

Obesity and Severe Obesity Forecasts Through 2030

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Background and Motivation

- **Dramatic increases in obesity rates since the 1970s, especially for severe obesity**
 - **Obesity rate = 34% in 2007-2008 (NHANES)**
 - **>100% ↑ from 1976-80**
 - **50% ↑ from 1988-1994**

Background and Motivation

- **Evidence of leveling off of obesity prevalence for some adult subpopulations since 2003-2004**
- **Obesity costs are ~ 9% of annual medical expenditures (Finkelstein et al, 2009)**
 - **\$147 billion per year**

Study Goal

- **Goal: forecast future obesity and severe obesity prevalence for 2010-2030**
 - With improvements over prior estimates
- **Forecasts were used to simulate the savings that could be achieved through modestly successful obesity prevention efforts**

Data and Methods

Data

- **Individual-level variables from 1990-2008 Behavioral Risk Factor Surveillance System (BRFSS)**

Data

- **State-level variables from:**
 - Bureau of Labor Statistics (BLS)
 - American Chamber of Commerce
 - Research Association (ACCRA)
 - Census of Retail Trade

Methods

- **Logistic regression analysis predicting the probability of:**
 - Obesity (BMI > = 30)
 - Severe obesity (BMI > = 40)

Methods

- **Includes individual-level demographics and state-level variables expected to influence obesity**
 - Prices: alcohol, gas, fast food, groceries (relative to non-grocery), healthier foods (relative to less-healthy foods)

Methods

- Number of fast-food and full-service restaurants per capita
- Unemployment rate
- Internet access

Methods

- Forecasting of future obesity and severe obesity:
 - Constructed a synthetic cohort using 2008 BRFSS data and the U.S. Census population projections
 - Forecasted state-level variables through 2030

Methods

- Multiplied coefficients from the two logit models by the data for each year of the synthetic cohort

Methods

- Reductions in obesity-attributable medical expenditures were estimated as resulting from:
 - One percentage point reduction in future forecasted obesity prevalence
 - No growth in obesity rates after 2010
 - Healthy People 2010 goal obesity prevalence of 15%

Results

Projected Prevalence of Obesity (BMI > = 30)

	Year			
	2015	2020	2025	2030
Linear trend	36%	41%	46%	51%
Preferred model	35%	37%	40%	42%

Projected Prevalence of Severe Obesity (BMI >= 40)

	Year			
	2015	2020	2025	2030
Linear trend	6%	7%	8%	9%
Preferred model	6%	8%	10%	11%

Potential Savings in Medical Expenditures: 2030

Scenario	Forecasted Obesity Rate	Reduced Obesity Rate	Averted Cases of Obesity	Cumulative savings (billions \$)
One Percentage Point Decrease in Obesity Rates	42%	41%	3M	\$85
No Growth in Obesity Rates after 2010	42%	31%	32M	\$550
Healthy People Goal of 15% Obesity Rates	42%	15%	78M	\$1,902

Discussion

Discussion

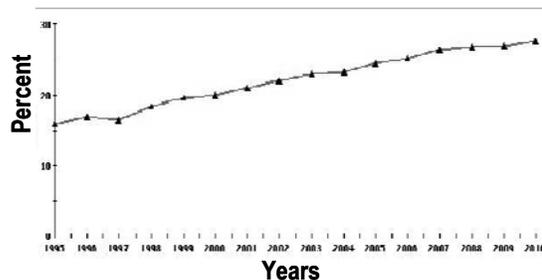
- Our forecasts of future obesity rates are lower than prior estimates
 - Still, we projected a 33% increase in prevalence of obesity by 2030

Discussion

- Depending on the data, some estimates show flattening of obesity rates in the recent years
 - BRFSS vs. NHANES estimates

BRFSS Obesity 1995-2010

Overweight and Obesity (BMI)
 Nationwide (States and DC) - All Available Years
 Response = OBESE (bmi 30.0 - 99.8)



Discussion

- Our forecasts of future obesity rates are lower than prior estimates
 - Still, we projected a 33% increase in prevalence of obesity by 2030

Discussion

- Depending on the data, some estimates show flattening of obesity rates in the recent years
 - BRFSS vs. NHANES estimates
 - BRFSS allowed us to incorporate state-level contextual variables

Discussion

- Our forecasts of future severe obesity rates are higher than those from a linear trend
 - Results are alarming given that those with BMI >= 40 are:
 - At much greater risk for diabetes and other medical conditions

Discussion

- Have shorter life expectancy, and
- Generate greater lifetime medical costs

Discussion

- Study limitations:
 - Projections assume that logistic regression parameters and costs from past data will continue in the future
 - BRFSS excludes people without phone land-lines
 - BRFSS collects self-reported height and weight

Discussion

- Other factors are likely to slow obesity growth even further:
 - Increased access to recreational facilities
 - Improvements in urban design
 - Anti-obesity social marketing programs

Discussion

- Worksite health promotion programs
- New drugs and technologies
- Future trends in childhood obesity rates will have a major impact on adult obesity and related healthcare costs

Conclusions

- Our study forecasts a 33% increase in the prevalence of obesity and a 130% increase in severe obesity in the next two decades
 - Based on extrapolating prior available data
 - Assuming trends will continue

Conclusions

- Growing obesity will further hinder efforts for healthcare cost containment
- Successful interventions will result in substantial savings
 - No growth in obesity rates after 2010 could save \$550 billion over 20 years

What Works?

- Institute of Medicine report “Accelerating Progress in Obesity Prevention”
 - Released May 8, 2012
- Will recommend strategies necessary to reverse the obesity epidemic

More Information

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