



Tobacco Use And Gestational Diabetes Among Iowa Women: Trends Over Time

**Catherine J. Lillehoj, PhD, Donald Shepherd, PhD, &
Laurene Hendricks, Coordinator IA DPCP**
25th Annual BRFSS Conference
March 17, 2008



**Iowa Department of Public Health
Promoting and Protecting the Health of Iowans**

What is Diabetes?

- ◆ A group of diseases characterized by high levels of blood glucose (blood sugar)
- ◆ Can lead to serious health problems & premature death

Women & Diabetes

- ◆ Nationally, ~1.85 million women of reproductive age (18-44 years) have diabetes; ~500,000 are unaware they have the disease
- ◆ Women of minority racial and ethnic origins 2 - 3 times more likely to have Type 2 Diabetes
- ◆ Type 2 Diabetes accounts for most diabetes cases identified during this life stage
- ◆ Nationally, women of reproductive-age with Type 2 Diabetes have fewer years of education, lower incomes, & less likely to be employed
- ◆ Between 2.5 - 4 % of women in the U.S. develop GDM during pregnancy

Gestational Diabetes Mellitus (GDM)

- ◆ 7% of all U.S. pregnancies, about 200,000 cases annually
- ◆ Increased lifelong risk for mother & child for developing Type 2 Diabetes
- ◆ Although women with GDM can & do have normal, healthy pregnancies & deliveries, are at greater risk for complications (e.g., preeclampsia, Cesarean section, infections)
- ◆ Increasing numbers of women, especially nonwhite women, at risk of having pregnancies complicated by diabetes

GDM: Background

- ◆ Various risk factors associated with higher rates of chronic diseases, including diabetes
- ◆ GDM has been defined as the most common medical complication of pregnancy; affects about 4% of pregnant women each year
- ◆ Women diagnosed with GDM have a significant risk of developing diabetes later in life

GDM: Consequences

- ◆ Pregnancy hormones block the action of the mother's insulin
- ◆ Insulin is hormone needed to bring blood glucose into the body's cells for energy
- ◆ When insulin not working properly, blood glucose rises in the mother & can transfer to the fetus
- ◆ Fetus stores the extra glucose as fat
- ◆ Women with GDM have < 45% risk of recurrence with the next pregnancy & < 63% risk of developing Type 2 Diabetes later in life

GDM: Consequences

- ◆ Can be serious if not controlled
- ◆ Usually goes away after the baby is born, but may persist
- ◆ Important that a doctor checks the mother's blood glucose 6 weeks after the baby is born
- ◆ Diabetes is a serious disease that can affect the heart, eyes, kidneys, nerves, & feet
- ◆ Children of women who have had GDM may be at higher risk for weight gain or getting diabetes during teenage years

Tobacco Use & GDM

- ◆ Tobacco use may increase the risk of GDM; even a modest association with GDM among Iowa women of childbearing age would be of public health importance
- ◆ Without continued monitoring of these factors, the Iowa Department of Public Health (IDPH) would have difficulty tracking & evaluating progress toward accomplishing state objectives, such as decrease in prevalence of GDM
- ◆ Monitoring risk factors is vital to developing targeted education & prevention programs at state & local levels to improve health of pregnant women

Objective

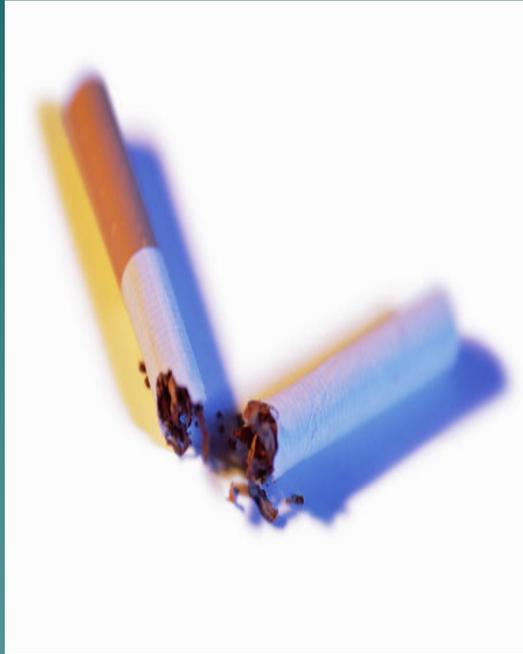


Current study examines various risk factors for development of GDM, including tobacco use and socio-economic status.

