

Pre-Pregnancy Weight and Gestational Weight Gain: Findings from the California Pregnancy-Associated Mortality Review

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Healthy Weight and Pregnancy Webinar

Family Health Outcomes Project

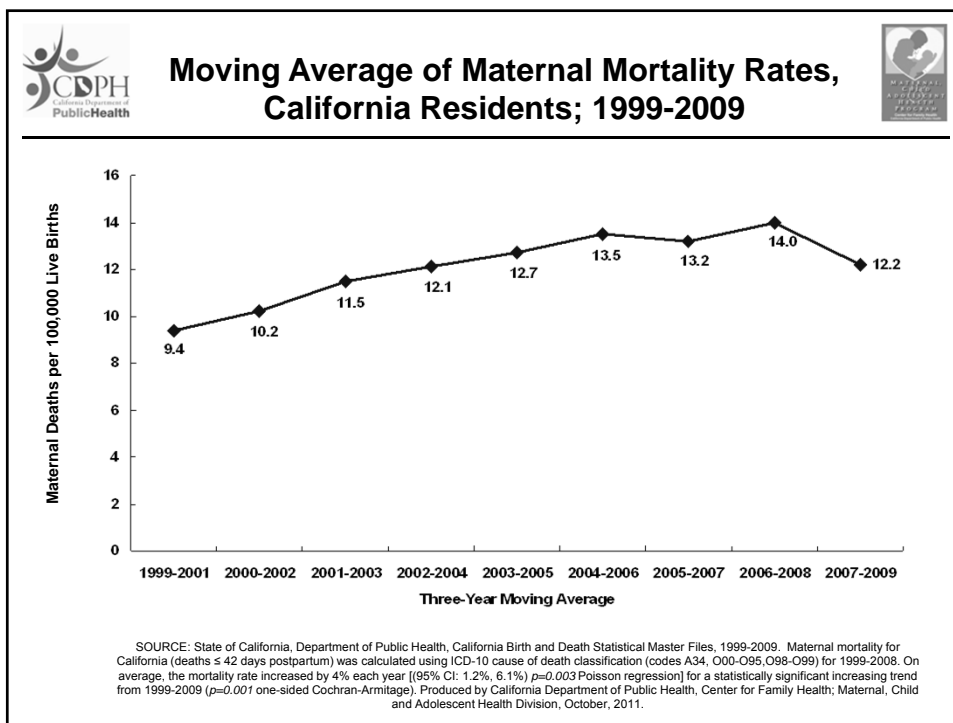
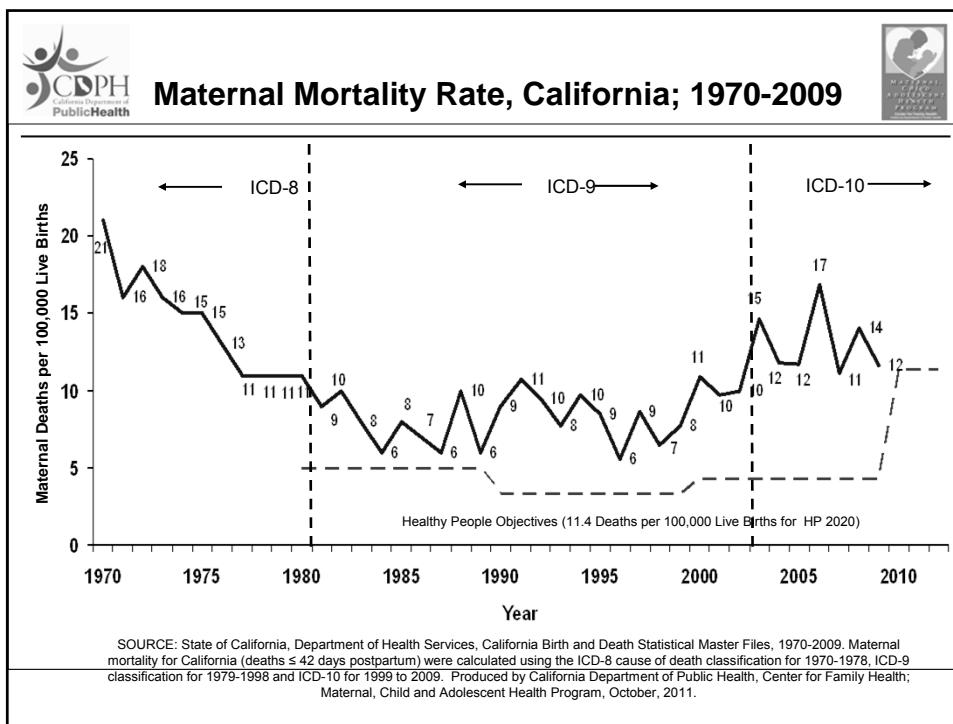
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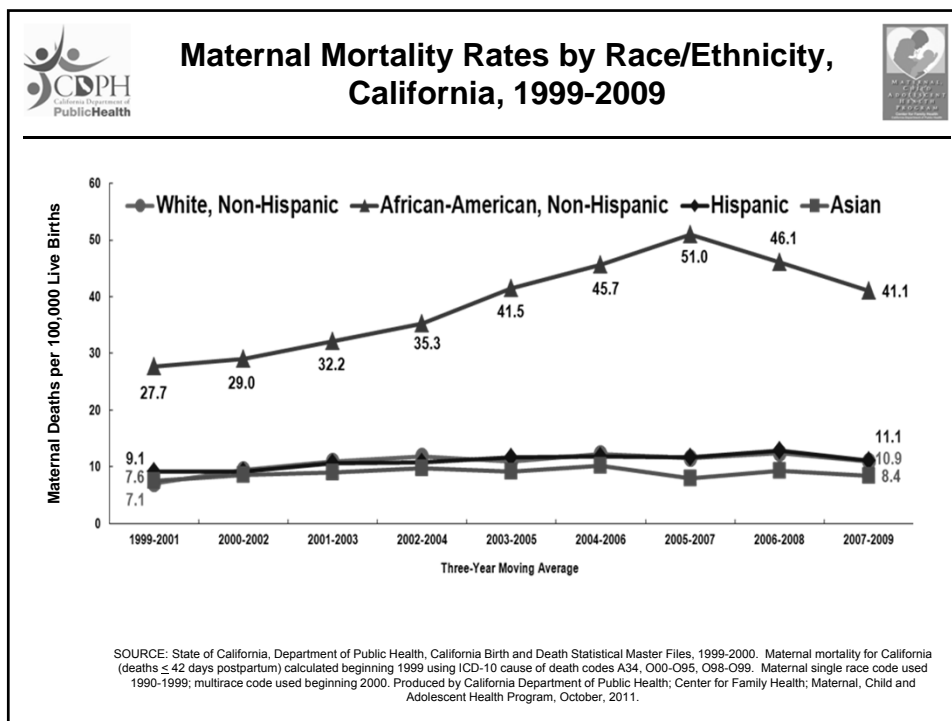




