

National and Hawai'i Health Data

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Perinatal Summit

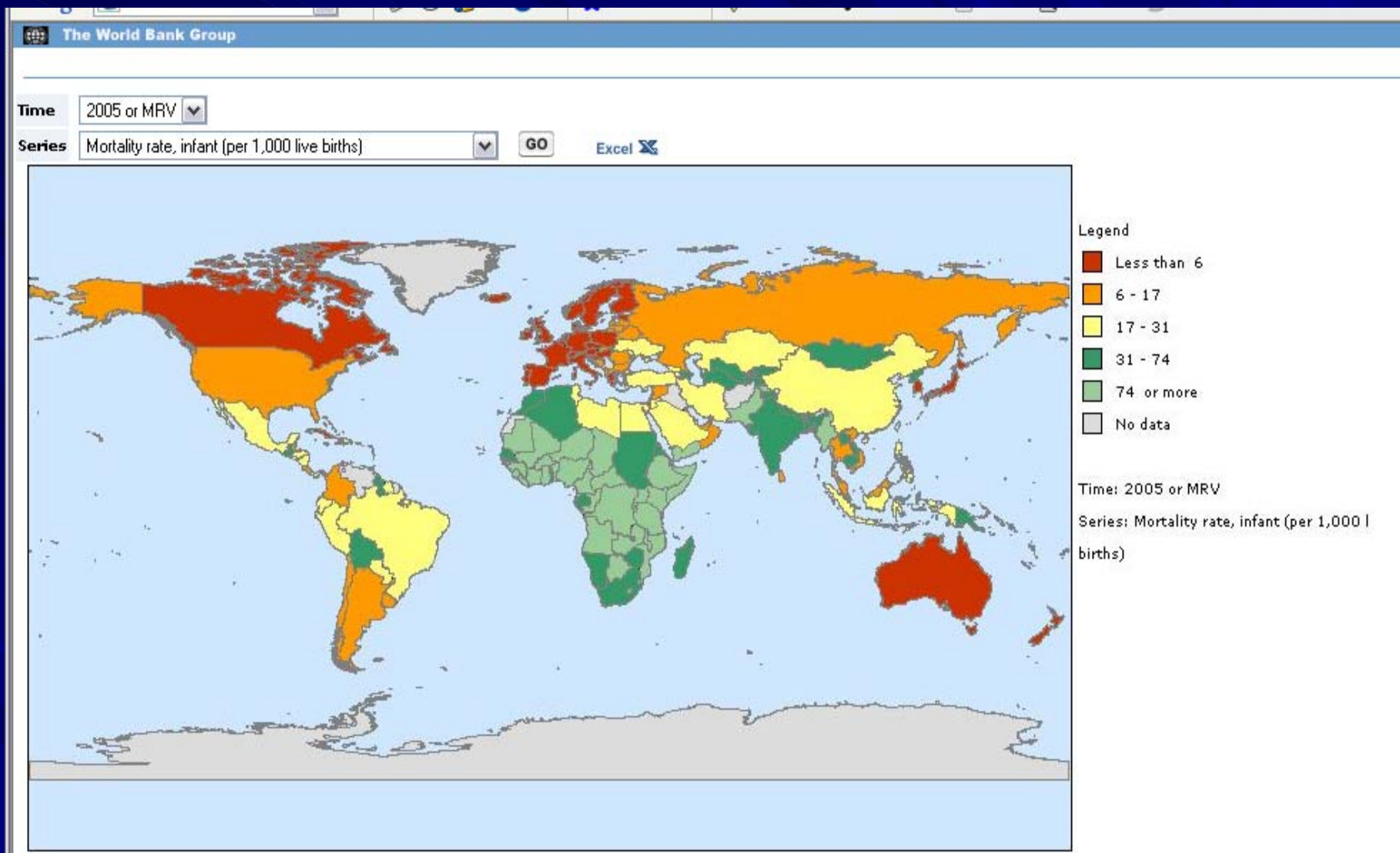
Hilton Waikoloa Village, Hawai'i

Infant Mortality

Infant mortality: the death of an infant in the first 365 days of life

Infant Mortality Rate (IMR) usually expressed as deaths per 1,000 live births

Infant Mortality Rate, 2005



Recent Trends in Infant Mortality in the United States

Marian F. MacDorman, Ph.D., and T.J. Mathews, M.S.

Key findings

Data from the Linked Birth/Infant Death Data Set and Preliminary Mortality Data File, National Vital Statistics System

- The U.S. infant mortality rate did not decline from 2000 to 2005.
- Data from the preliminary mortality file suggest a 2% decline in the infant mortality rate from 2005 to 2006.
- The U.S. infant mortality rate is higher than those in most other developed countries, and the gap between the U.S. infant mortality rate and the rates for the countries with the lowest infant mortality appears to be widening.
- The infant mortality rate for non-Hispanic black women was 2.4 times the rate for non-Hispanic white women. Rates were also elevated for Puerto Rican and American Indian or Alaska Native women.
- Increases in preterm birth and preterm-related infant mortality account for much of the lack of decline in the United States' infant mortality rate from 2000 to 2005.

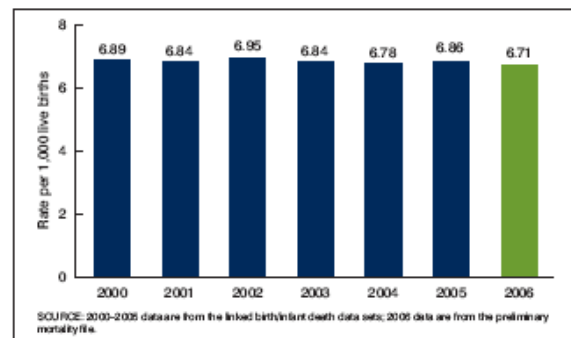
Infant mortality is one of the most important indicators of the health of a nation, as it is associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices. The U.S. infant mortality rate generally declined throughout the 20th century. In 1900, the U.S. infant mortality rate was approximately 100 infant deaths per 1,000 live births, while in 2000, the rate was 6.89 infant deaths per 1,000 live births. However, the U.S. infant mortality rate did not decline significantly from 2000 to 2005, which has generated concern among researchers and policy makers.

Keywords: Infant mortality • trends • race and ethnicity • preterm birth • international comparisons

What is the recent trend in infant mortality?

In 2005, the U.S. infant mortality rate was 6.86 infant deaths per 1,000 live births, not significantly different than the rate of 6.89 in 2000, based on data from the linked birth/infant death data set (1,2).

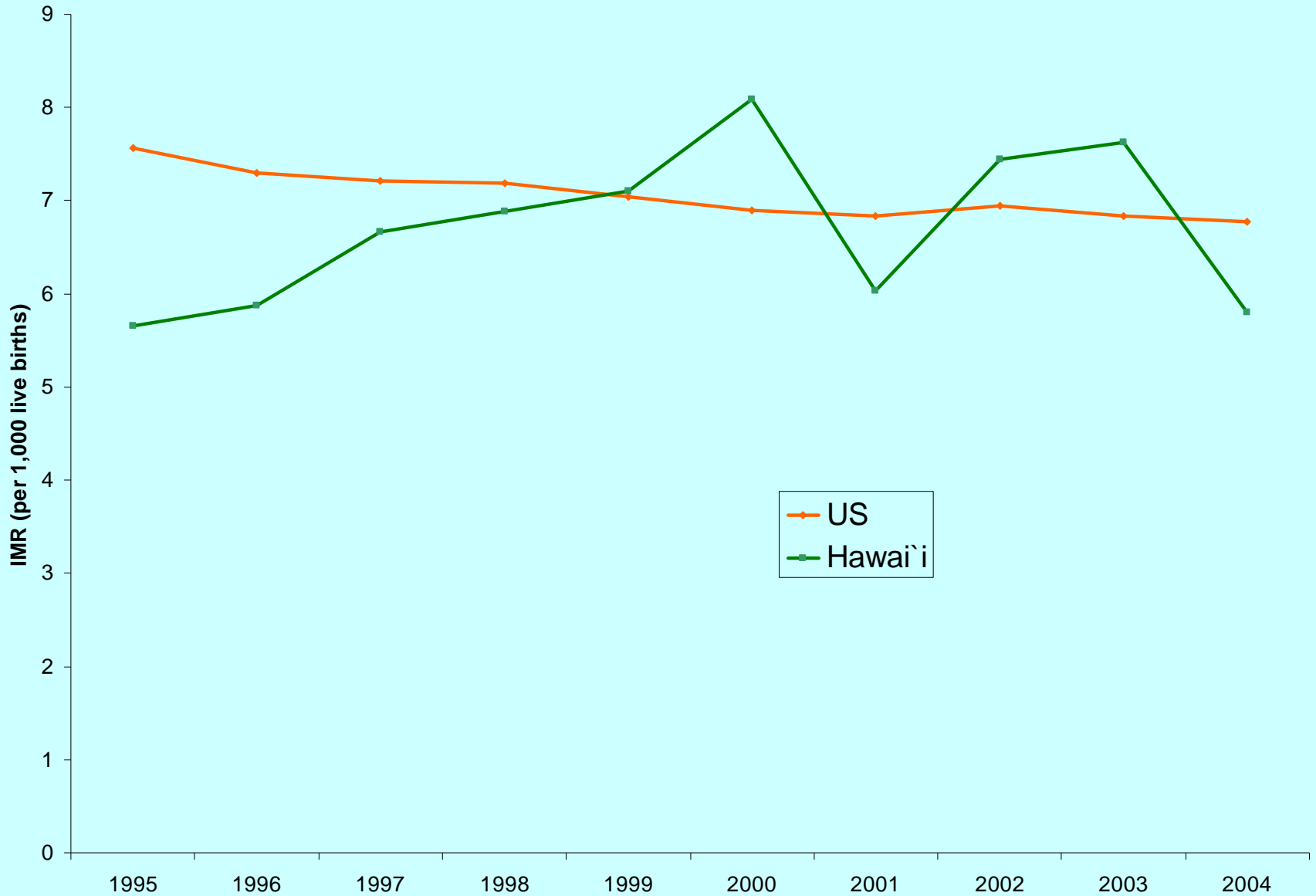
Figure 1. Infant mortality rate: United States, 2000–2005, and 2006 preliminary



