

Obesity in Michigan



What do we know? What can we do about it?



Call to Action to Reduce and Prevent Obesity
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Introduction



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- **Why do we care?**

Trends and consequences of obesity

- **Approaching the problem**

Frameworks for action

- **Which interventions are effective?**

Change in people's immediate environments

Why do we care?



- Obesity in U.S. children and adults increased dramatically in past 3 decades
- Widespread efforts to tackle obesity trends and dampen the health and social consequences have had only limited success
- Recent rates seem to be slowing, BUT
 - **Disparities persist:** across states and by age, race/ethnicity, income, gender
 - Overall **magnitude of obesity** remains high
 - Both **prevention and treatment** are necessary

Monitoring obesity



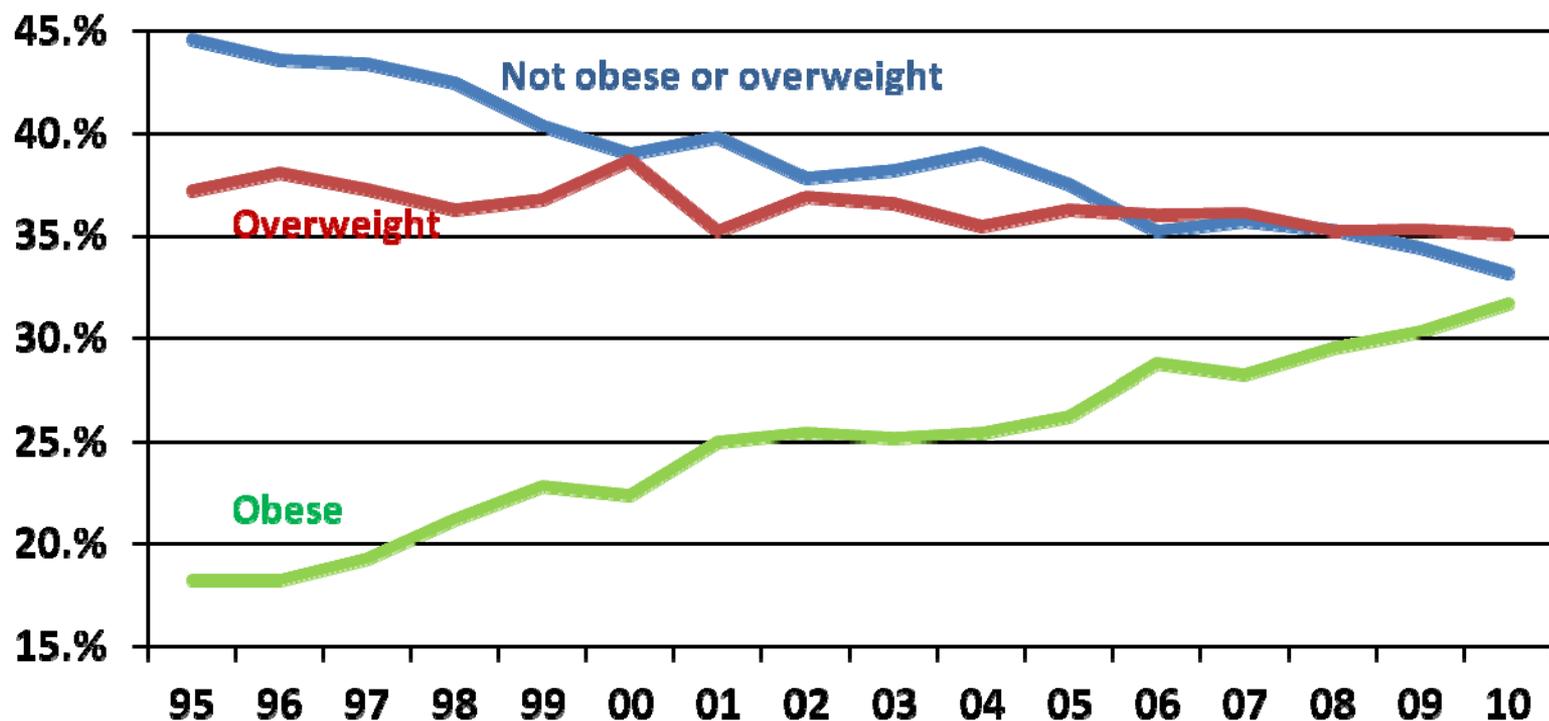
How do we know we have a problem?

