

Diabetes During Pregnancy in New Hampshire, 2001-2010



Background

Diabetes during pregnancy is a growing public health problem that may carry short- and long-term consequences for both mother and child. Increase in diabetes burden during pregnancy is a result of an increase in pre-pregnancy type 2 diabetes and gestational diabetes.^{1,2}

Gestational diabetes (GDM) is a type of diabetes that is diagnosed for the first time during pregnancy, usually during the second trimester, and is the most common type of diabetes (90%) among pregnant women.³ Risk factors for GDM include older maternal age, family history of type 2 diabetes, previously diagnosed GDM, race (more frequent in African Americans, Hispanic/Latino Americans, and American Indians), and a major modifiable risk factor, overweight and obesity.^{4,5}

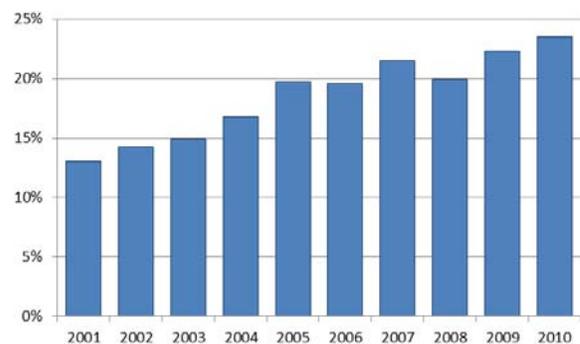
Women with diabetes during pregnancy are at increased risk for complications around the time of delivery; women with GDM are also at increased risk for developing type 2 diabetes in the future.⁴

Babies born to mothers with diabetes are at greater risk for health problems around the time of delivery, especially when maternal blood glucose is poorly controlled. Mother's diabetes in early pregnancy can cause miscarriages and birth defects. When blood glucose is poorly controlled later in pregnancy, babies can be born too large or too small for their gestational age, with low blood glucose, breathing problems, or iron deficiency. Later in life, children born to mothers with diabetes have an increased chance of overweight, obesity, and/or diabetes.^{4,5}

New Hampshire Data - Mothers

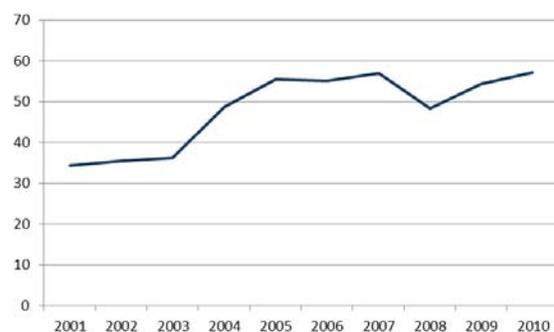
In recent decades, the burden of obesity and diabetes among women of childbearing age has increased. Between 2001 and 2010, obesity among women 18 to 44 years of age in New Hampshire increased significantly from 13.0% to 23.5%.

Prevalence of obesity among women 18 to 44 years of age, NH BRFSS, 2001-2010



Reported rates of gestational diabetes range between 2-10% of pregnancies nationally.⁶ Based on information recorded on New Hampshire birth certificates, the rate of reported maternal diabetes per 1,000 live births increased significantly from 34.4 in 2001 to 57.2 in 2010 (or approximately from 3% to 6%).⁷

Rate of reported maternal diabetes per 1,000 live births, NH, 2001-2010

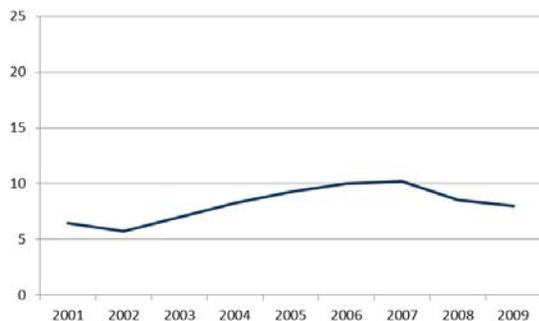


New Hampshire Data - Babies

A specific set of endocrine and metabolic conditions called “syndrome of infant of a diabetic mother” (ICD-9-CM 775.0) is a billable medical code that can be used to specify a diagnosis on a reimbursement claim for babies born to mothers with diabetes.⁸

Based on New Hampshire Hospital Discharge Data, between 2001 and 2009, the number of hospitalizations with a reported diagnosis of a syndrome of infant of a diabetic mother (ICD-9-CM 775.0) had increased, though this increase was not statistically significant.

