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Obesity's Impact on Illinois' Economy and Labor Force

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Executive Summary

Obesity presents a significant public health challenge in Illinois, as well as across the United States. Approximately one-third of adults in Illinois are classified as having obesity (33.4%), and another third have overweight (33.9%) in 2022.[1] These high prevalence rates not only increase the risk of additional chronic conditions, such as heart disease, type 2 diabetes, various cancers, and other health conditions, but also pose substantial implications to the economy and workforce. National studies have consistently demonstrated that obesity and its associated health conditions contribute to higher medical expenditures, reduced workforce activity and productivity, increased disability expenditures, diminished quality of life, and premature mortality.

This study estimates the economic and workforce implications of obesity in the State of Illinois, as well as the impact on state tax revenue collections and costs. The analysis focuses on adults who are currently part of the workforce or would have been in the workforce if they did not have obesity. Modeled healthcare cost implications are for commercially insured adults, including insured state and local government employees and their dependents, and Medicaid beneficiaries.

Key findings for 2022 include:

- Obesity and overweight reduce economic activity by 17.6 billion (1.7% of Illinois' 2022 gross domestic product [GDP]). Over 99% of this economic loss is attributed to obesity, with less than 1% attributed to overweight.
- Obesity and overweight have a detrimental effect on the state budget of $2.4 billion, which is equivalent to 3.6% of 2022 fiscal year revenues (Exhibit ES-1).
    - State tax revenues are lower by almost $1.4 billion (2.1%).
    - State costs for Medicaid, public assistance, and state government health insurance are higher by over $1.0 billion.
- Contributing factors to reduced economic activity and detrimental budget implications include:
    - Obesity raises health-related absenteeism and employer disability costs by nearly $1.6 billion annually.
    - 145,900 fewer Illinoisans are in the workforce due to obesity, including 100,300 additional unemployed adults and 45,600 fewer adults from premature deaths.
    - Obesity reduces earnings by 9% for women (relative to women with healthy weight).
    - Estimates of increased healthcare costs associated with obesity and overweight include:
        - $2.1 billion for employers and $1.2 billion for households with private insurance.
        - $661.1 million in higher Medicaid costs to Illinois (6.7% of state Medicaid spending).
        - $3.7 billion in federal Medicare and Medicaid spending (which we exclude from the overall economic impact number for Illinois to focus on state workforce and budget implications).

Obesity and overweight cost Illinois in 2022:

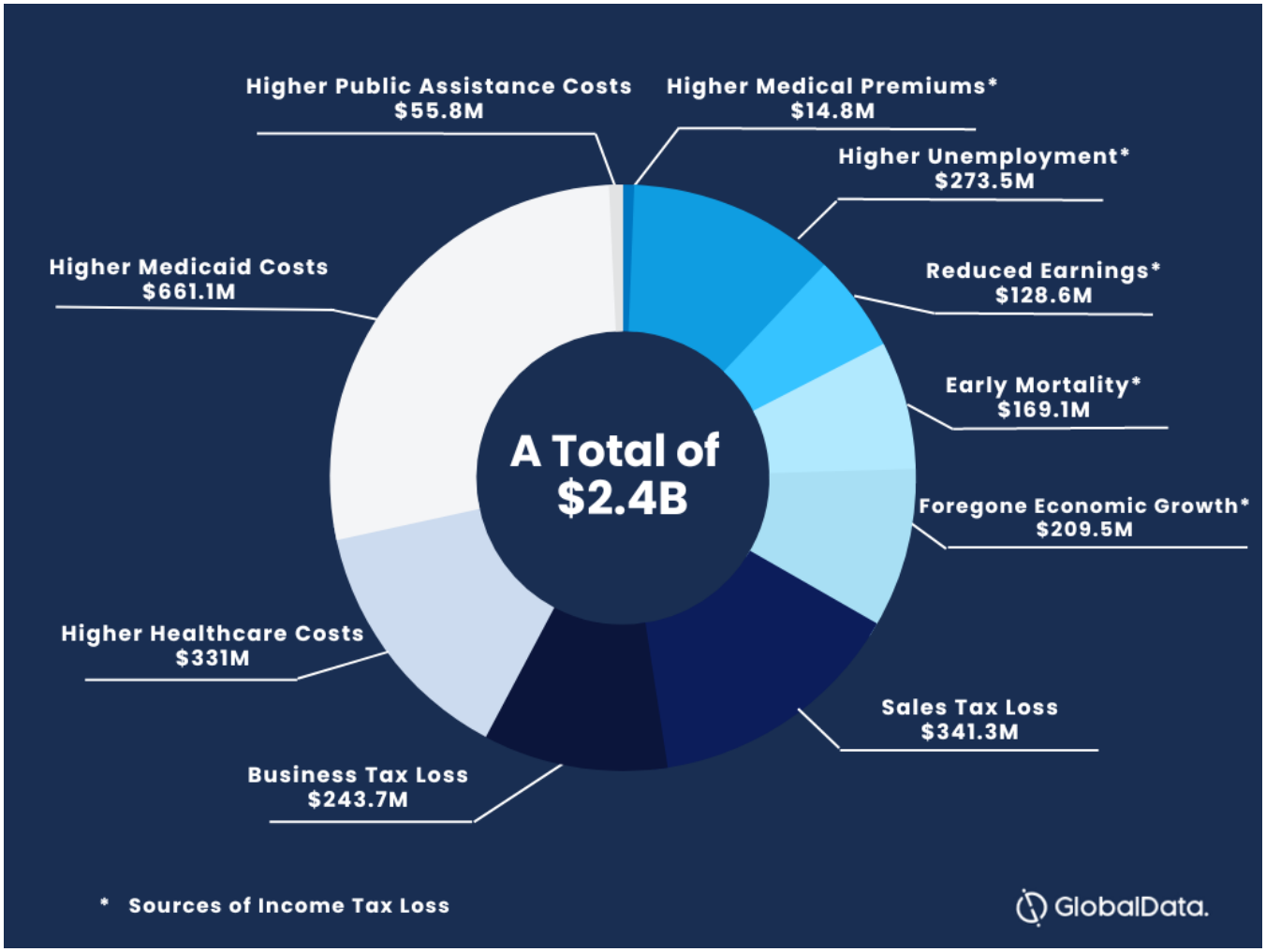
- **$17.6 billion in reduced economic activity, or 1.7% of Illinois GDP**
- **$2.4 billion impact on the state budget, or 3.6% of 2022 fiscal year revenue**
- **$1.6 billion in health-related absenteeism and disability costs**
- **145,900 fewer adults in the workforce**
- **9% reduced earnings for women with obesity**

Higher healthcare costs attributed to obesity and overweight total:

- **$2.1 billion for employers**
- **$1.2 billion for households with private insurance**
- **$661.1 million in higher Medicaid costs to Illinois (6.7% of state Medicaid spending)**
- **$3.7 billion in federal Medicare and Medicaid spending**

- Under the assumption that consumption/sales and business activities would be higher by the same 1.7% as state GDP, then in the absence of obesity and overweight, the state's consumption/sales tax revenues and business tax revenues would have been higher by about $341.3 million and $243.7 million, respectively.
- Among the 100,300 adults without employment attributed to obesity, an additional 17,300 participate in state and local assistance programs who otherwise would not if they were employed. This estimated cost to the state government is $55.8 million.