- U.S. Surveillance systems (CDC)
 - Selfreport surveys: Weight, height, health behaviors
 - Adults: Behavioral Risk Factor Surveillance System (BRFSS)
 - Adolescents, grades 9-12: YRBS
 - School-age: no data
 - Low-income preschool, infants: PedNSS (to be phased out in 2012)
- State, local efforts to monitor BMI
- Data-action Cycle: What do we need to know to take action and monitor our effectiveness?

Adult obesity trends



Adult obesity prevalence in Michigan has doubled in past 15 years



Obese: BMI >30 **Overweight:** BMI >25 <29.9 **Not Obese or Overweight:** BMI <24.9

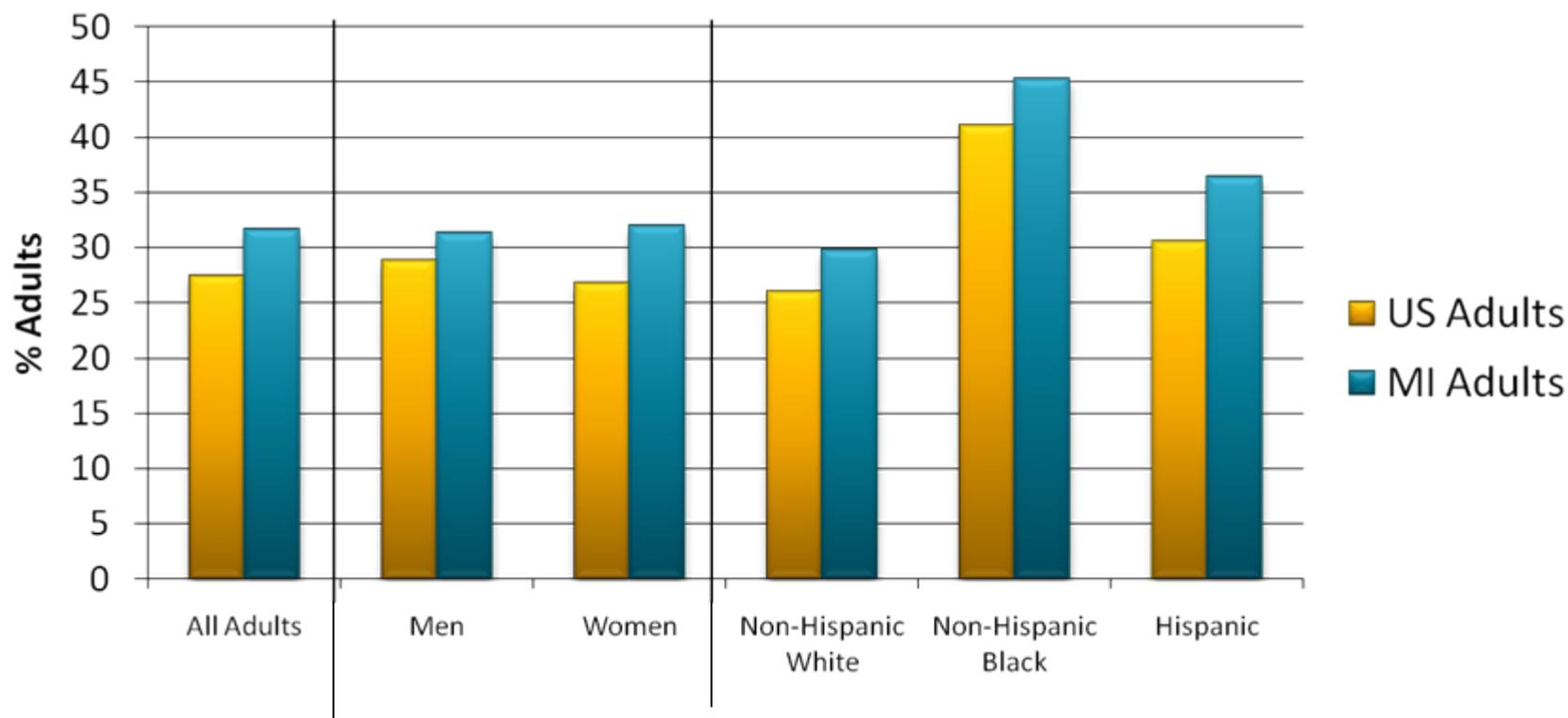
Source: BRFSS Survey, 2011



State disparities: Adults



Michigan has a greater prevalence of **adult obesity** than the U.S. in every category: total, gender, race/ethnicity



