deaths per 100,000 adults age 65+ in Indiana stood at 17.4, slightly above the national average of 16.9.[25]

When depression and depressive symptoms are diagnosed, many antidepressant medications are safe and well tolerated in older populations[26] and considered the first line of treatment.[27] Older individuals also benefit from receiving therapy from a mental health professional (psychiatrist, psychologist, or counselor) as an effective method of treating depression.[28] However, a growing body of evidence suggests undertreatment of depressive disorders in the older population is widespread.[29] Treatment approaches that actively elicit and consider the preferences of the older adult may help to address this.[30] While screening, diagnosis, and treatment of depression is critical, treatment in the older adult populations comes with its own risks. Polypharmacy, the prescription of multiple drugs to an individual, can lead to increased risk of adverse drug events, drug-interactions, medication non-adherence, and reduced functional capacity.

## ALZHEIMER'S DISEASE

"Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills, and, eventually, the ability to carry out the simplest tasks." [31] It is the

### Suicide rates rose among older men in Central Indiana.

Suicide rates per 100,000, age 55+ by gender

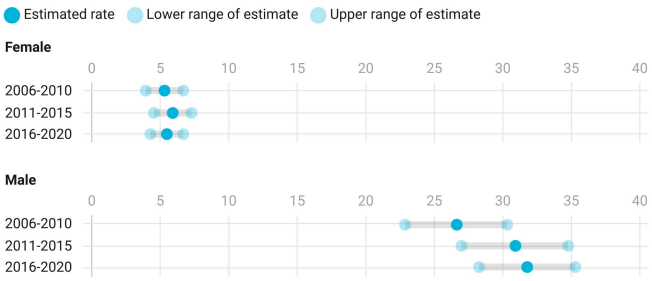



Chart: The Polis Center • Source: U.S. Centers for Disease Control and Prevention • Created with Datawrapper

Source: U.S. Centers for Disease Control and Prevention

**What to look for in this chart:**

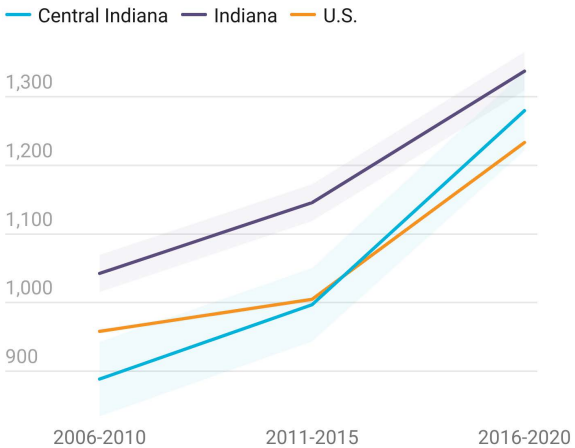
**Are there differences by gender?** Compare the four female data points and the four male data points.

**Are rates changing over time?** Within each gender group, each row is a five year time span. Move down the rows to move forward in time.

**Are changes large enough to be statistically meaningful?** The pale dots represent the range of our estimate. Changes in female rates are probably not statistically meaningful because the estimate ranges overlap. For male rates, the change between 2009 and 2014 is probably statistically meaningful.

### Alzheimer's death rates are increasing quickly among those 85 or older.

Alzheimer's deaths among those age 85+ per 100,000




Source: U.S. Centers for Disease Control and Prevention

most common cause of dementia[32] among older adults, but it is not a normal part of aging.[33] The prevalence of Alzheimer's disease in the U.S. is increasing. An estimated 5.8 million Americans age 65 and older are living with Alzheimer's disease. By 2050, the number of Americans age 65 and older with Alzheimer's dementia is projected to reach 13.8 million, increasing 137 percent from 2020. While death due to other chronic conditions that impact the older adult population has either decreased or remained steady, death due to Alzheimer's disease has increased over the last decade for older adults. In 2021, Alzheimer's disease was the sixth leading cause of death in Central Indiana for adults age 55+, although the prevalence decreased between 2020 and 2021.[34]