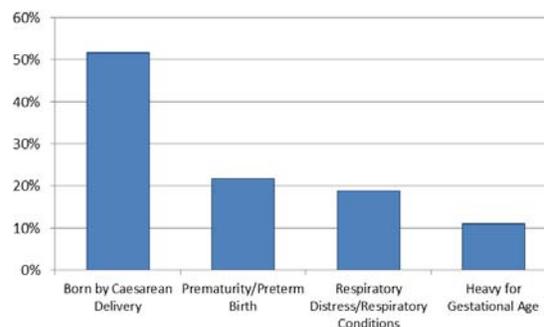
Rate of reported hospitalizations associated with a syndrome of infant of a diabetic mother per 1,000 live births, NH, 2001-2009



Among New Hampshire infant hospitalizations with primary or contributing diagnoses of a syndrome of infant of a diabetic mother, on average, 22% had a diagnosis of disorders related to prematurity and preterm birth, 19% had recorded respiratory distress and other respiratory conditions, and 11% were infants large for gestational age. Altogether, 52% had a record of Caesarean delivery.

In comparison, New Hampshire birth data indicate that among mothers without diabetes, approximately 30% of their pregnancies result in Caesarean delivery, whereas 44% of mothers with diabetes deliver by Caesarean.⁷

Proportion of diagnoses among hospitalizations with a syndrome of infant of a diabetic mother, NH, 2001-2009



What Is Being Done in New Hampshire?

A Quality Improvement (QI) team comprised of state and local public health practitioners is collaborating with local Women, Infant and Children (WIC) agencies to promote best practices for postpartum care of women with a history of GDM. To date, the QI team has created standard work for WIC nutritionists to increase follow-up blood glucose testing and education around future risk of type 2 diabetes. The team has implemented this systems change at one pilot site and plans to promote the intervention statewide.

What Can be Done?

During Pregnancy

For women diagnosed with diabetes during pregnancy, blood glucose control is the key to reducing risks for both mother and infant. Medical Nutrition Therapy provided by a Registered Dietitian and Diabetes Self-Management Education provided by a Certified Diabetes Educator are recommended.^{9,10}

Interventions to prevent or delay type 2 diabetes after pregnancy

Women with GDM should be tested for diabetes 6-12 weeks after delivery. If results indicate that blood glucose levels are elevated, but not high enough for a diagnosis of diabetes (prediabetes), annual testing is recommended. Women with normal findings should be tested every three years thereafter. Women with a history of GDM should also maintain a healthy weight, or try to lose weight if overweight or obese, breastfeed their newborn, be physically active, and make healthy food choices.^{9,10}

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Technical Notes

New Hampshire Behavioral Risk Factor Surveillance System is an ongoing telephone survey of adults 18 years or older. The survey collects state-level data about New Hampshire residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. As the methodology of the survey changed in 2011, the prevalence estimates from earlier years are not comparable to those from later years. Data are available up to year 2012.

New Hampshire Hospital Discharge Data total data on hospital discharges for stays of 24 hours or more that are abstracted from medical records upon patient discharge from 26 acute-care, non-federal inpatient facilities in New Hampshire as well as hospitalizations for New Hampshire residents that occur in Maine,

Massachusetts, and Vermont. Hospitalization data are coded under the Ninth Revision of the International Classification of Diseases-Clinical Modification (ICD-9-CM), and are available up to year 2009.

ICD-9CM codes used in this data brief

775.0 – Syndrome of “infant of a diabetic mother”

Born by Caesarean Delivery

V30.01 Single liveborn delivered by caesarean delivery

V31.01 Twin, mate liveborn delivered by caesarean delivery

Prematurity/Preterm Birth

765 Disorders relating to short gestation and unspecified low birth weight

Respiratory Distress/Respiratory Conditions

769 Respiratory distress syndrome

770.6 Transitory tachypnea of newborn

770.8 Other respiratory problems

Heavy for Gestational Age

766.0 Exceptionally large baby

766.1 Other “heavy-for-dates” infants

New Hampshire Birth Data are derived from the New Hampshire birth certificates and made available through the CDC WONDER Online Database by the United States Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics. Data elements, including demographics and maternal risk factors, are standardized to assure consistency among states vital statistics systems. Some data items may be affected by the implementation of the 2003 U.S. standard Certificate of Live Birth by New Hampshire and its neighboring states. Data are available up to year 2011.

References

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