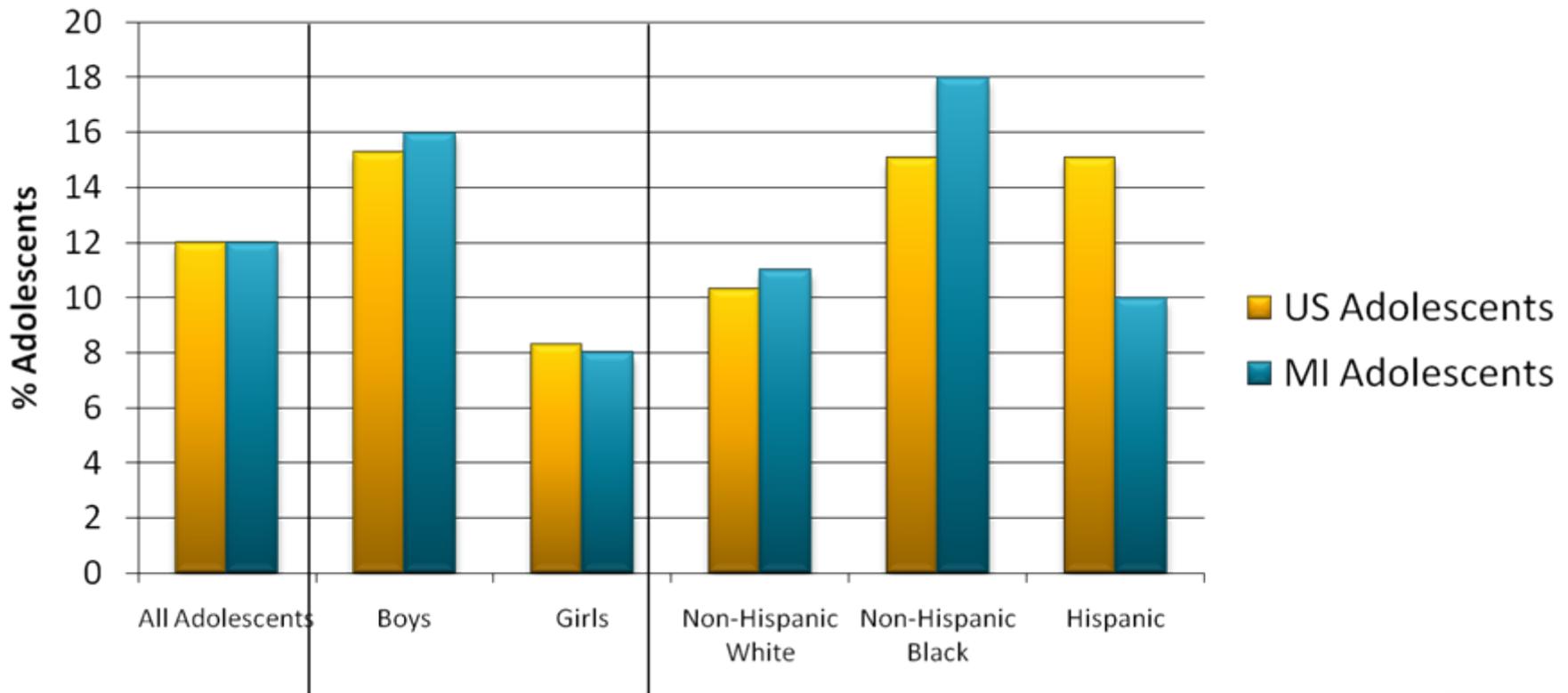
Source: BRFSS Survey, 2010



State disparities: Youth



Michigan has a greater prevalence of **adolescent obesity**, grades 9-12, than the U.S. in many categories