Exhibit ES- 1. State Budget Implications of Obesity and Overweight in Illinois: 2022



- Evidence-based approaches to treat obesity include intensive lifestyle modification programs such as the Diabetes Prevention Program[2], and medical interventions, such as anti-obesity medications and bariatric surgery. In our modeled scenarios, the non-Medicare adult population with obesity has improved access to treatment and achieves weight loss ranging from 5% up to 25%.
  - Under the least aggressive (5%) weight loss scenario, 26% of people with obesity would no longer meet the criteria for obesity. In the most aggressive (up to 25%) weight loss scenario, this percentage increases to 69%.
  - In the most aggressive scenario, over a 10-year period:

- The incidence of new cases of type 2 diabetes would decline by 40%, while stroke, new cases of heart disease, and heart attack incidence would decline by 35%, 24%, 19%, respectively.
- Medical costs among the modeled population would decline by an average of $11,925 per person, or $22.0 billion cumulative over 10-years at the state level.

In addition to the quantifiable financial and employment-related impacts of obesity examined in this study, there are significant effects of obesity on Illinoisans and the workforce that are more challenging to quantify in economic terms. These effects include:

- **Reduced workforce resilience**: Obesity reduces the available labor force as some jobs have specific weight or physical fitness requirements due to safety concerns or performance expectations. Other jobs require high levels of physical exertion, and obesity can limit mobility, stamina, and overall physical performance, making it more challenging to meet the physical demands of these jobs. This can lead to decreased work efficiency, increased fatigue, and a higher risk of work-related injuries.
- **Stigma and discrimination**: People with obesity often encounter stigma, bias, and discrimination in various aspects of life, including education, employment, healthcare, and relationships. These negative experiences may lead to reduced self-confidence and restricted opportunities for social and professional advancement.
- **Health complications, quality of life, and early mortality**: Obesity and its related health conditions can significantly impact mobility, physical functioning, and engagement in daily activities, hobbies, and social events. This may result in pain, discomfort, and limitations in daily functioning, leading to a diminished quality of life. Additionally, obesity is associated with a higher risk of premature morbidity and mortality.
- **Equity**: Many aspects of obesity disproportionately affect Black/African American, Hispanic, Native American, Alaskan Native persons, and women.[3–5]

The findings of this study emphasize the substantial economic impact of obesity on individuals, businesses, and the government in Illinois. They underscore the urgency of addressing obesity as a critical public health issue and implementing effective prevention and treatment strategies to mitigate its negative economic consequences. By prioritizing efforts to prevent and treat obesity, the State of Illinois can improve the well-being and economic resilience of individuals, foster a more equitable society, and cultivate a healthier workforce.

Recommendations

Prominent organizations have released evidence-based guidelines that provide valuable guidance for healthcare professionals and policymakers concerning the prevention and treatment of obesity.[6–18] Still, access to and utilization of obesity treatment remains limited.

Illinois is working to address issues of access to obesity treatment, being among the leading states covering anti-obesity medications among state employees and their dependents. The recently signed bill stipulates that "Beginning on July 1, 2024, the State Employees Group Insurance Program shall provide coverage for all types of injectable medicines prescribed on-label or off-label to improve glucose or weight loss for use by adults diagnosed or previously diagnosed with prediabetes, gestational diabetes, or obesity."[19]

The following recommendations to state policy makers and to employers can increase access to modernized[a] and evidence-based obesity care.

[a] Modern healthcare leverages science, technology, health capabilities, and cost-effective solutions to enhance quality, efficiency, and delivery of care.

State policy makers

1. **Finalize, expand and maintain access to Medicaid coverage for obesity treatment**: State policy makers can expand Medicaid coverage to include evidence-based obesity care, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery. This includes finalizing coverage for anti-obesity medication treatment and ensuring that beneficiaries can maintain access to obesity treatment with prior authorization and renewals consistent with clinical practice guidelines and standard-of-care treatment.

2. **Maintain insurance coverage for comprehensive obesity treatment**: State policy makers can demonstrate modern care for obesity by ensuring that employees and dependents covered under the State Employees Group Insurance Program maintain access to evidence-based obesity treatments, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery.

3. **Invest in community-based programs and education campaigns**: State policy makers can invest in community-based programs and infrastructure that serve as an adjunct to access to obesity treatment, ensuring individuals have access to healthy, affordable food and safe, and affordable opportunities for being physically active. Education campaigns, including educating primary care providers, can increase awareness about the causes of and health risks associated with obesity and promote evidence-based obesity treatments. Investing in community health worker (CHW) programs, for example, can be a cost-effective way to provide outreach and support to address obesity among underserved populations.[20,21]

Employers

4. **Offer insurance coverage and wellness programs for obesity care at parity with other chronic diseases**: Employers can ensure their health insurance plans cover evidence-based obesity treatments, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery. Employers can implement wellness programs that specifically address obesity prevention and management. These programs can include resources for healthy eating, physical activity initiatives, access to fitness facilities or classes, and comprehensive weight management support (inclusive of all treatment options).

5. **Foster a culture of support and inclusion**: Employers can create a culture of support and inclusion that recognizes and accommodates the needs of employees with obesity. This can involve implementing non-discriminatory policies, offering weight bias and stigma mitigation training, creating a supportive workplace environment that promotes healthy behaviors such as providing healthy food options, offering opportunities for physical activity, and providing reasonable workplace accommodations for individuals with obesity and related health conditions.

6. **Provide education and resources**: Employers can provide education and resources to employees to educate about the health risks associated with obesity as well as strategies for obesity care and weight management. This can include partnering with their health insurance program and other providers to encourage weight assessments as part of their annual physical, and offer health screenings, health coaching, and other support services.

In summary, obesity has a substantial economic impact on Illinois with 2022 estimates of **$17.6 billion in lost economic activity**, **145,900 fewer adults** in the workforce. The estimated state **budget impact of nearly $2.4 billion** includes nearly $1.4 billion in lost tax revenues and over $1.0 billion in increased costs—equivalent to 3.6% of FY 2022 tax revenues. These numbers understate the total economic implications of obesity on Illinois as they omit higher federal spending for Medicare and Medicaid costs, as well as the costs among children with obesity. Supporting individuals to treat their obesity has the potential to generate substantial medical savings while also increasing labor force participation and productivity, thereby stimulating significant economic activity.