## DRUG OVERDOSE DEATHS

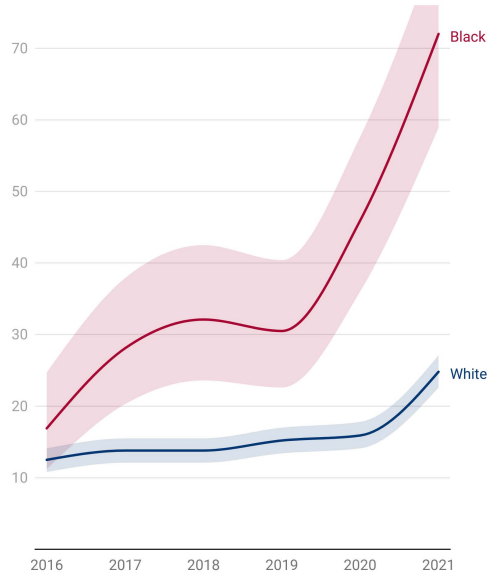
According to the CDC,[35] for those age 55 and older in the U.S., the number of drug overdose deaths[36] increased by more than 61 percent between 2018 and 2021.[36] This trend is similar for Indiana and Central Indiana. Racial and ethnic disparities in drug overdose deaths persist. National disparities worsened between 2020 and 2021, where the number of drug overdose deaths rose 31 percent for Black older adults but only 20 percent for White older adults. In Indiana, drug overdose deaths rose 55 percent for Black older adults and 59 percent for White older adults. However, in Central Indiana, White older adults experienced a 57 percent increase compared to 26 percent for Black older adults. To learn more about factors influencing higher rates of opioid-related deaths among Black older adults, please read 'Highlighting Equity' below.

## OPIOID USE DISORDER

Opioid use disorder (OUD is defined as a problematic pattern of opioid use that leads to serious impairment or distress. The use of prescription opioids is considerably higher in older age groups due to multiple chronic conditions leading to chronic pain. As such, this age group is at a higher risk of developing OUD due to availability of prescription opioids and increased vulnerability resulting from overall health conditions.

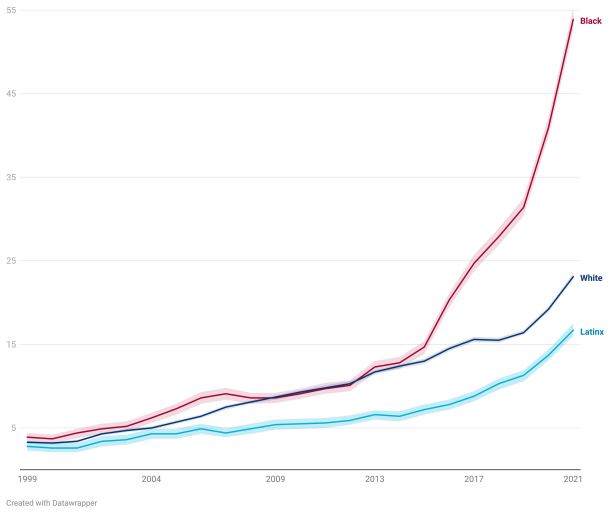
## Drug overdose deaths among older adults increased dramatically, especially among Black individuals

**Drug** overdose deaths in **Indiana** per 100,000 adults age 55+




Source: U.S. Centers for Disease Control and Prevention

**Drug** overdose deaths in **nationally** per 100,000 adults age 55+




Source: CDC Wonder

Nationally, opioid overdose has increased death rates for those age 55 and older across all races. Between 2018 and 2021, the age-adjusted opioid overdose death rate increased from 14 per 100,000 older adults to 23 per 100,000 older adults. A similar trend was found for Indiana. Between 2018 and 2021, the age-adjusted opioid overdose death rate in Indiana increased from 13 per 100,000 older adults, to 26 per 100,000 older adults. The age-adjusted rate is unavailable for Central Indiana. However, the crude rate of older adult opioid overdose deaths in Central Indiana increased from 85 per 100,000 in 2018 to 193 per 100,000 in 2021.