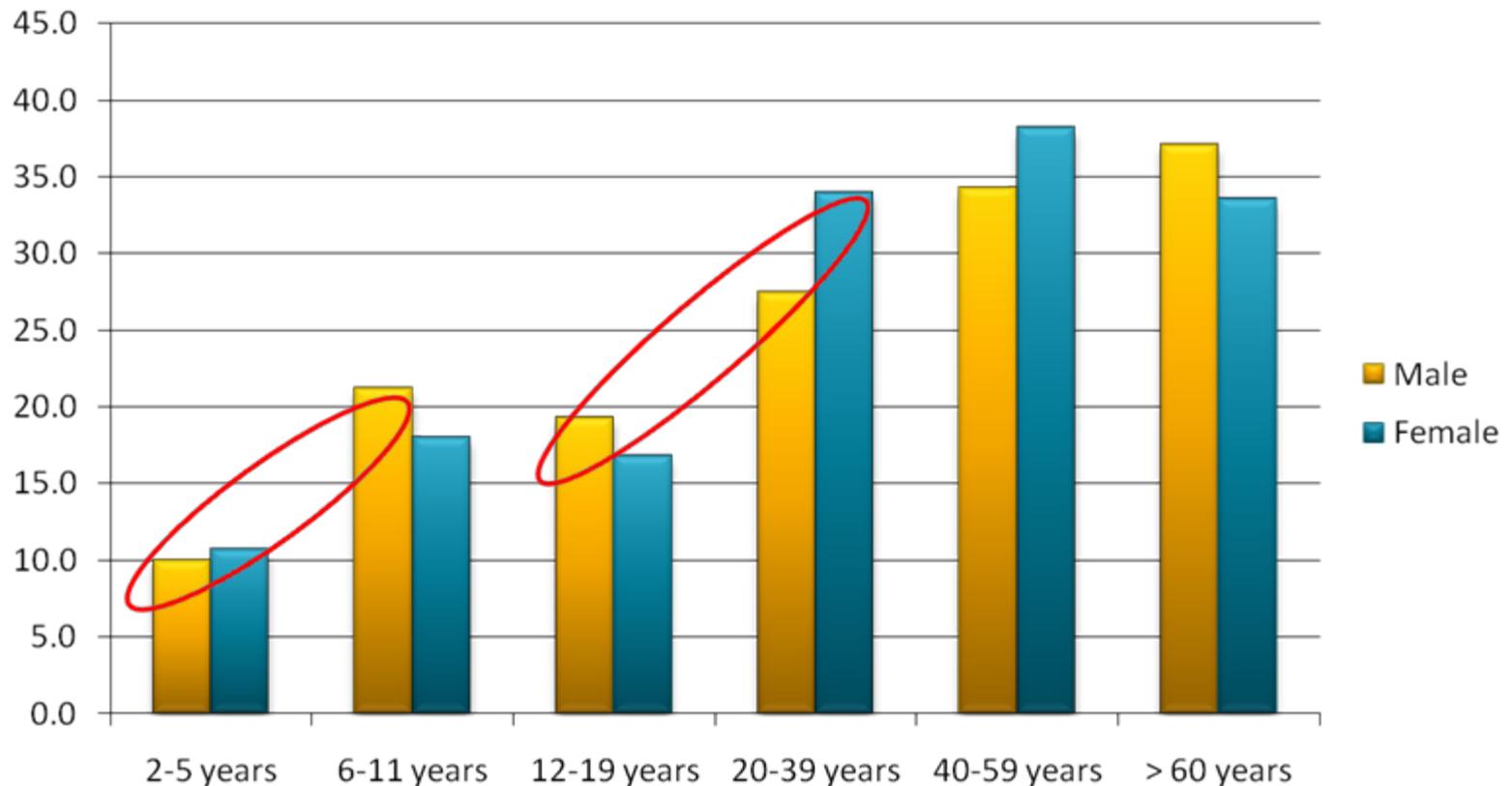


Source: YRBS Survey, 2010



Obesity across the life course

U.S. prevalence of obesity by age group, NHANES 2007-2008



Flegal et al *JAMA* 2010; 303:235-241.; Ogden CL et al *JAMA* 2010;303:242-249.