Outline of the Presentation



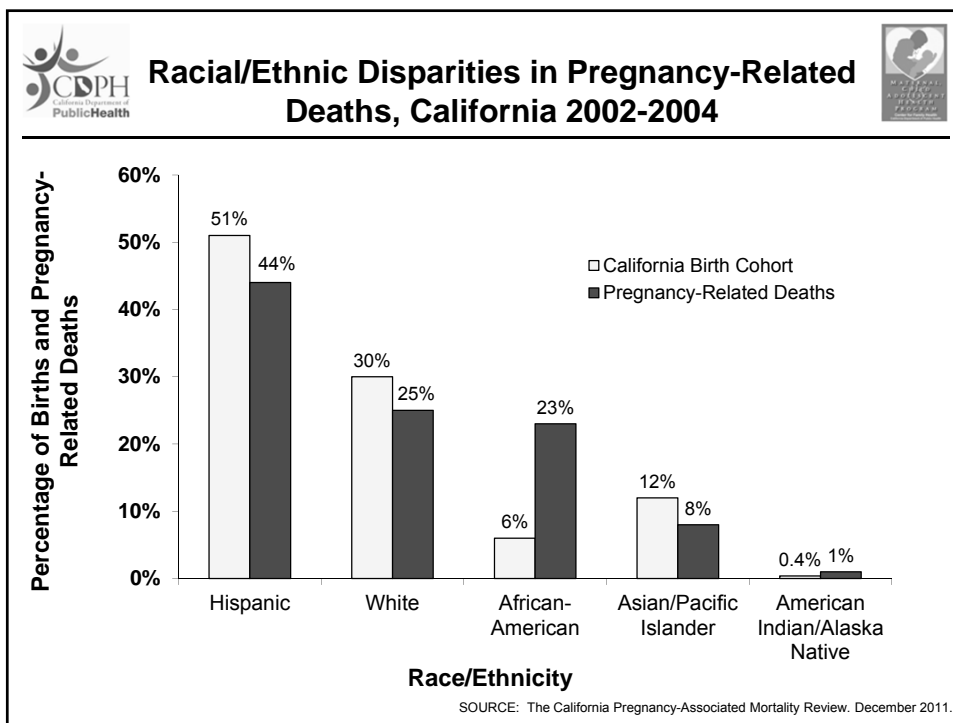
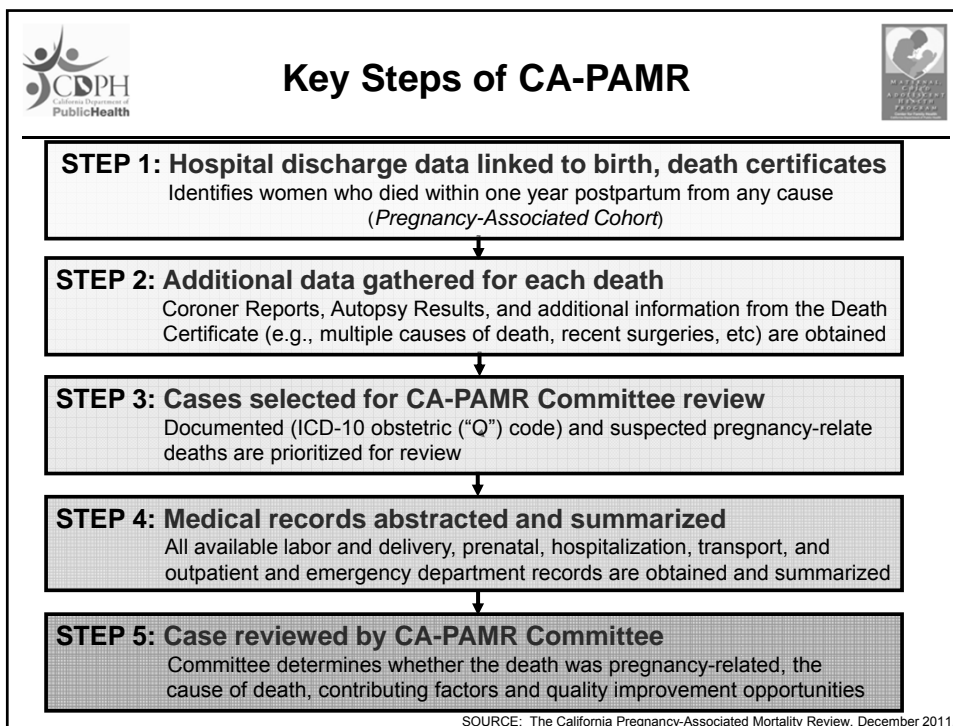
- Background maternal mortality in CA
- Methodology of the California Pregnancy-Associated Mortality Review
- Findings and impact of obesity and overweight
- Next steps