HIGHLIGHTING EQUITY

## BLACK DRUG OVERDOSE RATES HIGHER THAN WHITE RATES

Between 2017 and 2021, drug overdose deaths increased slightly for White Hoosiers,[37] but nearly doubled for Black Hoosiers. Below are some factors that have influenced this increase in drug use (primarily opioids) and death rates among this population:

### *INTERPERSONAL FACTORS: FEAR OF LEGAL CONSEQUENCES*

The "War on Drugs" movement that began in the 1980s created severe penalties for nonviolent drug offenses, which resulted in disproportionate rates of incarceration for people of color in comparison to White Americans. This, as well as other numerous historical events, have sown mistrust within Black communities toward the healthcare and criminal justice systems and created fear that seeking treatment for opioid use will result in arrest or incarceration.

### *COMMUNITY FACTORS: LESS ACCESS TO PRESCRIBED OPIOIDS*

Studies have shown that Black older adults who experience chronic pain may be untreated or under-treated for their pain,[39] and are significantly less likely to be prescribed opioid medications for pain than White patients. This disparity may be attributed to underestimating Black patients' self-reported pain, as well as stereotyping and discrimination by providers.[40] Although this lack of access to prescription opioids created somewhat of a protective effect for Black patients against prescription-opioid misuse, it also led to an increase in people of color accessing illegal versions of these drugs, which are often laced with synthetic opioids such as fentanyl. [41] An analysis of opioid deaths in large metro areas found that 70 percent of opioid-related deaths among middle-aged Black adults were tied to synthetic opioids, compared to only 54 percent of White and 56 percent of Latinx opioid-related deaths. Between 2014 and 2017, synthetic opioid-related death rates increased by over 800 percent among Blacks, the sharpest increase among all races and ethnicities.[42]

### *POLICY FACTORS: DISPARITIES IN ACCESS TO TREATMENT*

Black people with opioid use disorder often have less access than White people to the full range of medication-assisted treatment options available. While both buprenorphine and methadone are effective treatments, buprenorphine is often considered a less stigmatizing and disruptive option. Methadone treatments require daily visits to methadone clinics, mandatory counseling, and regular and random drug testing. In contrast, buprenorphine is an office-based treatment that can be administered by a primary care physician. However, studies have shown that methadone clinics are most common in low-income areas with greater proportions of people of color, while buprenorphine treatment is most accessible in residential areas with more White, higher-income patients.[43] Buprenorphine treatments are most often paid for either out-of-pocket (40 percent) or by private insurance (34 percent), while Medicare and Medicaid only accounted for 19 percent of visits.[44] Although most Medicare Part D plans included buprenorphine treatments, as of 2018, 65 percent of these plans have some sort of restricted coverage for this medication.[45] This further created disparities in access for Black older adults who rely on Medicare for health coverage. Even though both Black and White patients experience similar rates of opioid use disorder, White patients were 35 times more likely to receive a buprenorphine prescription than Black patients.[46]