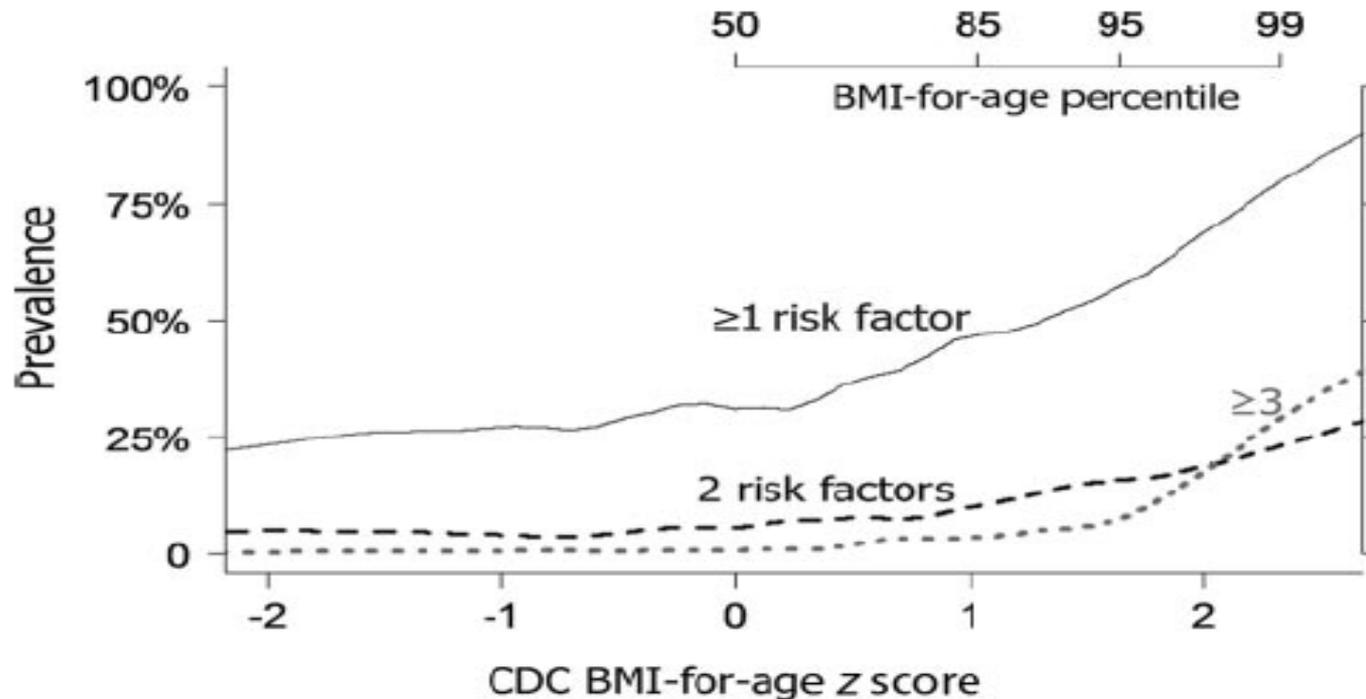
Health impacts of obesity



- Obesity is a complex, chronic condition
- Health consequences start in childhood
- Reducing obesity requires a continuum of prevention & control across life course