Background

Obesity presents a significant public health challenge in Illinois, as well as across the United States. In Illinois, approximately one-third of adults are classified as having obesity (33.4%), and another third have overweight (33.9%) in 2022.[1] These high prevalence rates have profound implications for the population's health, as obesity and overweight are associated with a range of serious diseases including type 2 diabetes, cardiovascular conditions, certain cancers, and numerous other health complications, resulting in increased medical costs and premature mortality.[22–30] Studies consistently demonstrate the substantial economic impact of obesity on a national scale, with estimated direct and indirect costs accounting for 2.0% to 3.3% of the country's gross domestic product (GDP).[31,32]

These national studies underscore the substantial health, social, and economic burden imposed by obesity as well as the detrimental impact on workforce resilience. The objective of this study is to estimate the economic and workforce implications of obesity within the State of Illinois, as well as the impact on state revenues and expenditures. Our analysis primarily focuses on adults who are currently part of the workforce or would have been in the workforce if not for their obesity. Modeled healthcare cost implications are for commercially insured adults, including insured state and local government employees and their dependents, and Medicaid beneficiaries. This report provides insight on the significant impact of obesity and provides recommendations for enhancing access to modern, evidence-based obesity care. Through these efforts, we strive to address the multifaceted challenges posed by obesity and contribute to the overall well-being of individuals, the economy, and the broader health of Illinois' population.

Economic and Workforce Implications of Obesity

A healthy population is vital for driving economic growth as it expands the labor force, enhances productivity, reduces absenteeism and turnover, and allows for resources otherwise spent on healthcare to be allocated to other productive sectors. A healthy and productive workforce creates an appealing business environment for investment, attracting companies that value access to skilled workers, increased productivity, and lower healthcare expenses.

Data from the National Health Interview Survey (NHIS) shows that individuals with obesity have a higher likelihood of unemployment compared to those with healthy weight or overweight, even after considering demographic factors.[i] (Healthy weight for adults is defined as having a body mass index [BMI] between 18.5 to <25.0 kg/m^2; overweight is defined as BMI between 25.0 to <30.0 kg/m^2, and obesity is defined as BMI of 30.0 kg/m^2 or higher).[33] Men with obesity have 7% lower odds of being employed, while women with obesity have 20% lower odds. In Illinois, this translates to 100,300 fewer adults with obesity in the workforce in 2022 due to unemployment compared to a theoretic obesity-free scenario. By analyzing the 2022 Current Population Survey (CPS) data on average earnings for Illinoisans and considering the demographics of individuals who are unemployed due to obesity, as well as analyzing the 2021 American Community Survey (ACS) data on the household income distribution of Illinoisans with similar demographics, we found that the absence of these 100,300 individuals from the workforce led to a decrease of $5.5 billion in economic activity and a reduction of $273.5 million in state income tax revenues.

Our analysis also reveals that women with obesity earn 9% less than women with healthy weight, aligning with published studies.[34,35] The reasons behind this disparity are not fully understood but could be attributed to factors such as reduced working hours, lower-paid occupations due to health issues, or discrimination.[36] In 2022, obesity is associated with $2.6 billion in reduced earnings among women with a resulting $128.6 million in decreased state tax revenues in Illinois.

Obesity leads to increased health-related absenteeism and disability costs that rise with the severity of obesity, averaging $840 per employed adult with obesity in Illinois in 2022.[29,37,ii] Applied to Illinois' workforce, this totals to $1.5 billion in

reduced economic activity. Employers bear a portion of this burden through decreased productivity and higher disability insurance costs, while individuals experience reduced earnings.

The medical costs for adults with obesity and overweight are higher than costs for their peers with healthy body weight. In Illinois, higher annual costs attributed to obesity (overweight) average $2,396 ($220) for private health insurance, $3,338 ($902) for Medicaid, and $2,756 ($815) for Medicare.[28,30,ii] Taking into account the proportion of working adults with obesity, employer-sponsored insurance coverage, and the allocation of healthcare costs between employers and employees, overweight and obesity reduce pay by $105 to $475 per employee. Using the lower bound of this range, this equates to $299 million in reduced earnings for Illinoisans and a $14.8 million reduction in state income tax revenues.

Obesity is associated with a higher risk of various medical conditions and premature death, leading to approximately 19,000 premature deaths per year in Illinois.[38] We estimated the demographic distribution of people whose premature death is attributed to obesity using all-cause mortality data for Illinois from 2018 to 2021 from the Centers for Disease Control and Prevention (CDC) and attributable fractions to estimate the proportion of deaths attributed to obesity by demographics of the deceased.[39–41] Applying labor force participation rates by demographic, among the premature deaths that occurred during the prior 5 years approximately 45,600 adults would still be in the workforce. The premature deaths of these Illinoisans represent a $3.4 billion loss in state GDP and a $169.1 million loss in state income tax receipts.

The foregone economic activity from the combined impact of reduced employment, premature mortality, lower productivity, and lower earnings means less disposable income for Illinois families and businesses. Much of this disposable income would be spent on goods and services in Illinois, which in turn would create additional jobs and economic activity. The multiplier effect on additional economic activity is calculated based on the proportion of disposable income that people spend versus save, and the proportion of spending that households and businesses spend in Illinois versus purchases from out-of-state. We use the average US long term savings rate of 8.91% as an estimate of the savings rate for Illinoisans.[42] The proportion of spending that households and business in Illinois spend in-state is unknown, but conservative estimates of 80% and 40%, respectively, are used.[43] This leads to a conservative estimate of the state multiplier of 1.4, meaning that each $100 increase in disposable income to Illinois families and businesses would create $140 in total economic activity in Illinois. We estimate that the total reduction in economic activity from the combined sources above equates to nearly $17.6 billion, meaning that in the absence of obesity Illinois' GDP could have been 1.7% higher than the state's reported GDP of over $1 trillion in 2022.[44]

The state government reported consumption/sales tax revenues of $20 billion and business tax revenues of $14.3 billion in 2022.[45] If the state's GDP were 1.7% higher, then under the assumption that sales and business activities would also have been about 1.7% higher in the absence of obesity then consumption/sales tax revenues and business tax revenues would have been higher by about $341.3 million and $243.7 million, respectively. In total, nearly $1.4 billion in lost income, sales, and business tax revenues attributed to obesity and overweight equates to 2.1% of the state's fiscal year 2022 budget.