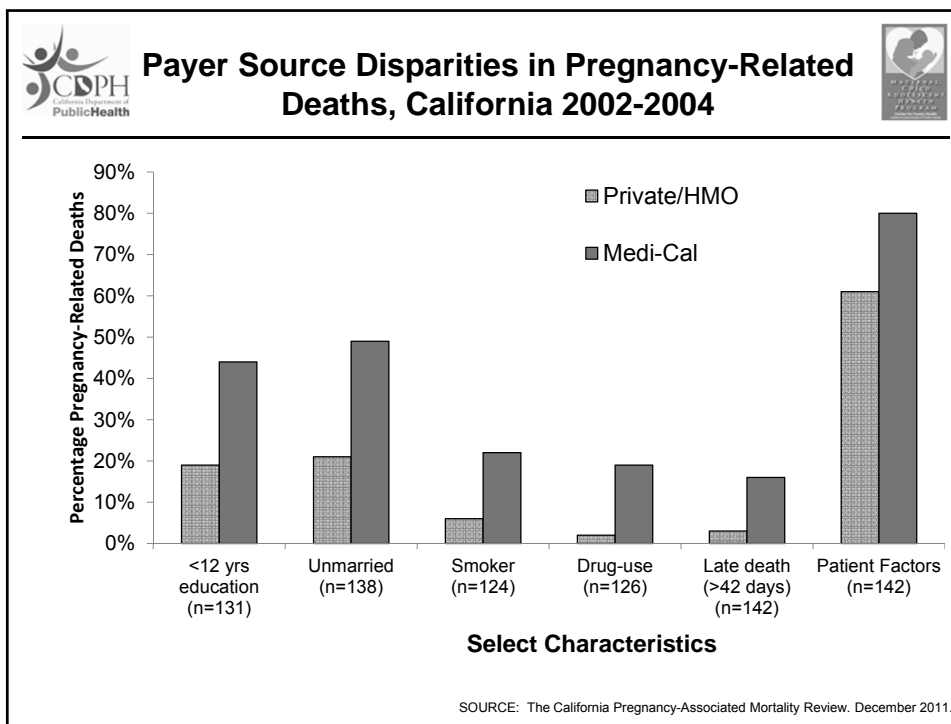




 **California Pregnancy-Associated Mortality Review (CA-PAMR)** 

- Initiated in 2004, first case review in 2007
- Public Health Institute, CA Maternity Quality Care Collaborative, CA-PAMR Committee (key partners)