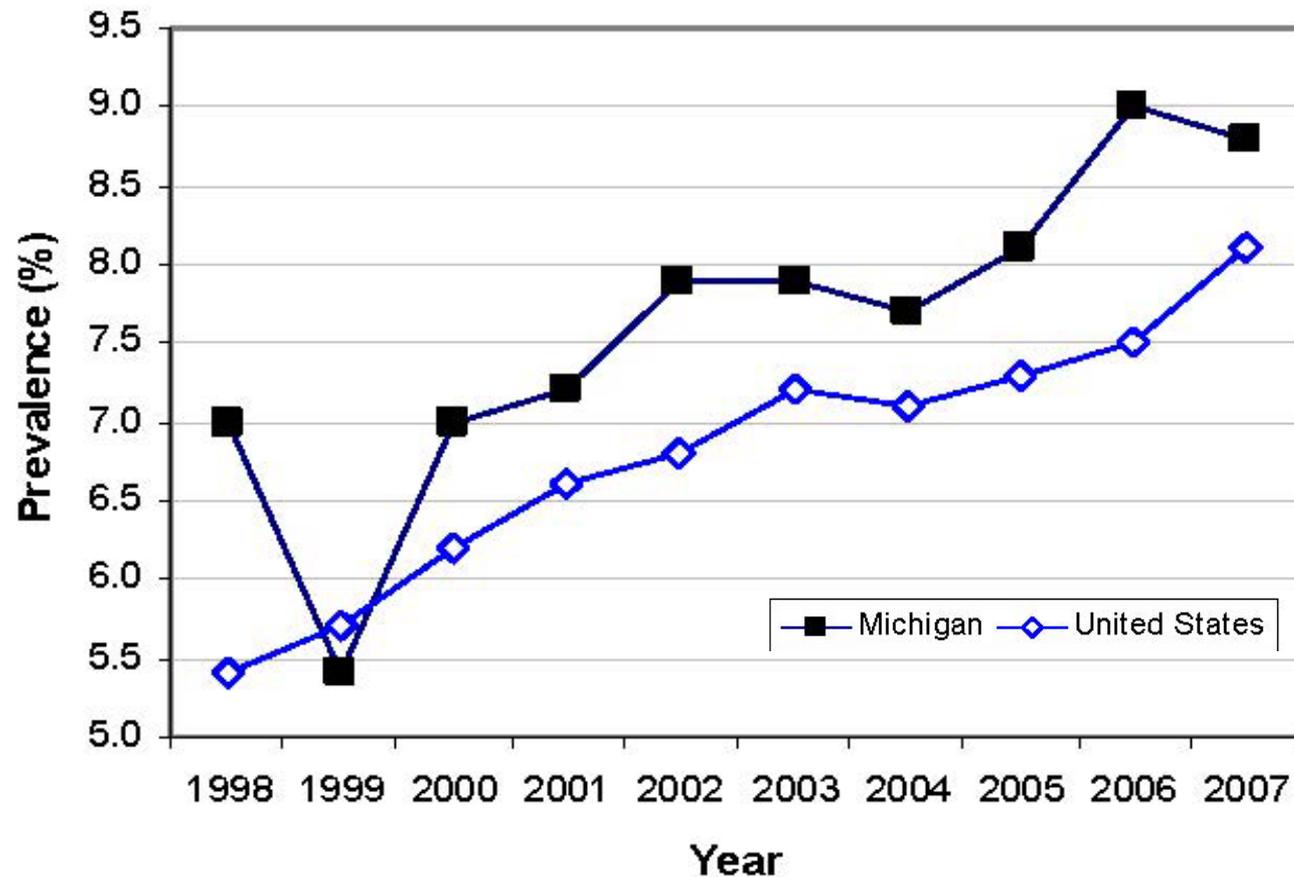
Child obesity and CVD risk

Increasing BMI in **children** is associated with insulin resistance, dyslipidemia and high blood pressure



Adult obesity and diabetes

Adult Diabetes Prevalence in Michigan and U.S., 1998-2007



Source: Michigan Diabetes Burden and Diabetes Program – Overview 2008

Economic impacts of obesity

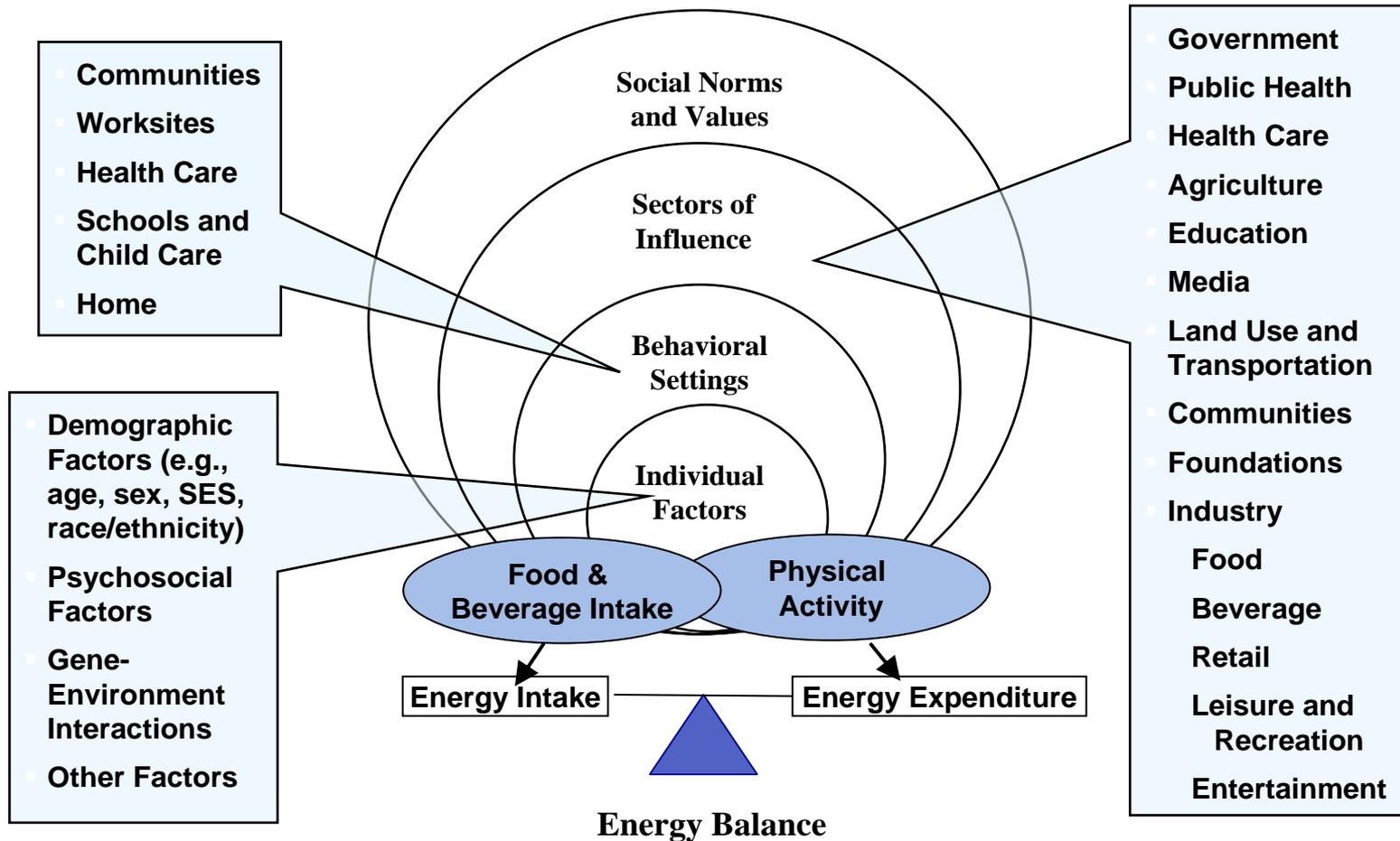
- US spends > **\$215 billion** annually on obesity
 - **\$147 billion** on adults' medical costs
 - **\$14.3 billion** on children's medical costs
 - **\$53.7 billion** on indirect costs
- Michigan spending on obesity-related medical costs
 - 2008 = \$3.1 billion
 - 2018 = \$12.5 billion (projected)
 - **\$6.9 billion saved** if 2008 obesity levels were maintained