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National Center for Health Statistics
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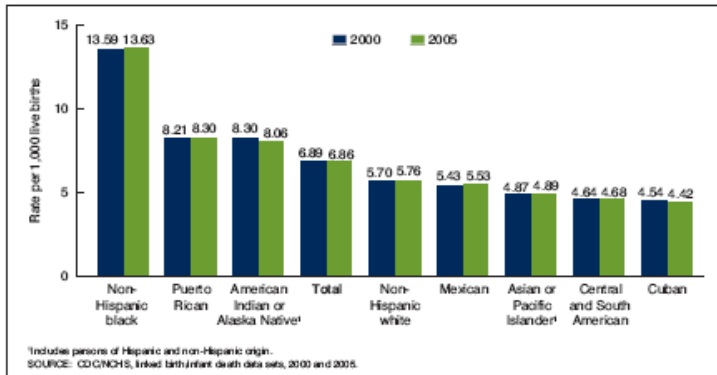
Infant Mortality Rate, US and Hawai`i, 1995-2004



Are there differences in infant mortality rates between racial and ethnic groups?

In 2005, there was a more than threefold difference in infant mortality rates by race and ethnicity, from a high of 13.63 for non-Hispanic black women to a low of 4.42 for Cuban women.

Figure 3. Infant mortality rates by race and ethnicity: United States, 2000 and 2005



Infant mortality rates were above the U.S. average for non-Hispanic black, Puerto Rican (8.30), and American Indian or Alaska Native (8.06) women.

These differences may relate in part to differences in risk factors for infant mortality such as pre-term and low birthweight delivery, socioeconomic status, access to medical care, etc. However, many of the racial and ethnic differences in infant mortality remain unexplained.

The infant mortality rate did not change significantly for any race/ethnicity group from 2000 to 2005.

The only race/ethnicity group to achieve the Healthy People 2010 target goal (4.5) as of 2005 was the Cuban population (4.42).

Infant Mortality Rates by Race, Hawai'i 1999-2005

Maternal Race	IMR (per 1,000)	95% CI
White	5.0	(4.1-5.9)
Hawaiian	8.5	(7.5-9.5)
Filipino	6.1	(5.1-7.1)
Japanese	5.5	(4.4-6.8)
Samoa	7.1	(4.7-10.3)
Black	12.0	(8.6-16.3)
Others	5.7	(4.6-7.0)
Unknown	9.4	(5.7-14.4)
Overall	6.6	(6.2-7.1)

(2008, Hayes, Eshima, Fuddy, Baruffi)

Basic Questions

Why has there been such a dramatic decline in the US?

Why do some countries still have rates 20-25 times greater than the US?

Why is the US still ranked 29th?

International Causes of Death

Historically and in developing countries

Generally have greater rates of infant death related to:

Infectious disease and their complications

Birth Hypoxia, asphyxia

Also have high rates related to circumstances in the perinatal period

Causes of Death, South Africa, 1996

	Percent of Total Infant Deaths (%)
Infectious and Parasitic Disease (A00-B99)*	20.7
Hypoxia and Birth Asphyxia, Atelectasis (P20-P28)	16.8
Diseases of the Respiratory System (J00-J98)	9.4
Congenital Anomalies (Q00-Q99)	5.3
Sudden Infant Death Syndrome (SIDS) (R95)	0.8
Perinatal Period (P00-P96: Excluding P20-P28)	29.1

*Denotes ICD 10 coding recommendations

Source: World Health Organization Mortality Database

Causes of Death, US 2005

	Percent of Total Infant Deaths (%)
Congenital Anomalies (Q00-Q99)*	19.5
Related to Short Gestation/Low Birthweight (P07)	16.6
SIDS (R95)	7.8
Maternal Complications (P01)	6.2
Complications of Placenta, Cord, and Membranes (P02)	3.9
Accidents (unintentional injuries, V01-X59)	3.8
Hypoxia and Birth Asphyxia, Atelectasis (P20-P28)	3.2
Other Perinatal (P22, P36, P50-P52, P54, P77)	10.1

*Denotes ICD 10 coding recommendations for NCHS selected causes of infant death

Source: NCHS Vital Statistics, http://www.cdc.gov/nchs/datawh/statab/unpubd/mortabs/lcwk7_10.htm (15 leading causes)

Causes of Death, Hawai'i 1999-2004

	Percent of Total Infant Deaths (%)
Congenital Anomalies (Q00-Q99)*	15.7
Related to Short Gestation/Low Birthweight (P07)	14.5
Maternal Complications (P01)	7.2
SIDS (R95)	5.3
Complications of Placenta, Cord, and Membranes (P02)	4.0

*Denotes ICD 10 coding recommendations for NCHS selected causes of infant death
Source: 2006: Hawai'i State Infant Mortality collaborative

Common Risk factors for Congenital Anomalies

Alcohol

Advanced Age

Common risk factors for LBW/PTD

Previous LBW/PTD

Smoking

Inadequate weight gain

Hypertension

First pregnancy

Common risk factors for perinatal complications

Smoking

Hypertension

Diabetes

Obesity

Tremendous improvement over time

But may want to shift the focus towards the
preconception period...



Some Data Sources: Women's Health and Preconception care

Behavioral Risk Factor Surveillance System
(BRFSS)

Vital Statistics

Pregnancy Risk Assessment and Monitoring
System (PRAMS)

Hospital Discharge Data

Behavioral Risk Factors, Chronic Disease, and Preconception Care

Delaying child birth to later ages, worsening trends in potentially modifiable risk factors (e.g., obesity), and increasing rates of chronic disease (e.g., diabetes, hypertension) could impact reproductive health

Study Goals

Determine national estimates of selected risk factors and chronic disease among reproductive aged women in 2007.

What are the trends in these risk factors and chronic diseases since 2001?

BRFSS

Behavioral Risk Factor Surveillance System

Random-digit dialed telephone survey

US non-institutionalized, civilian population

50 States, District of Columbia

Study Population:

2001,2003,2005,2007

Non-pregnant women, aged 18-44 years

Complete information on age and risk factors

N=242,441

Selected Risk Factors and Chronic Disease

Obesity

Self-reported height and weight with BMI \geq 30

Diabetes

Ever been diagnosed

Hypertension

Ever been diagnosed

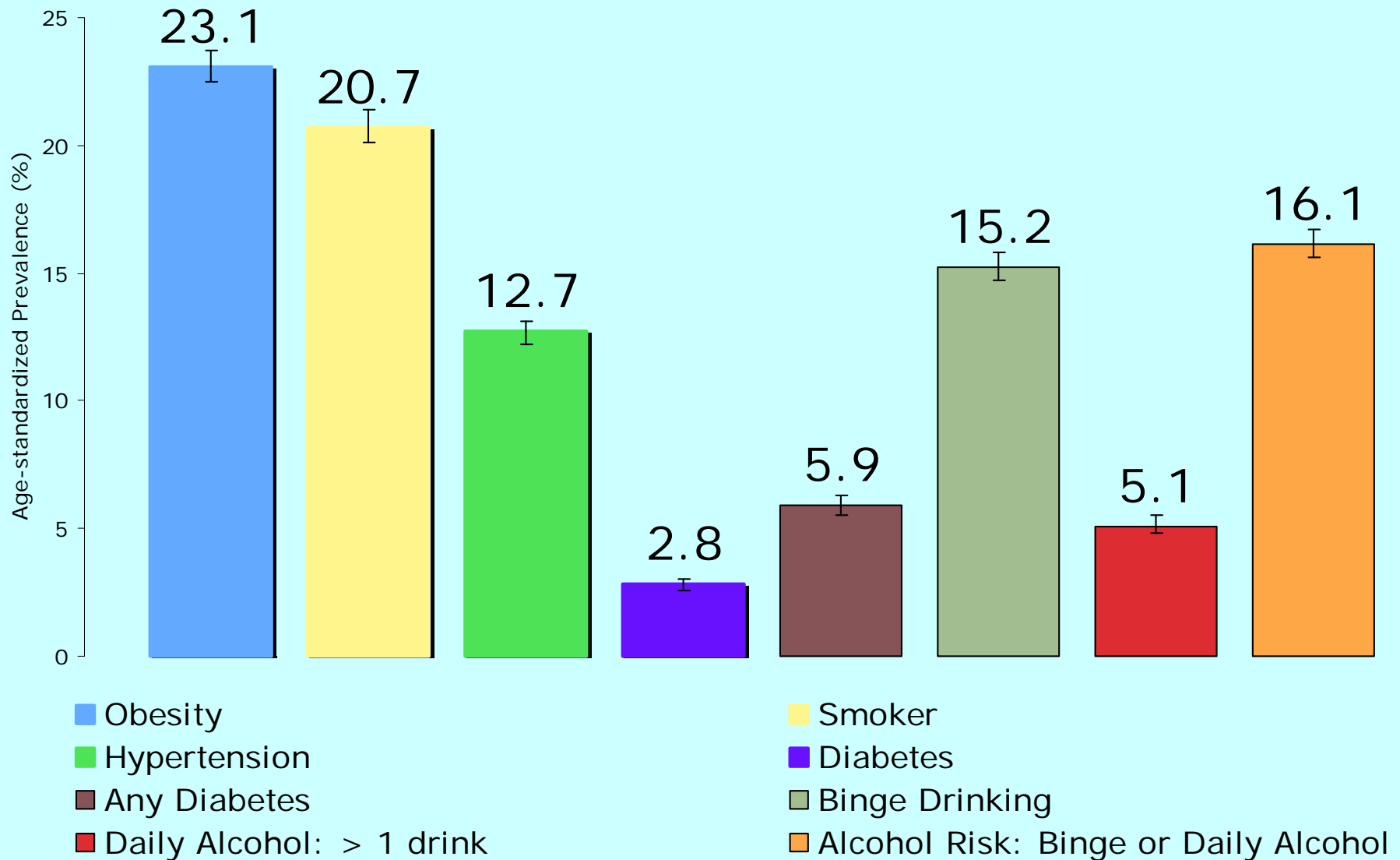
Smoking

Have smoked at least 100 cigarettes in lifetime
and current smoker

Alcohol Risk

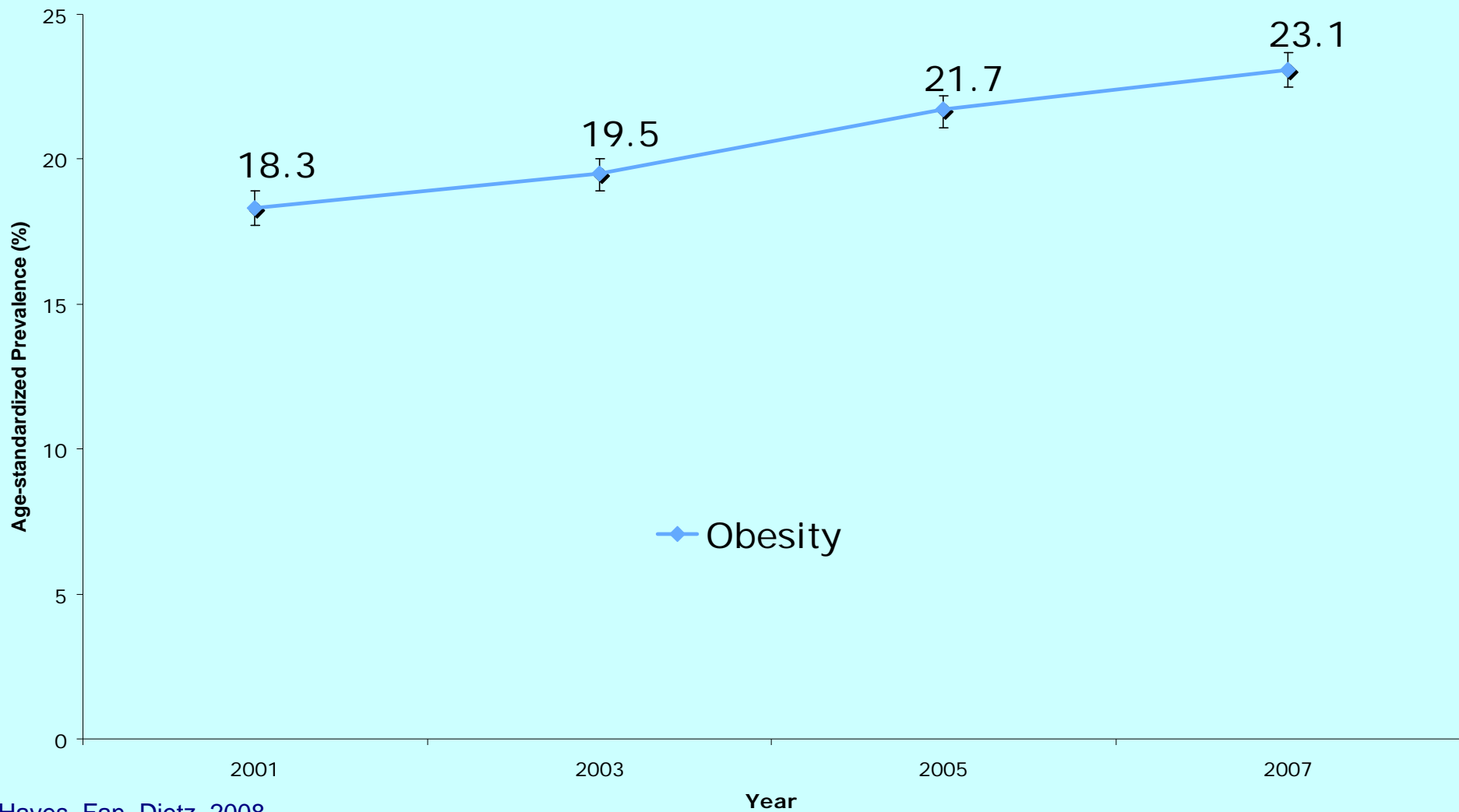
In past 30 days, more than 1 drink daily or at
least one binge drinking episode (5 or more
drinks in 2001-2005, 4 or more in 2007)

Selected Risk Factors and Chronic Disease among Reproductive Aged Women, BRFSS 2007