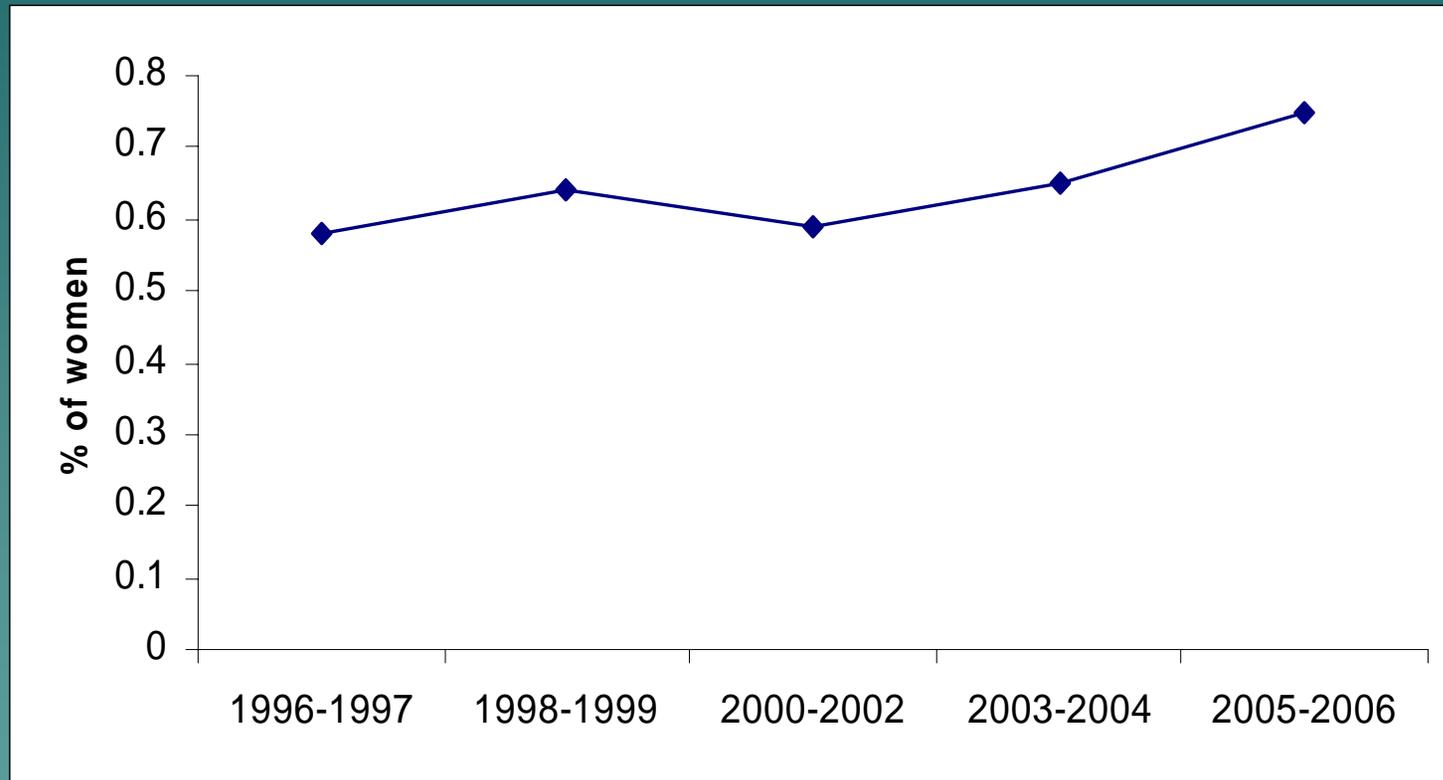
Methods

- ◆ Using Behavioral Risk Factor Surveillance System (BRFSS) data 1996 - 2006, determined the prevalence of concurrent tobacco use among Iowa women by pregnancy status.
- ◆ Trend in prevalence rate of self-reported GDM determined.