Approaching the problem



- Obesity is a complex and chronic condition
- Multiple root causes affect individuals, families, organizations and communities
- Frameworks for understanding and intervening on obesity can be used to:
 - Integrate perspectives and stakeholders
 - Tackle obesity across different settings
 - Create solutions that work

Social-ecological model

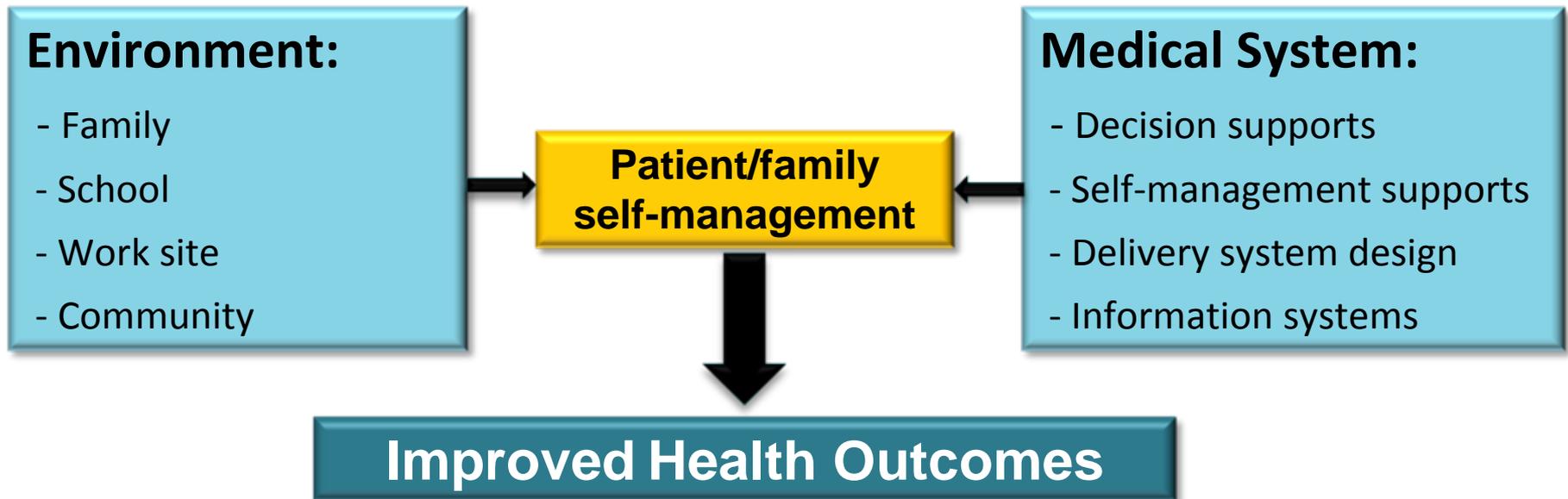


IOM. 2007. Progress in Preventing Childhood Obesity: How Do We Measure Up?
Washington, DC: The National Academies Press.