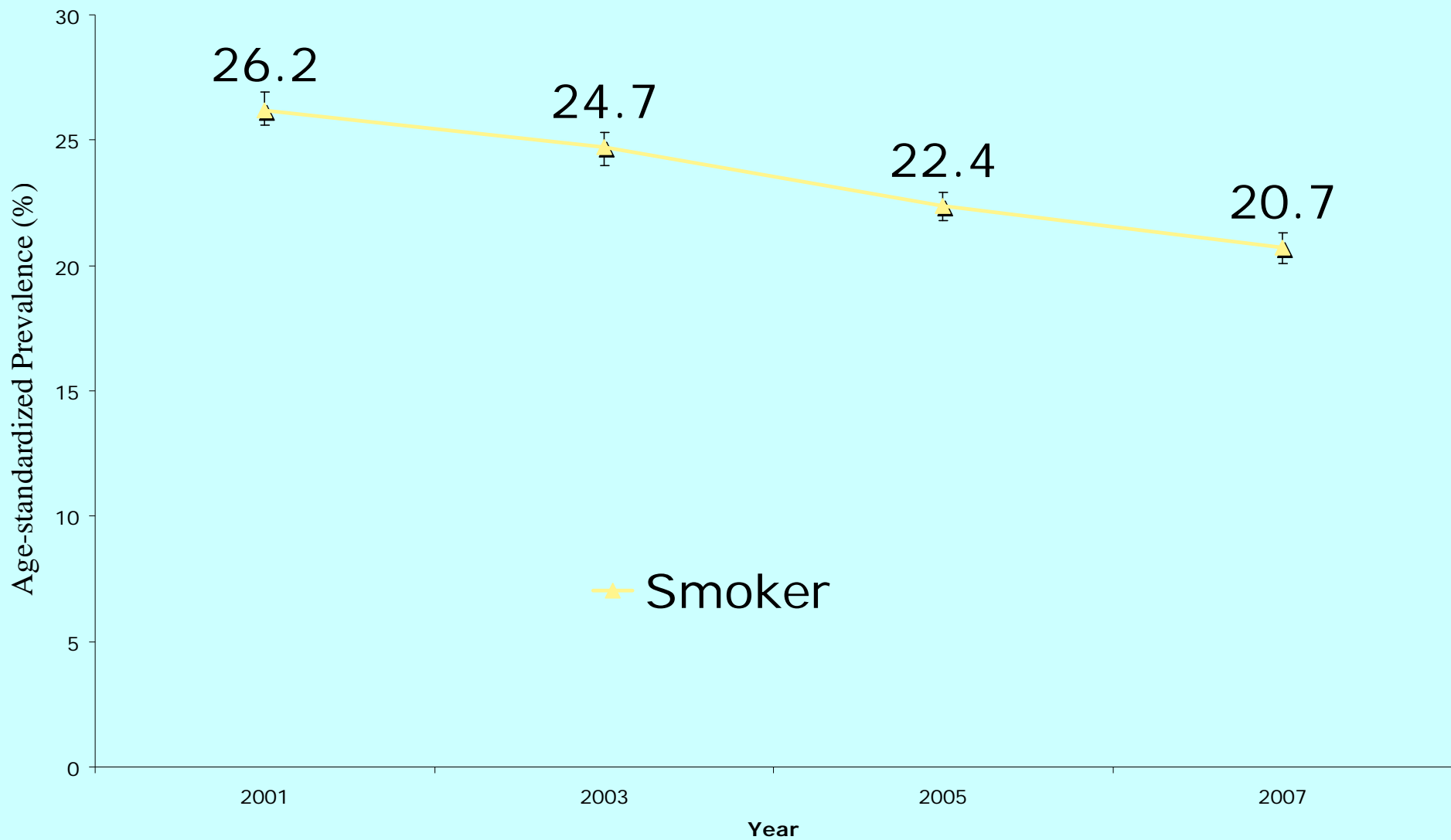
Obesity

Trends in Chronic Disease Risk Factors among Reproductive Aged Women, BRFSS 2001-2007



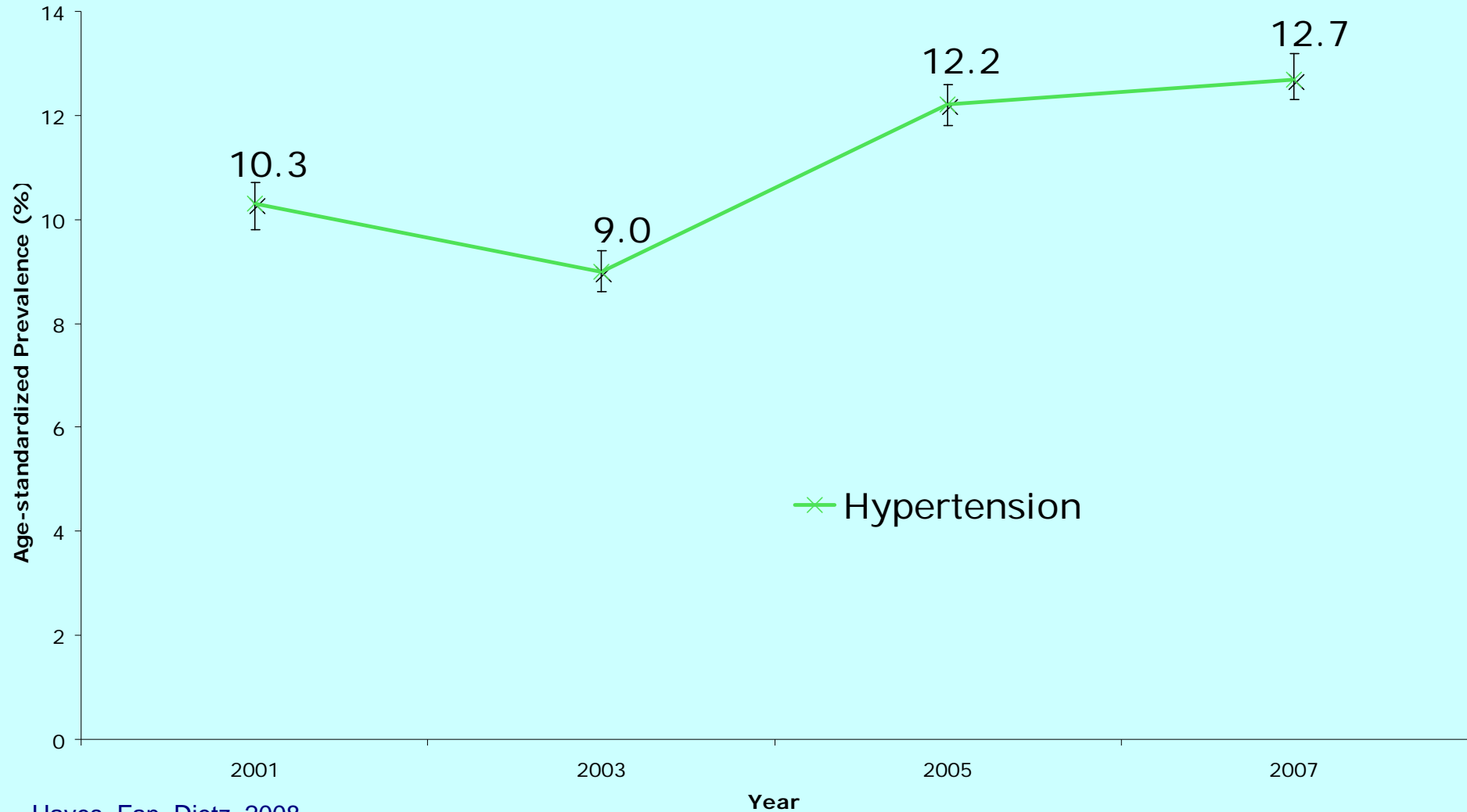
Smoking

Trends in Chronic Disease Risk Factors among Reproductive Aged Women, BRFSS 2001-2007



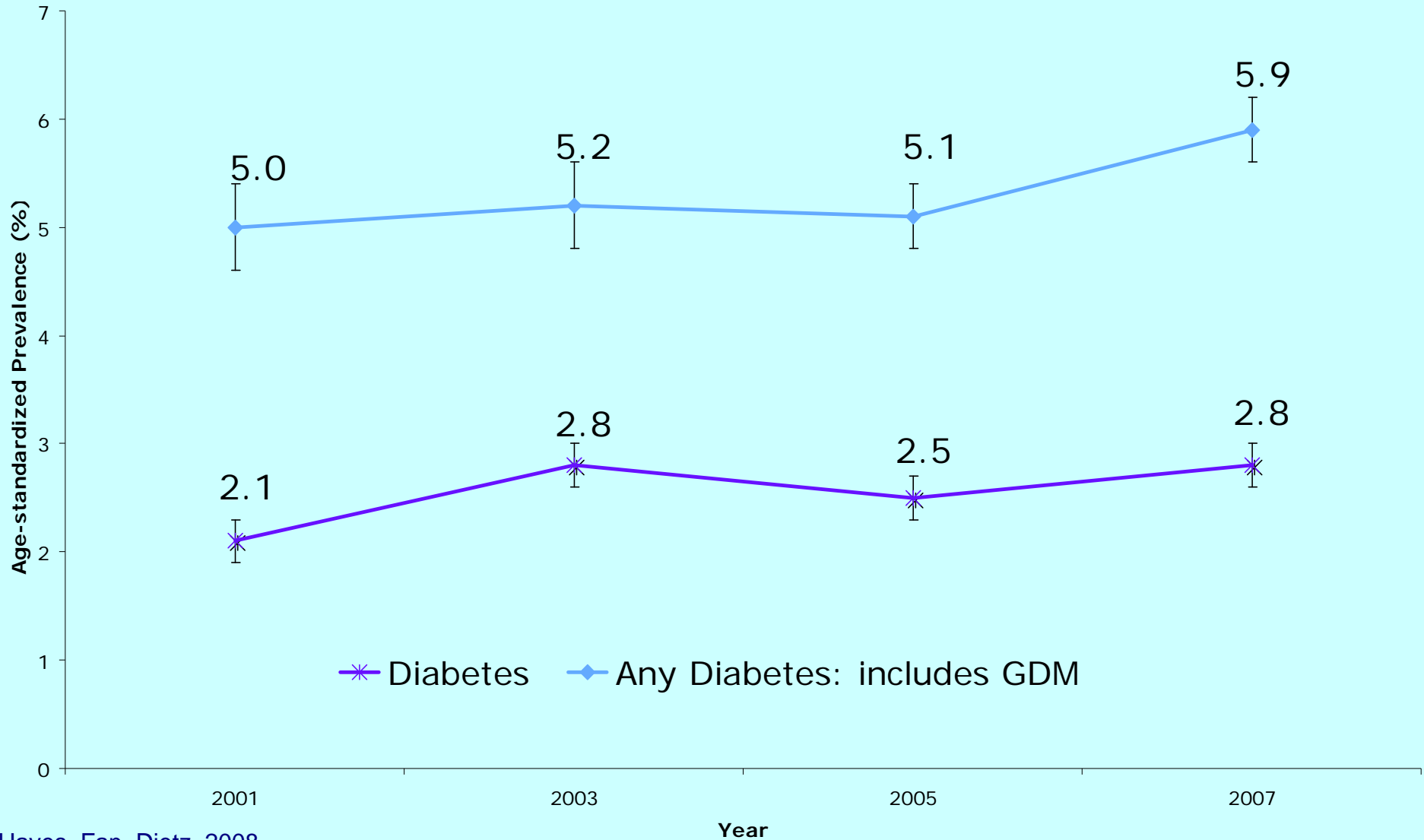
Hypertension

Trends in Chronic Disease Risk Factors among Reproductive Aged Women, BRFSS 2001-2007