- Goals of understanding cause(s) of rise and to develop programmatic and policy interventions
- Initial report online at:
<http://www.cdph.ca.gov/data/statistics/Documents/MO-CA-PAMR-MaternalDeathReview-2002-03.pdf>

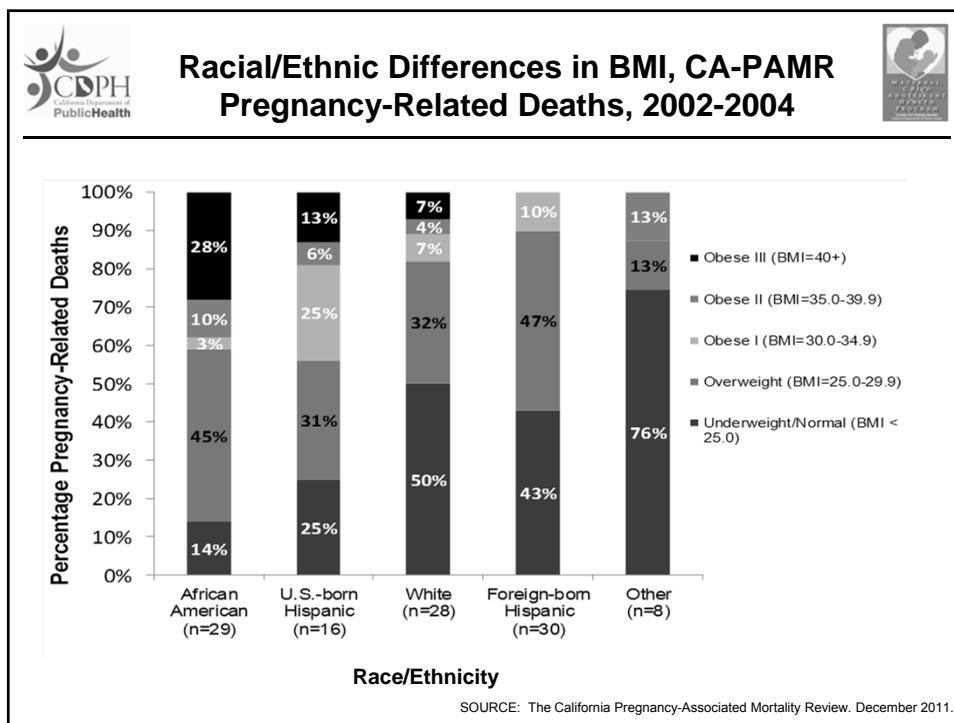
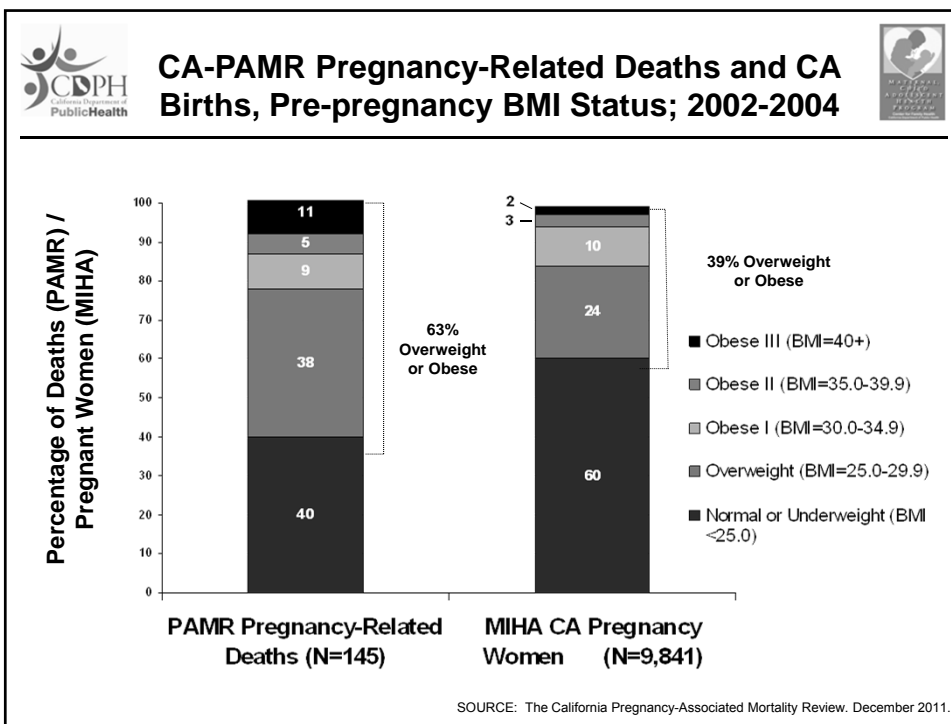