Obesity care model



Linking medical and public health approaches: to support individuals and families



Adapted from: Dietz W, Lee J, Wechsler H, et al. Health Affairs 2007;26(2):430-40.

Knowing what works

- **Evaluation** is critical to solving the obesity crisis
- Interventions ineffective in changing behaviors and reducing obesity squander public resources
- Need to take action based on ‘best available’, rather than ‘best possible’ evidence
- What evidence is needed?
 - **Does it work?** Randomized and quasi-experimental studies [US Preventive Task Force, meta-analyses, cost-effectiveness]
 - **How and why?** Qualitative and operations research

Evaluating interventions



Behavioral Interventions	Effect on Weight Status	Study Population
Behavioral Interventions to Reduce Screen Time	Modest Improvement	3-17 years old
School-Based Programs	Varied results – small changes	Children and Adolescents
Worksite Programs	After 12 months in program: 2.8 lb weight loss 0.5 unit decrease in BMI	Adults
Technology Supported Multi-component Coaching/Counseling (1) Weight Loss (2) Maintaining Weight Loss	(1) Median weight loss: 3.7 kg (2) Maintained for 12-18 months	Age not specified

Home interventions



● Children

- Parents essential to preventing child obesity
- Few intervention studies based in home setting
- Federal programs can support parents' role in obesity prevention (WIC)

● Adults

- Few studies, promising findings
- Both spouses may benefit from intensive life style interventions resulting in weight loss

Child care interventions

- 62% of U.S. pre-school children attend child care outside of the home
- Limited number of studies in child care settings
 - Prevalence of obesity and impact of interventions varies by race/ethnicity
 - Cultural tailoring important to address disparities
- No centralized BMI monitoring for pre-school children in Head Start

Fitzgibbon ML et al. *J Pediatr* 2005;146:618-25.; Fitzgibbon ML et al. *Obesity* 2006;14:1616-25. DHHS, 2007; Performance Standards for the Operation of Head Start, DHHS, 2008; The State Medicaid Manual: Chapter 4 – Early and Periodic Screening.



School interventions



- Behavioral setting where children spend many hours
- Meta-analyses inconclusive, studies suggest:
 - Interventions more effective for: pre-adolescents (late elementary/middle school) & heavier children
 - Physical activity alone does not lower obesity
 - Gender-specific effects
- Multi-component interventions: mixed findings
 - Range of intervention strategies & parental involvement improve outcomes
- Limitations: few primary preventions, short follow-up

Harris KC et al, *CMAJ* 2009; 180:719-26.; Katz DL et al, *Int J Obes* 2008;32:1780-9.; Storey M, *Int J Obes Relat Metab Disord* 1999; 23:S43-51.; Katz DL et al, *MMWR Recomm Rep* 2005; 54:1-12.



Worksite interventions

- Worksite wellness programs can reach many adults at risk at relatively low cost
- Meta-analysis shows average 2.8 lb weight loss after 6-12 mo participation
 - Range of intervention strategies: health education, lifestyle prescriptions, competitions & incentives
 - Greater impact: diet & exercise; multi-component
 - Professional and lay leaders equally effective
- Limitations: few interventions address primary prevention, weight regain common

Anderson et al, *Am J Prev Med* 2009; 37:340-57.; CDC Preventive Task Force,
<http://www.thecommunityguide.org/obesity/communitysettings.html>



Health care interventions

- Integrating health care & community resources key to patient and family self-management
- Adults:
 - Weight loss at 6 months = similar for diet + exercise, meal replacements, Orlistat, Sibutramine interventions
 - Weight loss plateaus—ongoing support for maintenance necessary
- Children:
 - Greater BMI change with moderate- to high- intensity interventions in referral or specialty treatment settings
 - Primary care, low-intensity interventions have modest success in adolescents but not children ages 5-9 yr
 - Maintenance of weight loss—mixed findings

Dietz W et al. *Health Affairs* 2007;26(2):430-40.; McCallum et al, *Int J Obes* 2007; 31:630-6.; Saelens et al, *Obes Res* 2002; 10:22-32.; Savoye et al, *JAMA* 2007; 297:2697-2704.; Franz et al, *JADA* 2007; 107:1755-67.
ADA Practice Guidelines: Adult Weight Management 2006.



Summary



- Obesity is a complex, chronic condition
- Incidence rises across the life course with key transitions (pre- to school age, early adulthood)
- Health consequences demand a continuum of prevention and treatment
- Integration of efforts across different behavioral settings is needed to address root causes
- Policies and system changes are essential to support individual, family, organizational and community actions to reduce obesity

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