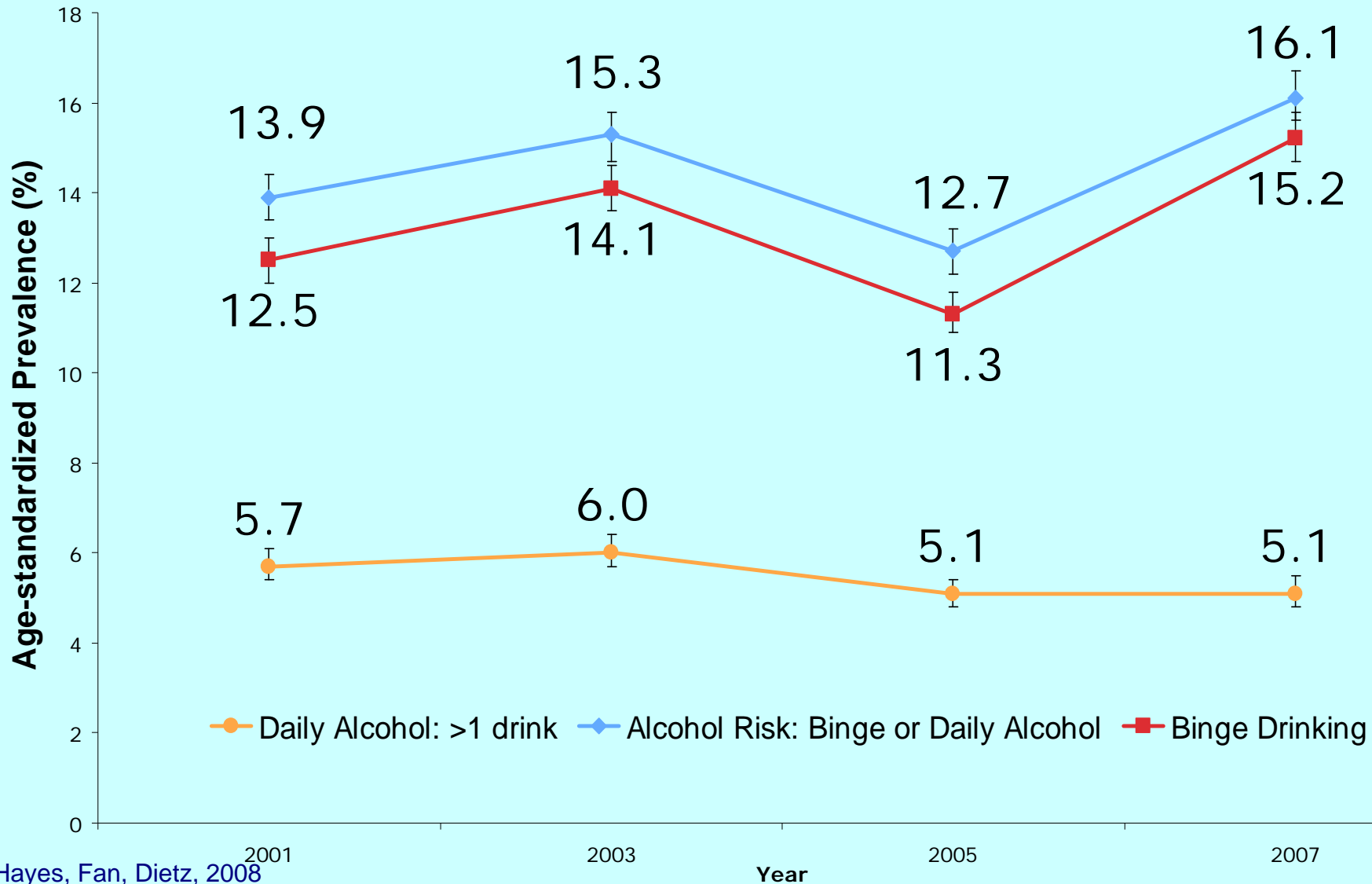
Diabetes

Trends in Chronic Disease Risk Factors among Reproductive Aged Women, BRFSS 2001-2007



Alcohol Risk

Trends in Chronic Disease Risk Factors among Reproductive Aged Women, BRFSS 2001-2007



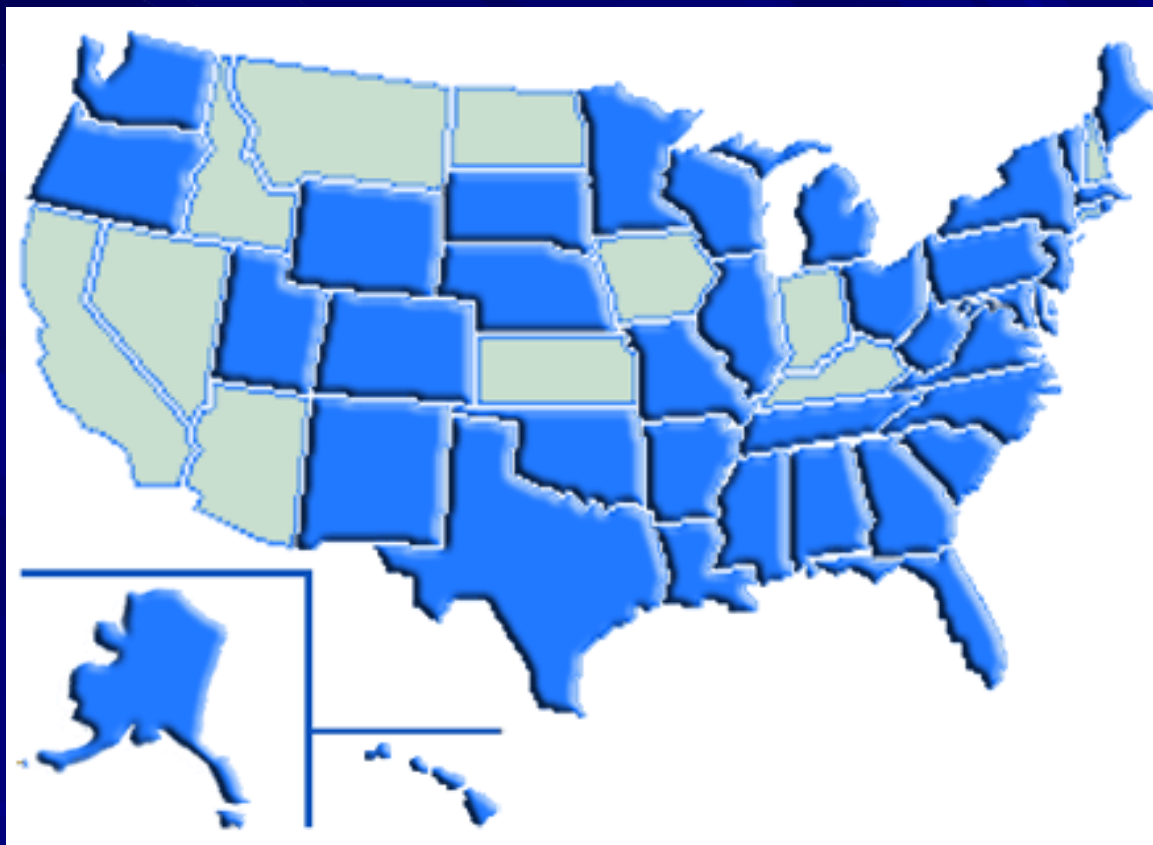
Summary

A substantial proportion of women of reproductive age have chronic disease or risk factors for chronic disease that may impact pregnancy outcomes

Rates of smoking continue to decline, but this is offset by increases in other risk factors and chronic disease since 2001

Important to address chronic disease and their risk factors in women of reproductive age may be done as part of preconception and interconception care