Higher healthcare costs associated with obesity and overweight increase costs to state and local governments. For adults with private insurance, in Illinois overweight and obesity are associated with, respectively, $220 and $2,396 in higher annual medical costs.[28,30,iii] Accounting for overweight and obesity rates, estimates that 78% of state and local government employees participate in their employer-sponsored plan, that 34% of participating employees insure a second adult, and that government employers cover approximately 71% of healthcare premiums, state and local governments pay about $625 extra in healthcare costs attributed to overweight and obesity per participating employee. For Illinois, this equates to approximately $331 million higher annual healthcare costs for state and local government employees and dependents.

Obesity and overweight also raise the cost of care for Medicaid beneficiaries. In Illinois, the added cost for overweight is estimated at $902 and the added cost for obesity is $3,338.[30] Illinois pays 35.1% of Medicaid costs, with the federal government paying the remainder.[46] Estimates of overweight and obesity among Illinois' adult Medicaid beneficiaries are 29.8% and 35.1%, respectively. Our estimate is that Illinois incurred $661.1 million higher Medicaid costs in 2022 attributed to overweight and obesity, equal to 6.7% of the state's share of Medicaid spending.

Analysis of the NHIS finds that people with obesity who are unemployed have higher participation in state and local public assistance programs relative to people with obesity who are employed. As discussed earlier, obesity is associated with higher rates of being unemployed. Of the estimated 100,300 adults unemployed due to obesity, about 17,300 are participating in public assistance programs who otherwise would not if they were employed. This additional cost to the state government is estimated to be $55.8 million.

In summary, the economic impact of obesity and overweight in Illinois is substantial, resulting in 145,900 fewer adults in the workforce, $17.6 billion in lost economic activity, a reduction of nearly $1.4 billion in state tax collections, and additional state and local government costs of over $1.0 billion. These estimates may be conservative, as they do not account for pediatric obesity costs and the less quantifiable impact of reduced productivity while at work (presenteeism[29]) due to obesity-related health conditions. Moreover, the estimate of foregone economic activity does not consider the potential benefits of reduced healthcare costs and a more resilient workforce in attracting new economic investments.

While this study focuses on costs to Illinois, national studies report that Medicare patients with obesity and overweight experience higher medical costs compared to patients with healthy body weight.[30] When applied to the Medicare population in Illinois, along with increased federal costs for Medicaid, it suggests that the federal government's spending on Medicare and Medicaid in Illinois is approximately $3.7 billion higher due to obesity and overweight. Furthermore, an estimated $2.1 billion in additional healthcare expenses by employers and $1.2 billion in additional healthcare spending by households with private insurance could be utilized for other purposes.

In addition to the financial and work-related impacts of obesity modeled in this study, additional detrimental impacts of obesity on Illinoisans and the workforce are less quantifiable.

- **Obesity reduces workforce resilience**: People with obesity and obesity-related comorbid conditions such as type 2 diabetes experienced greater risk of COVID-19 severity, hospitalization risk, and mortality risk which had contributed to slower economic activity.[47,48] For many occupations, obesity reduces the available labor force. Some occupations have specific weight or physical fitness requirements due to safety concerns or performance expectations. Other occupations require high levels of physical exertion, and obesity can limit mobility, stamina, and overall physical performance, making it more challenging to meet the physical demands of these jobs. This can result in decreased work efficiency, increased fatigue, and a higher risk of work-related injuries.

- **Stigma and discrimination**: People with obesity often face stigma, bias, and discrimination in various areas of life, including education, employment, healthcare, and interpersonal relationships.[49] This can result in reduced self-confidence, and limited opportunities for social and professional advancement.

- **Health complications, quality of life, and early mortality**: Obesity is associated with a higher risk of developing various health complications, including type 2 diabetes, heart disease, stroke, certain cancers, musculoskeletal conditions, and sleep apnea. These conditions can have long-term effects on health, well-being, and life expectancy, impacting both physical and emotional aspects of an individual's life. Obesity and related health conditions can limit mobility, impair physical functioning, and restrict participation in daily activities, hobbies, and social events. These conditions can further decrease quality of life by causing pain, discomfort, and limitations in daily functioning.

- **Equity**: Many aspects of obesity disproportionately affect Black/African American, Hispanic, Native American, Alaskan Native persons, and women.[3–5] Women are disproportionately affected by the detrimental impact of obesity on labor force participation and pay. Racial and ethnic minorities experience higher rates of obesity. The detrimental financial aspects of obesity affect household income leading to greater inequities. Obesity, therefore, exacerbates current inequities.

Study findings emphasize the considerable economic consequences of obesity on individuals, businesses, and the government in Illinois, highlighting the need to address obesity as a public health concern. It is crucial to implement effective prevention and treatment strategies to mitigate the negative economic impacts. Illinois is currently facing a

shortage of workers in various industries, and the projected slow population growth for the working-age population further underscores the importance of maintaining a healthy and available workforce to drive Illinois' economic growth.

Potential Value of Treating Obesity

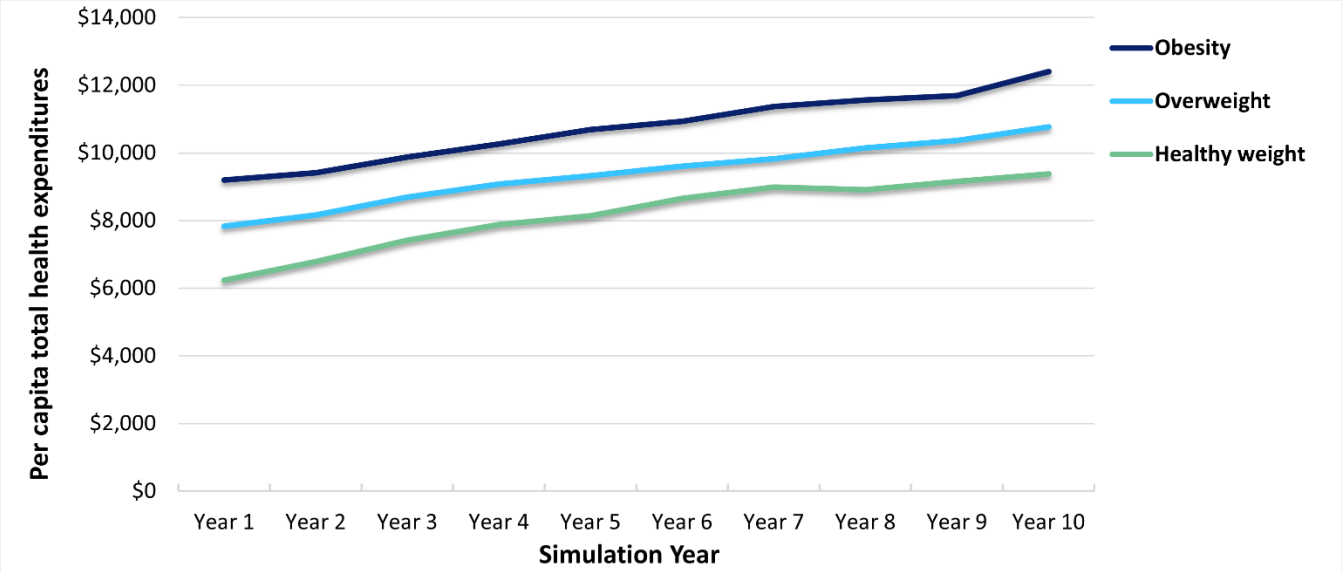
To demonstrate the value of treating obesity in Illinois, we used a published computer simulation model, the Disease Prevention & Treatment Microsimulation Model (DPTMM),[50–54] to quantify the health and economic benefits if adults in Illinois with obesity reached certain weight loss goals achievable with obesity treatment.[iv] The simulation uses a constructed population file that is representative of the non-Medicare adult population in Illinois.[v] Weight loss is one component of treating obesity, with weight loss contributing to improvements in blood pressure, cholesterol levels, blood sugar levels, and other health benefits.[55] Specifically, we modeled scenarios achieving body weight loss of up to 5%, 10%, 15%, 20%, and 25% among adult residents with obesity.