## FALLS

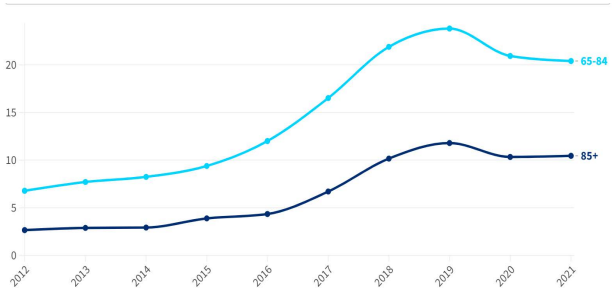
Falls are the leading cause of fatal and non-fatal injuries for older Americans.[47] The America's Health Rankings 2023 Senior Report ranked Indiana as 40th nationally regarding the percentage of adults age 65 and over experiencing a fall (30 percent).[48] With the growing older adult population, falls and related complications are expected to increase. In Indiana, the number of deaths from falls for older adults (55+) increased from 514 in 2018 to 632 in 2021.[49] In Central Indiana, the number of deaths from falls increased from 112 in 2018 to 164 in 2021. The average mortality rate from falls increased by 46 percent in Central Indiana and 23 percent statewide from 2018-2021. During 2021, older adult men in Indiana experienced a higher number of deaths from falls (333) compared to women (299). Similar to the state of Indiana, older adult men in Central Indiana experienced a higher number of deaths (91) compared to women (73) in 2021. According to the results of the 2021 Community Assessment Survey for Older Adults, 32 percent of older adults in Central Indiana reported falling or injuring themselves in their own homes, highlighting the need for risk factor interventions, including home modifications. See the Aging in Place chapter for more details about adults who choose to age at home.

## OBESITY

Obesity is a complex health condition with several causes and contributing factors. These include behavioral factors like eating habits, inactivity, medication use, and other environmental exposures (social media, pollution, chemicals, etc.). In 2021, 19 percent of Central Indiana's Medicare beneficiaries age 65 and older, including dual-eligible individuals (i.e., those Medicare beneficiaries also receiving Medicaid) were obese, compared to only six percent in 2012. This is similar to the increase in statewide obesity rates in Indiana, which were 18 percent and eight percent in 2021 and 2012, respectively. In all Central Indiana counties, the oldest-old (age 85+) had much lower obesity rates compared to the middle-old (age 65-84), likely because of lower life expectancy for obese adults.[50] Indiana ranks 39th nationally in regard to obesity prevalence in the age 65 and older population (33 percent). This obesity prevalence rate is 3.5 percent higher than the national rate.[51]

### Obesity Prevalence 2021

Obesity rate in Central Indiana by older adult age group




Source: Centers for Medicare & Medicaid Services

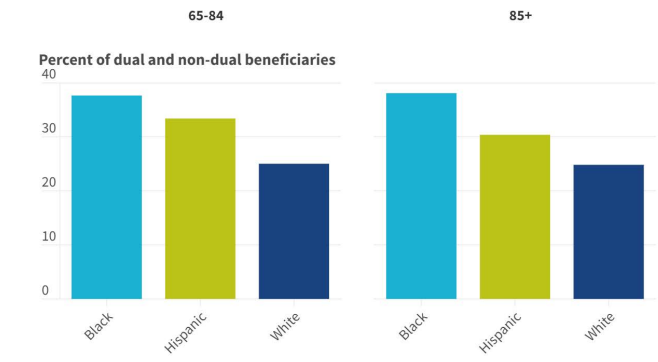
## DIABETES

Diabetes is a chronic condition that requires careful management and continuous support to avoid complications such as heart disease, eye and vision problems, kidney disease, and nerve damage. Although the burden of diabetes is often described in terms of its impact on working-age adults, diabetes in older adults is linked to higher mortality, reduced functional status, and increased risk of institutionalization.[52]

In Central Indiana, diabetes rates for older Medicare beneficiaries age 65 and older, including dual-eligibles (i.e., those Medicare beneficiaries also receiving Medicaid), remained mostly stable (27 to 26 percent) between 2012 and

### Diabetes Prevalence 2021

Diabetes rate in Central Indiana by older adult age group and race




Source: Centers for Medicare & Medicaid Services

and 2021. Diabetes rates for people of color remained higher. The age-adjusted diabetes death rate for Central Indiana older adults (age 55+) declined slightly between 2020 and 2021, from 105 per 100,000 to 103 per 100,000, but remained highest among the Black older adult population, for which the diabetes death rate dropped from 206 per 100,000 in 2020 to 174 per 100,000 in 2021.