States Participating in PRAMS, 2007



37 states, New York City, and S. Dakota Sioux tribe

PRAMS

- State-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy
- Mailed survey with telephone follow up
- Core questions and state selected content
- In Hawai'i, about 200 surveys sent monthly
- Each year, approximately 2,000 respond
- Weighted to reflect all resident births in state (~18,000)

PRAMS 2008 Abstracts

APHA Annual conference (Oct 2008)

- Estimates of self-reported postpartum depression and racial/ethnic disparities among women in Hawai'i
- Characteristics of women eligible for the special supplemental nutrition program for women who were not on WIC during pregnancy, Hawai'i 2000-2006.
- Relationship between physical abuse and access to prenatal health care: Findings from Hawai'i PRAMS
- A Hawai'i case study on interconception care for women on Quest/Medicaid

Annual MCH Epi Conference (Dec 2008)

- Self-reported Postpartum Depression, Unintended Pregnancy, Racial/Ethnic, and Socioeconomic Disparities among Women in Hawai'i : Pregnancy, Risk, Assessment, and Monitoring System (PRAMS), 2004-2006
- Gestational weight gain and birthweight outcomes using prenatal weight gain grids, a method to account for gestational age at birth, Hawai'i Pregnancy Risk Assessment Monitoring System (PRAMS), 2000-2006
- Infant Sleep Position in Hawai'i : Avenues for Intervention to Meet Healthy People 2010 Goals
- Inadequate Multivitamin or Prenatal Vitamin Intake in Hawai'i by Maternal Characteristics: Finding from Hawai'i PRAMS Survey, 2004-2006

Some uses of PRAMS data

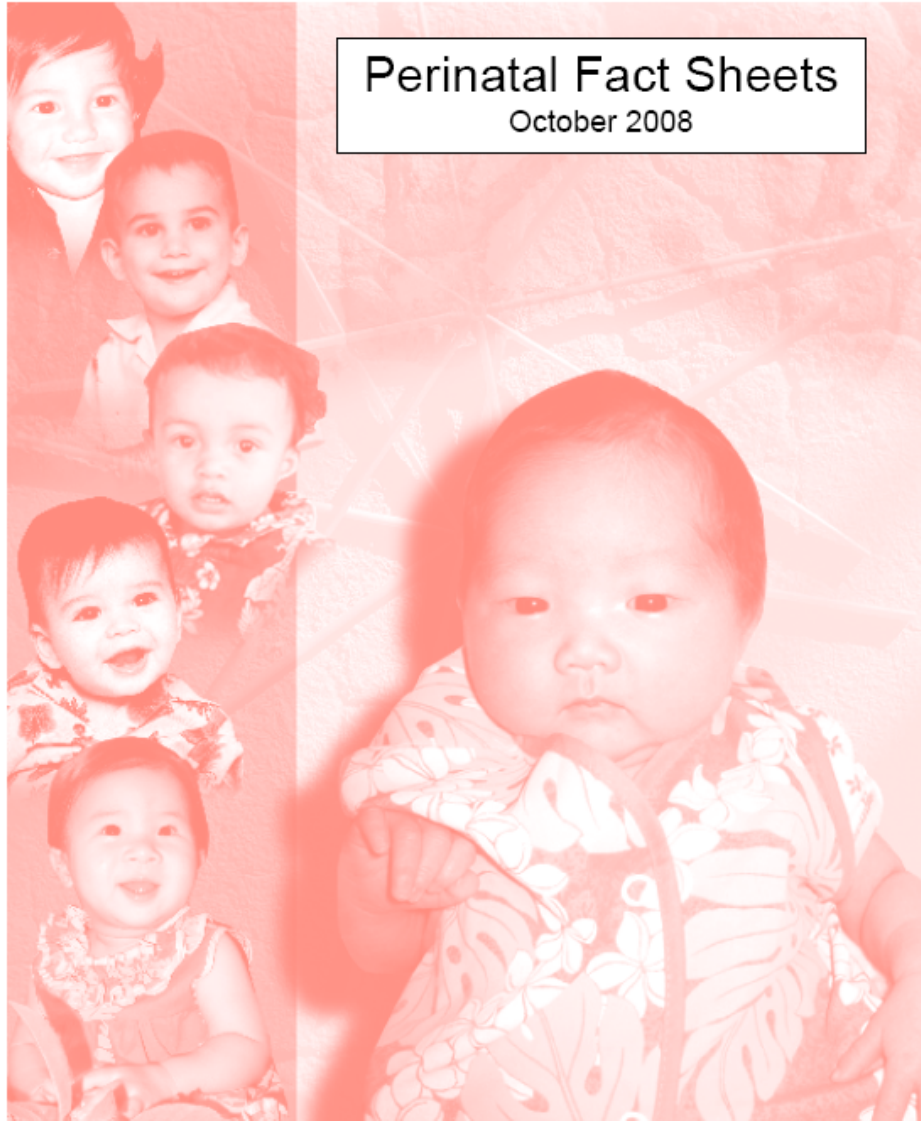
- Hawai'i Kids Count/Center on the Family at the University of Hawai'i at Manoa requested data on the prevalence of women that smoked, drank or used drugs during the last three months of pregnancy.
- Hawai'i DOH Genetics program used the data in grant application hoping to increase genetic education and clinical services
- Collaboration with faculty at the Office of Public Health Studies assessed risk behaviors among QUEST/Medicaid insured mothers compared to those with other health insurance. Resulted in a new Law (Act 2, 2008 Special Session) to address preconception care for QUEST insured women from 8 weeks to 6 months.



**Family Health Services Division
Department of Health
State of Hawai'i**

Perinatal Fact Sheets

October 2008



What is a Fact Sheet?

- A way to share information
- Summarize and highlight key issues
- Variation by Socio-demographic groups
 - Race/Ethnicity, Maternal Age, Maternal Education, County of Residence.....
- Graphs, Charts, Tables....
- Incorporate qualitative comments from PRAMS participants

The Perinatal Compendium

- Highlight key information related to perinatal health
- Multiple data sources used, primarily PRAMS
- Organized approximately along the life course perspective



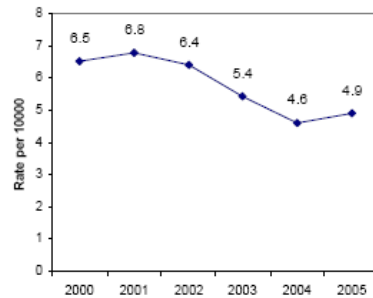
PRAMS Preconception Vitamin Fact Sheet

Pregnancy Risk Assessment Monitoring System

Importance of Preconception Vitamins

Multivitamins or prenatal vitamins typically contain folic acid can help reduce the risk of neural tube defects (NTD), particularly spina bifida and anencephaly, when taken in sufficient amounts during the first month of pregnancy. Studies have shown that 400 micrograms of folic acid taken daily before pregnancy can reduce the risk of having a child with a NTD by 50%.¹ The average lifetime cost of caring for an infant with a NTD is estimated at \$635,763 (\$279,210 direct cost) per year.² The national rate of spina bifida and anencephaly were 1.8 and 1.1 (per 10,000 live births) in 2005.³ The national Healthy People 2010 goal is to increase the daily intake of folic acid up to 80% for all women of childbearing age.

Three Year Rolling Average Rate of Neural Tube Defects, Hawai'i Birth Defects Program 2000-2005



Trends in Neural Tube Defects in Hawai'i

The three year rolling average rate of NTD, calculated as a composite of spina bifida and anencephaly, from the

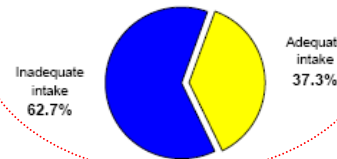
Data Highlights

- Overall, 62.7% of mothers took an inadequate amount of preconception vitamins
- Inadequate intake of preconception vitamins was more likely among Black, Hawaiian, and Samoan women
- Younger mothers, those with a high school or lower education, unmarried mothers, and those living in Hawai'i County were more likely to take an inadequate amount of preconception vitamins
- 72.6% of mothers with unintended pregnancy report taking an inadequate amount of preconception vitamins
- The rate of Neural Tube Defects has increased to 4.9 per 10,000 births

Preconception Vitamin Intake

Data from the Hawai'i PRAMS surveys (2004-2006) show that the majority (62.7%) of women took an inadequate amount of multivitamins or prenatal vitamins (defined as less than 4 days per week) in the month before pregnancy. The annual proportion of women taking an inadequate amount of preconception vitamins has increased from 60.7% in 2004 to 64.2% in 2006 coinciding with the increasing rate of NTD.