Obesity is a complex and chronic disease that requires a multifaceted approach to treatment. Successful treatment of obesity typically involves a combination of intensive lifestyle interventions, behavior modifications, and medical treatments, based on the health care professional's evidence-based assessment of the patient and shared decision making on treatment goals and approach.

- **Lifestyle and behavioral interventions**: The cornerstone of obesity treatment is intensive lifestyle modification programs, with studies showing average weight loss up to 8% of initial body weight.[56,57] The Diabetes Prevention Program, for example, is well established as a cost-effective intervention to achieve modest weight management.[2] The U.S. Preventive Services Task Force recommends that primary care clinicians screen all adults for obesity, and that all adults with obesity be offered intensive multicomponent behavioral interventions.[57] Programs that offer intensive lifestyle counseling and intervention might include a registered dietitian or other trained professional to help individuals develop a personalized nutrition and physical activity plan that meets their specific needs and goals. Counseling often includes behavioral strategies such as goal setting, self-monitoring, and problem-solving to help individuals identify and overcome barriers to weight loss.
- **Medical treatments**: Medical treatments may be necessary for individuals with obesity who may not achieve sufficient weight loss through intensive lifestyle interventions and behavior modifications alone. Medical treatments may be part of initial therapy based on the health care professional's assessment. These treatments include prescription anti-obesity medications and bariatric surgery.
    - **Prescription anti-obesity medications** should only be used under the supervision of a healthcare provider and in combination with lifestyle interventions. Studies indicate that patients who combine anti-obesity medications with lifestyle interventions achieve weight loss that is 3% to 12% higher compared to patients not using such medications.[58] Recent clinical trials have reported average weight loss of 15% to 20%, or even higher in many patients.[59–62]
    - **Metabolic/bariatric surgery** may be recommended for individuals with obesity who not achieve sufficient weight loss with lifestyle interventions and medical treatments or who meet surgical care guidelines.[17] It can help individuals achieve significant weight loss and improve overall health. However, it is a major surgical procedure that carries risks and requires lifelong follow-up care. Different types of bariatric procedures have been associated with an average weight loss of 25% or higher.[63,64]

Managing obesity can result in substantial long-term economic savings. Our analysis of adults in Illinois shows that among the non-Medicare population, individuals with obesity are estimated to have on average nearly $2,600 in excess medical costs annually compared to similar adults with healthy weight over the next decade (Exhibit 1).

Exhibit 1. Estimated Health Care Spending by Body Weight Status per Person-year



Source: GlobalData

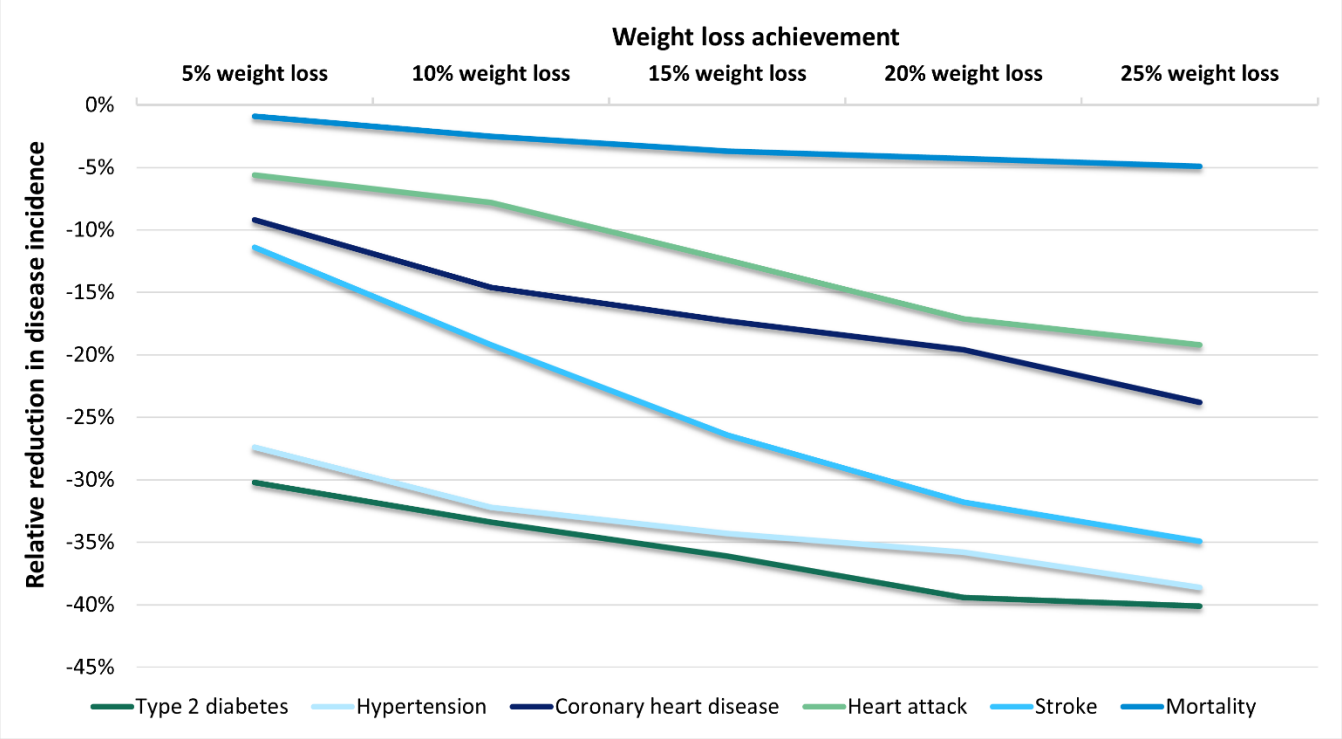
Significant health benefits can be achieved for adults with obesity by maintaining just a 5% loss of body weight. Over the next 10 years, this modest weight loss could result in a 30% lower incidence of type 2 diabetes, 11% fewer strokes, 9% reduction in onset of heart disease, 6% fewer heart attacks, and a 0.9% reduction in overall mortality among the population with obesity (Exhibit 2). The potential improvements become even more substantial for those who can sustain greater weight loss. For this modeled cohort, sustaining 25% weight loss could potentially reduce the onset of type 2 diabetes by 40%, incidence of stroke by 35%, onset of heart disease by 24%, incidence of heart attack by 19%, and overall mortality by 4.9%.