CA-PAMR Causes of Pregnancy-Related Deaths, after Case Review; 2002-2004

	Pregnancy-Related Deaths (per CA-PAMR) N (%)
Cardiovascular Disease	29 (20)
Cardiomyopathy	19 (13)
Other cardiovascular	10 (7)
Preeclampsia/eclampsia	25 (17)
Obstetric hemorrhage	16 (11)
Amniotic fluid embolism	15 (10)
Deep vein thrombosis/ Pulmonary embolism	15 (10)
Sepsis/infection	10 (7)
Cerebral Vascular Accidents	9 (6)
Other	26 (18)
TOTAL	145

SOURCE: The California Pregnancy-Associated Mortality Review, December 2011.








CA-PAMR Pregnancy-Related Deaths, Gestational Weight Gain (GWG); 2002-2004

Pre-Pregnancy BMI	N (%)	Recommended IOM Upper Limit for GWG** (pounds)	PAMR GWG Exceeding Guidelines N (%)
Underweight	3 (4)	40	0
Normal	36 (33)	35	8 (22)
Overweight	42 (39)	25	27 (64)
Obese (all classes)	28 (25)	20	16 (57)
Total	109		51 (47%)

* Unable to calculate weight gain for 36 (25%) of cases due to unavailable data. N=109.
† Note: weight gain not adjusted for gestational age. Thus, estimates of excessive weight gain are likely underestimated, since not all CA-PAMR women delivered at term.
** Institute of Medicine: Weight Gain During Pregnancy: Reexamining the Guidelines, 2009. Note: These guidelines were not in effect at the time of the maternal deaths.

SOURCE: The California Pregnancy-Associated Mortality Review, December 2011.

Summary of Findings from CA-PAMR: BMI and GWG and Maternal Mortality

- High amounts of pre-pregnancy overweight or obesity
 - African-Americans (86%), U.S.-born Hispanics (75%)
- High amounts of excessive GWG
 - Most often occurred among already overweight/obese
 - Hispanics highest GWG (46%), Whites 2nd largest GWG (28%)
- Pre-pregnancy obesity or excessive GWG determined to be one of the contributing factors that directly contributed to the maternal death, per CA-PAMR Committee
 - 30 (27%) of 111 women with BMI and GWG data
 - Pre-pregnancy BMI larger contributing factor than GWG
- Top causes of death were among overweight/obese
 - Cardiomyopathy among African Americans
 - Preeclampsia/eclampsia among Hispanics



Obesity is probably a major driver of rising rates of maternal morbidity and mortality



- Obesity is a direct contributor to development of cardiovascular disease
- Obesity is a risk factor for other pregnancy-related morbidity and mortality
 - Preeclampsia
 - Diabetes
 - Infection
 - DVT, pulmonary embolism
 - Obstetrical hemorrhage
- Obesity is a risk factor for obstetrical complications
 - Cesarean Section



Next Steps Maternal Morbidity and Mortality



- Continue CA-PAMR through review of 2007 deaths
- Continue to develop maternal morbidity measures
 - Relationship to mortality
 - Cost, especially Medi-Cal (46% of CA births covered)
- Translate findings from CA-PAMR
 - Public health prevention strategies
 - Preconception Health
 - Primary prevention of obesity and overweight among women of reproductive age
 - Health care quality improvement initiatives