Preconception Vitamin Intake, Hawai'i PRAMS 2004-2006



The majority of women (62.7%) who had a live birth did not take vitamins at least 4 days/ week in the month before they got pregnant

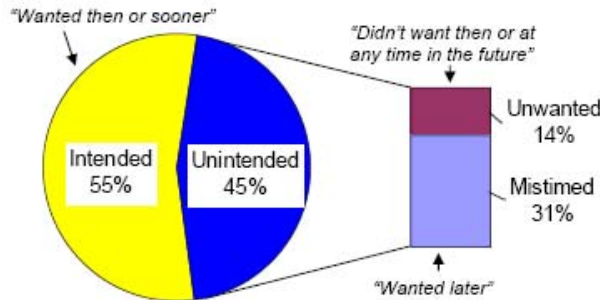
A slight increase in Hawai'i in Spinda Bifida/ Anencephaly recently



Importance of Pregnancy Intention

When pregnancies are intended and planned, there is greater opportunity and motivation for women and their partners to adopt or maintain positive health behaviors, often leading to improved infant outcomes.¹ Thus, a national Healthy People 2010 goal is to increase the proportion of intended pregnancies to 70%. Using three years of Hawai'i PRAMS (2004-2006), 55% of all pregnancies resulting in a live birth are intended as defined by wanting the pregnancy at the time of occurrence or sooner. The remaining 45% are considered unintended pregnancies and are comprised of mistimed (31%) and unwanted pregnancies (14%). While there has been a slight increase in the overall unintended rate in Hawai'i since 2000, the composition of unwanted versus mistimed pregnancies has changed; specifically, unwanted pregnancies have increased from 8% to 14% while mistimed pregnancies have declined from 35% to 31%.

Pregnancy Intention, Hawai'i PRAMS 2004-2006



About the Data

Data Highlights

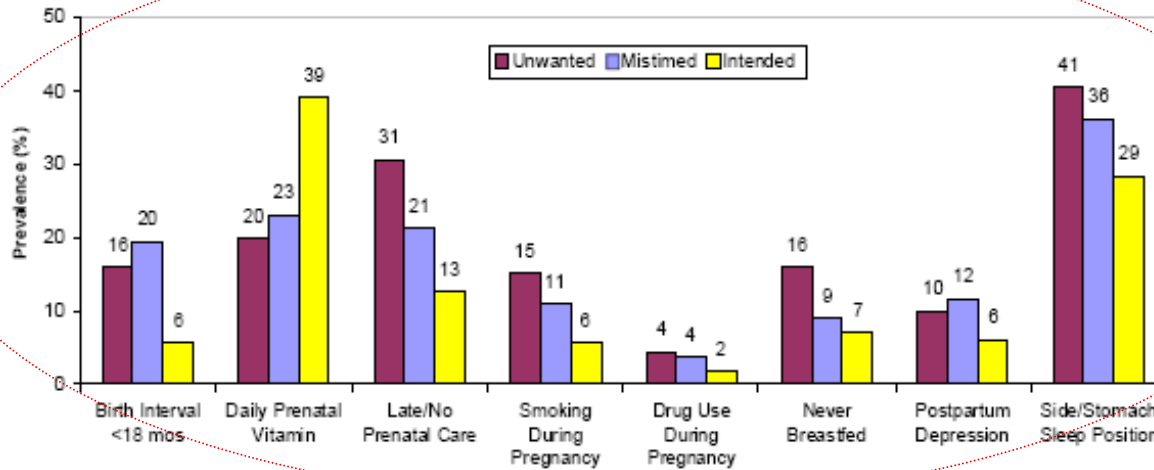
- About 45% of all pregnancies in Hawai'i are unintended
- Women who were more likely to have an unintended pregnancy were Black, Hispanic, Hawaiian, Samoan, other Pacific Islander or Filipino, younger, less educated, unmarried, uninsured or Medicaid/QUEST insured, and lived in Hawai'i County
- Unintended pregnancy is related to adverse health behaviors including late or no prenatal care, substance use, never breastfeeding, postpartum depression, and short birth intervals
- In 2006, approximately \$10.9 million dollars was the estimated hospital cost for unwanted pregnancies in the Medicaid/QUEST program
- Only half of women with an unintended pregnancy were using contraception
- 78% of women were using contraception postpartum

"I prolonged seeking prenatal care because I needed time to decide whether or not I wanted to keep my baby. Unplanned pregnancies are extremely stressful because you have little time to consider how you would care for a child, support yourself, and change the environment you've surrounded yourself in."

--Hawai'i PRAMS Participant

Almost half (45%) of pregnancies resulting in a live birth were unintended, with the majority being mistimed

Perinatal Health Behaviors and Outcomes by Pregnancy Intention,
Hawai'i PRAMS 2004-2006



Consequences of Unintended Pregnancy

Pregnancies that are unintended are more likely to result in adverse health behaviors and outcomes before, during, and after pregnancy.¹ Women with unintended pregnancies in Hawai'i were more likely to have a short birth interval and less likely to be taking daily vitamins before pregnancy. They were more likely to obtain late or no prenatal care and to smoke or use drugs during pregnancy. Even after birth of the infant, women with unintended pregnancies were more likely to never

"I was breastfeeding and thought I wouldn't get pregnant."

"I couldn't afford birth control - my medical insurance doesn't cover contraceptives."

-- Hawai'i PRAMS Participants

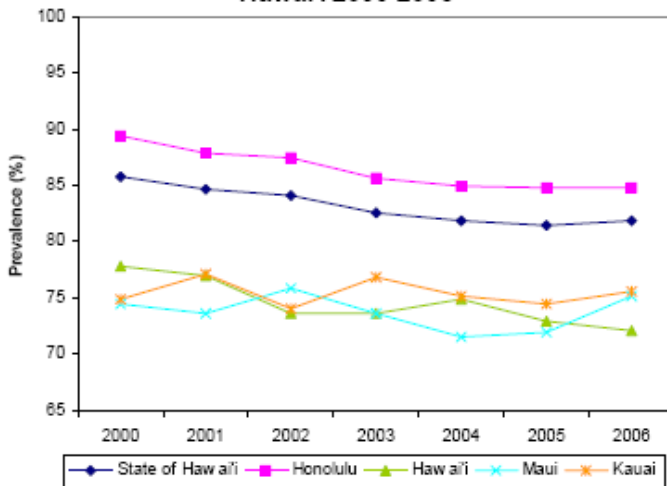
Unintended pregnancies are associated with adverse health behaviors and outcomes

Trends in Early Prenatal Care

The rate of early prenatal care in the State of Hawai'i has slowly decreased from 86% in 2000 to 82% in 2006. Decreasing trends in early prenatal care were only noted for women residing in Honolulu and Hawai'i counties. Growing physician shortages may have contributed to these declines. Efforts are needed to understand and reverse these negative trends.

- Reported barriers to prenatal care included not having enough money and not being able to get an appointment as early as they wanted
- The proportion of women who reported discussing various health topics with a prenatal provider ranged from 87% for birth defects to about 50% for seatbelt use and partner violence

Trends in Early Prenatal Care by County, Hawai'i 2000-2006



Source: Hawai'i Resident Birth Certificates 2000-2006, Office of Health Status Monitoring, Hawai'i State Department of Health; calculations by the Family Health Services Division

"It's important to get prenatal care early to prevent problems. Education is key."

"There's not enough OB/GYN on Hawaii Island -too many pregnancies, too few doctors and midwives. Patient care suffers with long appointment waits and less time with the doctor."

"Because of the long wait for the doctor where I live, I had to drive to town every week for prenatal care."

--Hawai'i PRAMS Participants

For More Information Contact:

Hawai'i PRAMS Coordinator
Hawai'i Department of Health
PRAMS@doh.Hawaii.gov
(808) 733-4060

Smaller proportions of women are entering prenatal care in the first trimester (steady decline since 2000)

Neighbor Island Counties first trimester enrollment consistently about 10-15% lower

Prevalence and Cessation Rates of Substance Use

In Hawai'i, about 1 in 5 women (~20%) reported smoking or binge drinking in the 3 months prior to pregnancy, while the self-reported use of any illicit drugs (including marijuana, amphetamines, cocaine, tranquilizers, hallucinogens, or sniffing products) is 6% in the 12 months prior to pregnancy. These behaviors change during pregnancy with 9% smoking, 6% reporting any alcohol intake, and binge drinking in 1% during the last trimester. The use of illicit drugs is reported by 3% of mothers at any time during the pregnancy. The cessation rate reflects the proportion of women who quit among those that reported doing the behavior prior to the pregnancy. For smoking, the cessation rate was 59.3%, reflecting the proportion that still smoked in the last trimester. For binge drinking, 95.8% of those who reported binge drink in the month before pregnancy reported no longer binge drinking in the last trimester. Among those using illicit drugs, the cessation rate was 59.8%. Unfortunately, only 35.9% of those who smoked prior to pregnancy report not smoking 3-6 months postpartum.