These clinical improvements also translate into significant cost savings in healthcare expenditures. Among those who successfully achieve a 5% weight loss in the first year, an average savings of $334 can be expected. If this weight loss is maintained over the following decade, the cumulative medical cost savings per person could reach $3,796 (Exhibit 3). Particularly for individuals with a BMI greater than 40 kg/m^2, sustaining a higher weight loss can lead to cumulative savings of over $16,169 in medical costs over the next 10 years (Exhibit 4). Statewide, maintaining a 5% reduction in weight among Illinois adults with obesity could save $7.0 billion in medical costs over the next decade (Exhibit 5). Potential savings rise to $22.0 billion under the scenario maintaining up to 25% reduction in weight—though many people with obesity will not require the full 25% weight loss to move out of the obesity range. These savings estimates exclude treatment costs, with a range of evidence-based treatment options available to achieve the modeled weight reductions.

These model results emphasize the importance and substantial benefits of long-term obesity management, particularly for individuals with higher initial BMI. By investing in sustained interventions and support systems, healthcare systems can potentially alleviate the burden of obesity-related healthcare costs over time. Preventing complications associated with obesity, such as type 2 diabetes, cardiovascular diseases, and musculoskeletal disorders, can result in significant savings in medical expenses, hospitalizations, and long-term care. Moreover, a focus on long-term obesity management promotes

productivity, reduces absenteeism, and positively impacts workplaces and economies by enabling individuals to lead healthier and more active lives.

Exhibit 2. Estimated Clinical Benefits of Weight Loss Among Individuals with Obesity



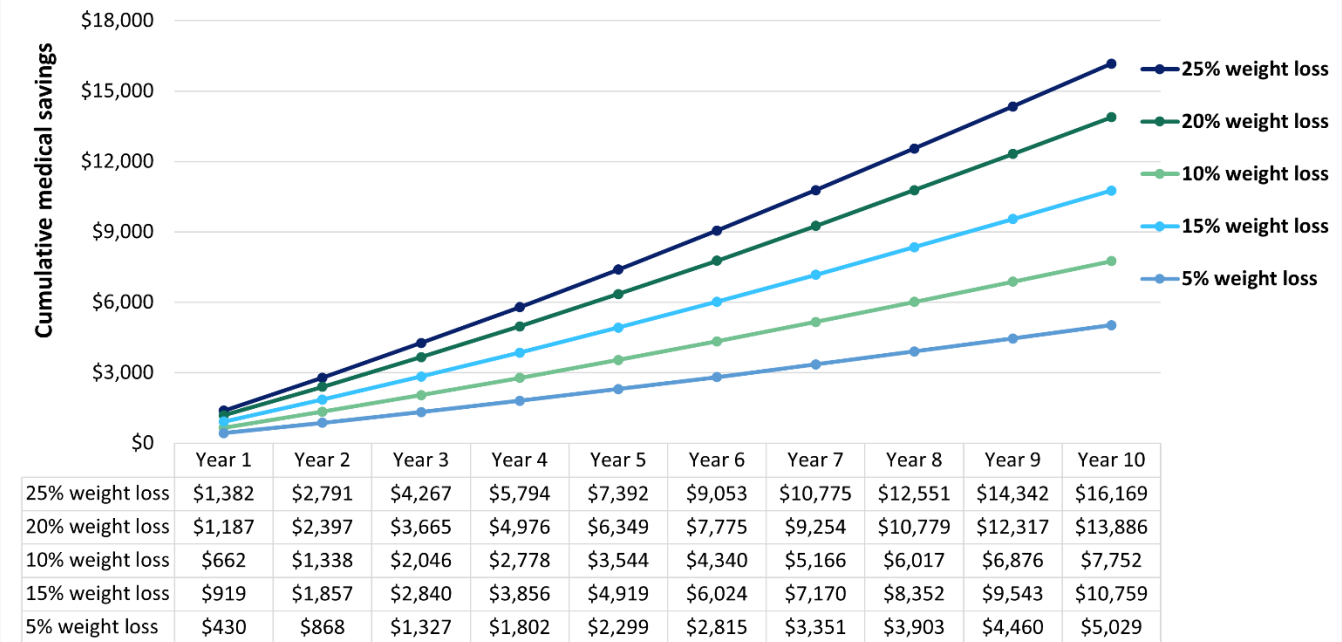
Source: GlobalData

Exhibit 3. Estimated Cumulative Medical Savings Due to Weight Loss Among Individuals with Obesity

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
25% weight loss	$1,050	$2,086	$3,193	$4,337	$5,535	$6,762	$8,022	$9,290	$10,585	$11,925
20% weight loss	$941	$1,869	$2,861	$3,887	$4,960	$6,060	$7,189	$8,325	$9,486	$10,686
15% weight loss	$781	$1,551	$2,374	$3,225	$4,115	$5,027	$5,964	$6,906	$7,870	$8,865
10% weight loss	$567	$1,127	$1,725	$2,343	$2,990	$3,653	$4,333	$5,018	$5,718	$6,442
5% weight loss	$334	$664	$1,016	$1,381	$1,762	$2,153	$2,554	$2,957	$3,370	$3,796