## SOCIOECONOMIC AND LIFESTYLE RISK FACTORS

It is important to note that socioeconomic and lifestyle factors both have a large influence on chronic disease and disability trends. Risk factors include smoking, obesity, diabetes, hypertension, and mental health conditions (e.g., depression, Alzheimer's disease, and anxiety). Socioeconomic factors, such as employment rate, available jobs, increasing earning inequities and older full retirement age contribute to the fluctuation in reported disability and chronic disease incidence rates.

# ENDNOTES


1 The data for mortality trends is obtained from CDC WONDER.

2 Rates for Latinx are considerably lower, under-reporting of ethnicity on the death certificate is a factor that should be considered while interpreting these data.

3 CDC Wonder data allows for separation of non-Latinx Black and non-Latinx Whites. The data for Latinx in this report includes Latinx Whites as data for Latinx Blacks for all categories was suppressed or unreliable.

4 Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Provisional Mortality on CDC WONDER Online Database. Data are from the final Multiple Cause of Death Files, 2018-2021, and from provisional data for years 2022-2023, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/mcd-icd10-provisional.html on Jun 13, 2023.

5 Vital Statistics Gallery. CDC National Center for Health Statistics, accessed May 24, 2023, https://public.tableau.com/app/profile/dataviz8737/viz/COVID_excess_mort_withcauses_05242023/WeeklyExcessDeaths

6. Vital Statistics Gallery. CDC National Center for Health Statistics, accessed May 24, 2023, https://public.tableau.com/app/profile/dataviz8737/viz/COVID_excess_mort_withcauses_05242023/WeeklyExcessDeaths

7 Excess Deaths Twice as High for Dementia Patients During Pandemic. (2022, February 28). https://www.medpagetoday.com/neurology/dementia/97406

8 Vital Statistics Gallery. CDC National Center for Health Statistics, accessed May 24, 2023, https://public.tableau.com/app/profile/dataviz8737/viz/COVID_excess_mort_withcauses_05242023/WeeklyExcessDeaths

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10 World Health Organization. (2022). Essential health services face continued disruption during COVID-19 pandemic. Retrieved April 22, 2022, from https://www.who.int/news/item/07-02-2022-essential-health-services-face-continued-disruption-during-covid-19-pandemic"

11 "CDC, "Disability and Health Overview | CDC," Centers for Disease Control and Prevention, June 15, 2023, https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html."

12 "CDC, "Disability and Health Overview | CDC," Centers for Disease Control and Prevention, June 15, 2023, https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html."

13 "In 1980, Dr. James Fries, Professor of Medicine, Stanford University introduced the compression of morbidity theory. This theory states that "most illness was chronic and occurred in later life and postulated that the lifetime burden of illness could be reduced if the onset of chronic illness could be postponed and if this postponement could be greater than increases in life expectancy'." Stanford School of Medicine. Compression of Morbidity Theory. https://palliative.stanford.edu/overview-of-palliative-care/compression-of-morbidity-theory/y

14 Ahasan, R., Alam, M. S., Chakraborty, T., Ali, S. A., Alam, T. B., Islam, T., & Hossain, M. M. (2022). Applications of geo-spatial analyses in health research among homeless people: A systematic scoping review of available evidence. Health Policy and Technology, 11(3), 100647.

15 Albrecht, G. L., Seelman, K. D., & Bury, M. (Eds.). (2001). Handbook of disability studies.

16 Titchkosky, T. (2011). Disability Studies: An Interdisciplinary Introduction. Canadian Review of Sociology, 48(4), 454-458.

17 The activities of daily living (ADLs) is a term used to collectively describe fundamental skills that are required to independently care for oneself such as eating, bathing, and mobility

18 Instrumental activities of daily living (IADL) are those activities that allow an individual to live independently in a community. The major domains of IADLs include cooking, cleaning, transportation, laundry, and managing finances.

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