Results

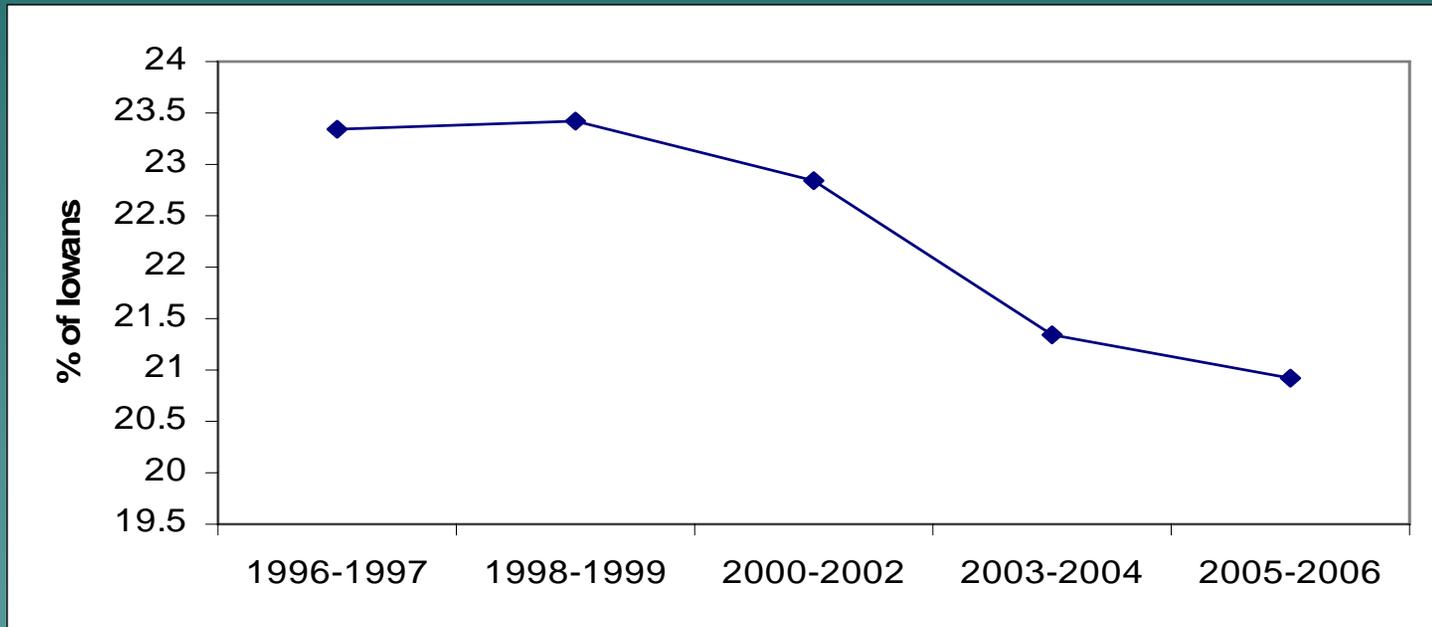


Trends in Gestational Diabetes Mellitus among Iowa Women by Year*



* Self-reported among all Iowa women

Trends in Current Tobacco Use among Iowans by Year



Association of Diabetes Diagnosis & Current Tobacco Use among Iowa Adult Women** (1996-2006) (N = 28,380)

Ever told by dr. have diabetes	Current Tobacco Use (everyday or some days)	
	No (%)	Yes (%)
Yes (%)	84.5	15.5
Yes, woman told during pregnancy (%)	75.2	24.8
No (%)	78.1	21.9
No, pre-diabetic or borderline diabetic (%)	88.9	11.1

** $p \leq .001$

SUMMARY

- ◆ Decreasing trends over time in tobacco use among adult Iowans
- ◆ Increasing prevalence rate in GDM among Iowa women
- ◆ Significant association between current tobacco use and GDM among Iowa women
- ◆ Those with GDM more likely to currently use tobacco than Iowans with other diabetic diagnoses
- ◆ Need for targeted education and prevention programs at state- & local-level to improve health of pregnant Iowa women