Source: GlobalData

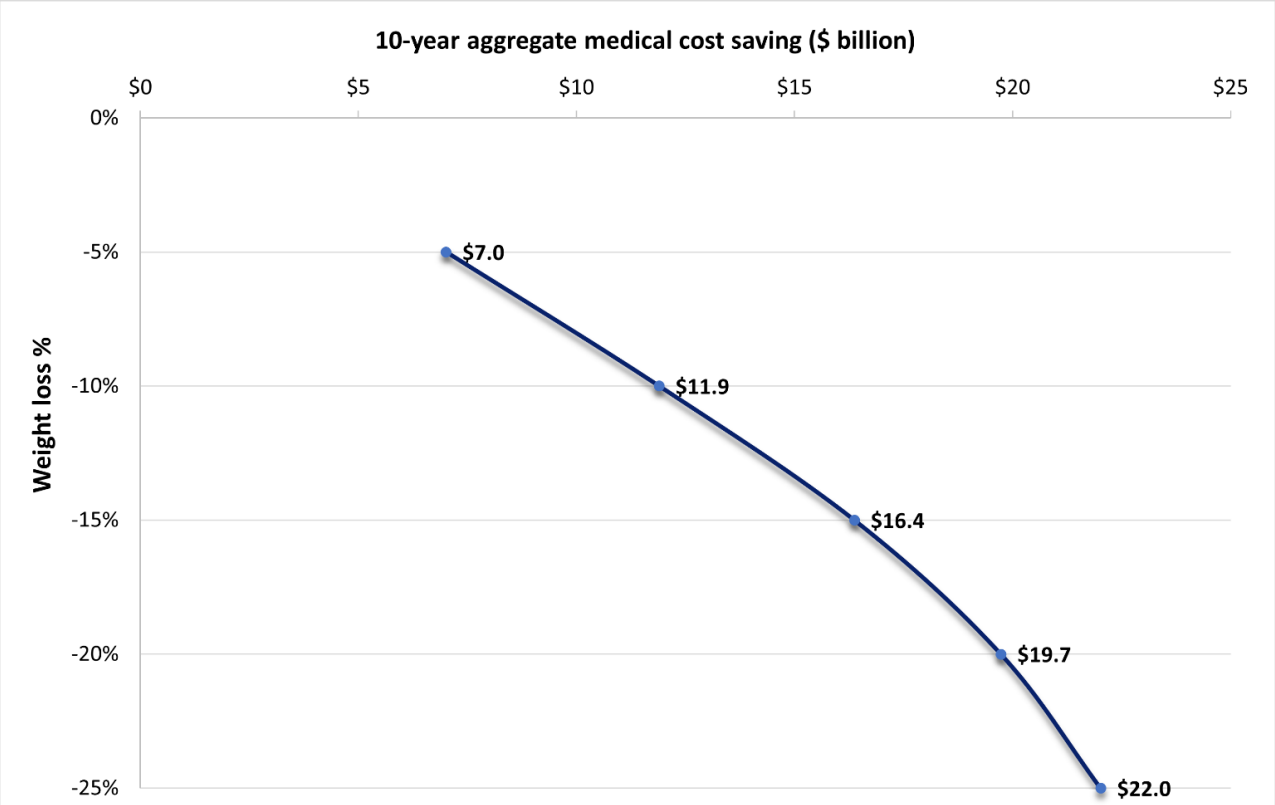
Exhibit 4. Estimated Cumulative Medical Savings Due to Weight Loss Among Individuals with Class III Obesity



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
25% weight loss	$1,382	$2,791	$4,267	$5,794	$7,392	$9,053	$10,775	$12,551	$14,342	$16,169
20% weight loss	$1,187	$2,397	$3,665	$4,976	$6,349	$7,775	$9,254	$10,779	$12,317	$13,886
10% weight loss	$662	$1,338	$2,046	$2,778	$3,544	$4,340	$5,166	$6,017	$6,876	$7,752
15% weight loss	$919	$1,857	$2,840	$3,856	$4,919	$6,024	$7,170	$8,352	$9,543	$10,759
5% weight loss	$430	$868	$1,327	$1,802	$2,299	$2,815	$3,351	$3,903	$4,460	$5,029

Source: GlobalData

Exhibit 5. Estimated Statewide 10-year Medical Cost Savings by Weight Loss Scenario



Source: GlobalData.

Note: This chart shows the estimated cumulative savings over 10 years if Illinois could achieve body weight loss of 5%, 10%, 15%, 20%, or 25% among the current population with obesity.

Recommendations to Improve Access to Obesity Treatment

A multitude of state, national, and international organizations have released evidence-based guidelines concerning the prevention and treatment of obesity. These recommendations serve as valuable guidance for healthcare professionals and policymakers in tackling this significant public health concern.

- **The National Institutes of Health** (NIH) has developed guidelines for the management of overweight and obesity in adults, including recommendations for lifestyle interventions, pharmacotherapy, and bariatric surgery.[6]
- **The Centers for Disease Control and Prevention** (CDC) has developed a framework for obesity prevention and control that includes recommendations for community-based interventions and clinical management of obesity.[7]
- **The American Medical Association** (AMA) and other medical associations such as the **American Gastroenterological Association** (AGA) and the **Endocrine Society** have issued recommendations for the prevention and treatment of obesity, including the need for healthcare professionals to provide patients with evidence-based weight management strategies[8,9] and providing insurance coverage parity for emerging obesity treatment options.[10]

- **The American Heart Association** (AHA) has issued guidelines for the treatment of obesity in adults, including recommendations for diet, physical activity, and behavioral therapy.[11,12]
- **The American Diabetes Association** (ADA) has issued guidelines for the prevention and treatment of obesity in the context of preventing and treating diabetes.[13]
- **The Obesity Society** has issued position statements on the management of obesity, including recommendations for increasing access to obesity treatment, addressing weight bias and stigma, and promoting research into the causes and treatment of obesity.[14,15]
- **The Obesity Action Coalition** has issued policy statements to advocate for improved access to obesity treatment and address weight bias.[16]
- **Obesity Medicine Association: Leaders in Obesity Medicine** includes healthcare professionals committed to a comprehensive, evidence-based approach for addressing obesity.[65]
- **The American Society for Metabolic and Bariatric Surgery** (ASMBS) and the **International Federation for the Surgery of Obesity and Metabolic Disorders** (IFSO) have published new guidelines for weight-loss surgery.[17]
- **The World Health Organization** has developed guidelines for the management of overweight and obesity in adults, including recommendations for lifestyle interventions, pharmacotherapy, and bariatric surgery.[18]

Illinois-based organizations are involved in efforts to address obesity:

- **The Illinois Department of Public Health** (IDPH) provides treatment and prevention resources for entities and sponsor reports and support state-led nutrition programs.[66]
- **The Illinois Public Health Institute** (IPHI) is involved in multiple activities to mobilize stakeholders and form partnerships designed to address obesity.[67] Signature programs include the following:
    - **The Illinois Alliance to Prevent Obesity** (IAPO) is a coalition to increase the capacity of community-based organizations to address nutrition, physical activity, and chronic health conditions in Illinois.
    - **The Illinois State Physical Activity and Nutrition** (ISPAN) implements physical activity and nutrition interventions designed to make it easier for Illinoisans to live the healthiest lives possible—particularly focused on low-income and rural communities, and communities of color.
- **The Illinois Obesity Society** provides opportunities for local obesity specialists to network, share best practices, and educate the medical community and the public about the disease of obesity.

Despite the availability of such recommendations and efforts from the above organizations, access to and utilization of obesity treatment remains limited.[68] Illinois is working to address issues of access to obesity treatment, being among the leading states covering anti-obesity medications among state employees and their dependents. The recently signed bill stipulates that "Beginning on July 1, 2024, the State Employees Group Insurance Program shall provide coverage for all types of injectable medicines prescribed on-label or off-label to improve glucose or weight loss for use by adults diagnosed or previously diagnosed with prediabetes, gestational diabetes, or obesity."[19]

Numerous state, national, and international organizations have released evidence-based guidelines concerning the prevention and treatment of obesity. These recommendations serve as valuable guidance for healthcare professionals and policymakers in undertaking this significant public health concern…Still, access to and utilization of obesity treatment remains limited.

The following recommendations to state policy makers and to employers can increase access to modernized[b] and evidence-based obesity care.

[b] Modern healthcare leverages science, technology, health capabilities, and cost-effective solutions to enhance quality, efficiency, and delivery of care.

State policy makers

1. **Finalize, expand and maintain access to Medicaid coverage for obesity treatment**: State policy makers can expand Medicaid coverage to include evidence-based obesity care, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery. This includes finalizing coverage for anti-obesity medication treatment and ensuring that beneficiaries can maintain access to obesity treatment with prior authorization and renewals consistent with clinical practice guidelines and standard-of-care treatment.

2. **Maintain insurance coverage for comprehensive obesity treatment**: State policy makers can demonstrate modern care for obesity by ensuring that employees and dependents covered under the State Employees Group Insurance Program maintain access to evidence-based obesity treatments, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery.

3. **Invest in community-based programs and education campaigns**: State policy makers can invest in community-based programs and infrastructure that serve as an adjunct to access to obesity treatment, ensuring individuals have access to healthy, affordable food and safe, and affordable opportunities for being physically active. Education campaigns, including educating primary care providers, can increase awareness about the causes of and health risks associated with obesity and promote evidence-based obesity treatments. Investing in community health worker (CHW) programs, for example, can be a cost-effective way to provide outreach and support to address obesity among underserved populations.[20,21]

Employers

4. **Offer insurance coverage and wellness programs for obesity care at parity with other chronic diseases**: Employers can ensure their health insurance plans cover evidence-based obesity treatments, including intensive behavioral counseling, nutrition support, pharmacotherapy, and metabolic/bariatric surgery. Employers can implement wellness programs that specifically address obesity prevention and management. These programs can include resources for healthy eating, physical activity initiatives, access to fitness facilities or classes, and comprehensive weight management support (inclusive of all treatment options).

5. **Foster a culture of support and inclusion**: Employers can create a culture of support and inclusion that recognizes and accommodates the needs of employees with obesity. This can involve implementing non-discriminatory policies, offering weight bias and stigma mitigation training, creating a supportive workplace environment that promotes healthy behaviors such as providing healthy food options, offering opportunities for physical activity, and providing reasonable workplace accommodations for individuals with obesity and related health conditions.

6. **Provide education and resources**: Employers can provide education and resources to employees to educate about the health risks associated with obesity as well as strategies for obesity care and weight management. This can include partnering with their health insurance program and other providers to encourage weight assessments as part of their annual physical, and offer health screenings, health coaching, and other support services.

State policy makers and employers play a crucial role in addressing obesity by implementing effective policies and programs that prioritize access to evidence-based treatment plans and resources. Taking a comprehensive approach to obesity prevention and treatment is key to improving population health and reducing healthcare costs linked to obesity-related conditions. By working together, these stakeholders can make a significant impact in addressing the obesity epidemic and fostering a healthier future for their communities and the state's workforce.

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Technical Notes

[i] We conducted logistic regression analyses using data from the National Health Interview Survey (NHIS) for the years 2017-2021 to estimate the relationship between employment status and obesity status. Separate regressions were performed for men and women. The dependent variable in the regression models was employment during the prior week, while the explanatory variables included body weight status categorized as healthy weight, overweight, or obesity. Age group was included as a predictor variable, with categories defined as 18-34, 35-44, 45-54, 55-64, and 65-75 years. Additionally, race/ethnicity (classified as Hispanic, non-Hispanic white, black, or other) was included as a predictor variable. Smoking status was included as a control variable to account for its potential influence. The NHIS survey year was incorporated to control for temporal variations. These regressions did not account for other potential factors that might be associated with obesity, such as education level.

[ii] We converted medical cost estimates and indirect economic cost estimates to 2022 dollars using, respectively, the medical component of the Consumer Price Index (CPI) and the overall CPI. National estimates were adjusted to Illinois using the Missouri Economic Research and Information Center state cost indices for medical care and overall cost of living. https://meric.mo.gov/data/cost-living-data-series

[iii] See note ii.

[iv] The Disease Prevention & Treatment Microsimulation Model (DPTMM) is a Markov-based microsimulation model utilized to estimate both clinical and economic outcomes for populations affected by obesity. This model predicts the annual occurrence of diseases and corresponding healthcare expenditures based on factors such as age, sex, race, Hispanic ethnicity, and biometric measurements including BMI, blood glucose level, blood pressure levels, total cholesterol level, and high-density cholesterol level. Additional risk factors modeled include smoking status and the presence of obesity-related comorbidities such as type 2 diabetes, hypertension, ischemic heart disease, congestive heart failure, history of stroke, history of myocardial infarction, and chronic kidney disease, among others.

To project the potential clinical and economic benefits of weight loss, evidence-based scenarios were simulated using the model. The first scenario, known as the usual care scenario, incorporates each individual's annual changes in BMI following the natural aging process, derived from the analysis of public survey data and published references. The counterfactual scenarios, the weight loss scenarios, incorporate actual and simulated changes in body weight and other biometric measurements during the first year, which are then maintained from the second year through the tenth year. The simulation model employs prediction equations that utilize these biometric changes as inputs to project the onset of modeled complications and the corresponding changes in direct medical costs over the next decade. By comparing the simulated health and economic outcomes between scenarios, the potential benefits of weight loss can be assessed.

[v] A population sample file was created by combining state-level data from the Behavioral Risk Factor Surveillance System (BRFSS) from 2020-2021 with additional biometric and other information from matched individuals in the National Health and Nutrition Examination Survey (NHANES) from 2014-2020. The matching process was based on a 1:1 match using propensity scores derived from risk factors such as age group, gender, race/ethnicity, insurance type, and body weight category. Each merged record in the sample file includes comprehensive data on demographics, biometric parameters, smoking status, and a history of various disease conditions. This combined dataset allows for a more comprehensive analysis and understanding of the population under study.

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If you have any more questions regarding our research, please contact us:

Life Sciences Consulting
Tim Dall
Executive Director
tim.dall@globaldata.com
+1 202 870 9211

Global Pharma
Ron Cohen
Vice President
rcohen@globaldata.com
+1 908 963 3364