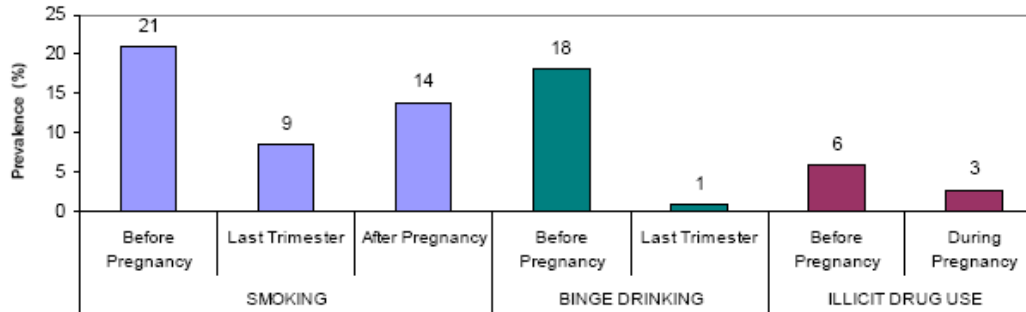
"I think there should be more information made available to pregnant mothers about the dangers of smoking during pregnancy. I don't think this information is as available to younger mothers as it was to me growing up."

--Hawai'i PRAMS Participant

Cessation Rates in Pregnancy, Hawai'i PRAMS 2004-2006

Among Smokers before Pregnancy	
Cessation in pregnancy	59.3%
Cessation 3-6 months postpartum	35.9%
Among Binge Drinkers before Pregnancy	
Cessation in pregnancy	95.8%
Among Illicit Drug users before Pregnancy	
Cessation in pregnancy	59.8%

Perinatal Substance Use, Hawai'i PRAMS 2004-2006



About 20% reported binge drinking or smoking in the month before pregnancy

Large number of those using substances report changing their behavior during pregnancy, but 9% of all smoke in the last trimester and 14% smoke in the early postpartum period

**Estimates of Perinatal Substance Use by Maternal Characteristics,
Hawai'i PRAMS 2004-2006**

	Binge Drinking Before Pregnancy % (95% CI)*	Smoking During Pregnancy % (95% CI)	Drug Use During Pregnancy % (95% CI)
Race/Ethnicity			
White	22.5 (20.1-25.1)	7.4 (5.9-9.1)	3.1 (2.2-4.3)
Black	10.1 (5.7-17.5)	3.6 (1.4-8.9)	#
Hispanic	16.0 (10.1-24.5)	3.8 (1.5-9.3)	#
Hawaiian	24.7 (22.4-27.2)	13.7 (11.8-15.8)	3.9 (2.9-5.2)
Samoan	21.8 (15.6-29.7)	17.4 (11.9-24.8)	#
Other Pacific Islander	11.1 (7.6-16.0)	4.6 (2.5-8.6)	3.0 (1.4-6.3)
Filipino	11.0 (9.3-13.0)	5.1 (4.0-6.6)	1.0 (0.5-1.7)
Japanese	13.7 (11.3-16.6)	6.9 (5.1-9.2)	1.7 (0.9-3.1)
Chinese	5.8 (4.3-7.6)	1.5 (0.9-2.6)	1.2 (0.7-2.1)
Korean	16.6 (13.1-20.9)	8.1 (5.7-11.5)	3.2 (1.7-6.0)
Other Asian	15.1 (9.1-23.9)	6.5 (2.8-14.3)	#
Maternal Age			
Under 20 years	18.5 (14.8-22.8)	9.8 (7.1-13.4)	4.3 (2.7-7.0)
20-24 years	25.2 (22.8-27.8)	11.6 (9.8-13.6)	3.4 (2.5-4.5)
25-34 years	17.2 (15.8-18.7)	7.9 (6.9-9.1)	2.7 (2.1-3.4)
35 or more years	10.6 (8.8-12.7)	5.9 (4.6-7.6)	1.4 (0.8-2.4)
Maternal Education			
< High School	16.2 (13.1-19.8)	18.0 (14.7-21.8)	4.9 (3.3-7.4)
High School	20.9 (19.2-22.8)	11.5 (10.2-13.1)	3.2 (2.5-4.1)
Some College	19.5 (17.5-21.7)	7.2 (5.9-8.7)	3.0 (2.2-4.0)
College Graduate	13.0 (11.4-14.9)	1.6 (1.1-2.4)	0.9 (0.5-1.5)
Marital Status			
Married	14.8 (13.7-16.0)	5.3 (4.6-6.1)	1.3 (0.9-1.7)
Unmarried	24.4 (22.4-26.6)	15.0 (13.3-16.9)	5.6 (4.6-6.8)
Parity			
First Birth	22.6 (20.9-24.4)	6.7 (5.7-7.9)	3.3 (2.6-4.2)
Second or Third	15.5 (14.1-17.0)	8.6 (7.5-9.8)	1.9 (1.4-2.6)
Fourth or More	12.5 (10.0-15.6)	15.8 (12.9-19.2)	4.1 (2.6-6.2)
Health Insurance Prior to Pregnancy			
Private Insurance	20.8 (17.0-19.5)	5.3 (4.6-6.1)	1.4 (1.1-1.9)
Medicaid/QUEST	15.7 (13.5-18.3)	18.3 (15.9-21.0)	6.1 (4.7-7.9)
None	18.2 (17.8-24.1)	12.0 (9.6-14.8)	4.6 (3.2-6.6)
County of Residence			
Hawai'i	20.4 (17.4-23.8)	13.0 (10.5-16.0)	5.1 (3.6-7.2)
Honolulu	17.2 (16.0-18.4)	7.9 (7.0-8.8)	2.0 (1.6-2.5)
Maui	21.7 (18.3-25.5)	8.9 (6.7-11.8)	3.5 (2.2-5.5)
Kauai	18.1 (13.5-23.9)	8.1 (5.1-12.9)	6.6 (3.9-11.1)
Overall	18.1 (17.1-19.2)	8.6 (7.9-9.4)	2.7 (2.3-3.3)

*Note: 95% CI refers to the 95% confidence interval around estimate
#Note: Estimates are unreliable and not reportable

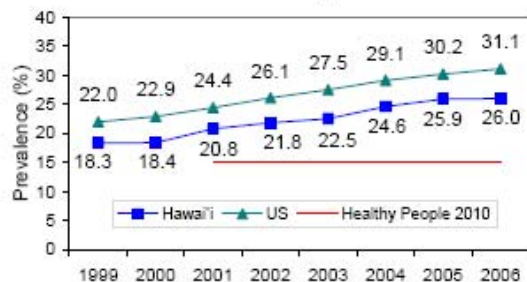
Variation by socio-demographic groups summarized in table



Cesarean Delivery

A cesarean delivery is the most common surgical procedure done in the United States with more than one million of these major operations occurring each year.¹ Cesarean deliveries are indicated for both maternal and fetal reasons including unstable coronary artery disease, non-reassuring fetal status, placenta previa, and cephalopelvic disproportion.¹ Cesarean deliveries result in higher costs, longer hospitalizations, and may increase risks of short and long term morbidity, compared to a normal vaginal delivery.¹ Indications for a cesarean delivery has come under closer scrutiny due to rising trends.¹ The national Healthy People 2010 goal is to reduce the overall rate of cesarean deliveries to 15%.²

Trends in Cesarean Delivery, 1999-2006



Source: Hawaii Resident Birth Certificates 1999-2006, Office of Health Status Monitoring, Hawaii State Department of Health; calculations by the Family Health Services Division National Centers for Health Statistics, Birth Files 1999-2006

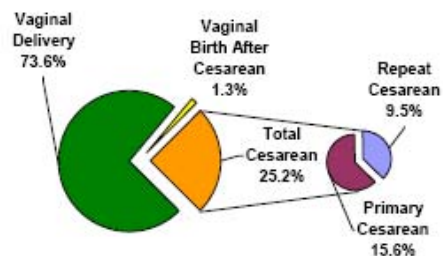
Trends in Cesarean Delivery

There has been a significant rise in cesarean deliveries in Hawaii, accounting for 26.0% of all births in 2006. The

Data Highlights

- In 2006, 26% of all births were a cesarean delivery, a 42% increase since 1999
- Women more likely to have a cesarean delivery were other Pacific Islander, Filipino, Korean, and other Asian, aged 35 years and older, a higher education, an intended pregnancy, obese women, gaining greater than ideal weight, and lived in Maui or Hawaii County
- Pregnancies with medical risk factors are about 25% more likely to result in a cesarean delivery
- Pregnancies with complications of labor and/or delivery are twice as likely to result in a cesarean delivery
- Infants born in a primary cesarean were more likely to be low birth weight, preterm, and less likely to have initiated breastfeeding
- Infants born in a repeat cesarean were more likely to be preterm and less likely to have initiated breastfeeding

Cesarean Deliveries, Hawaii PRAMS 2004-2006



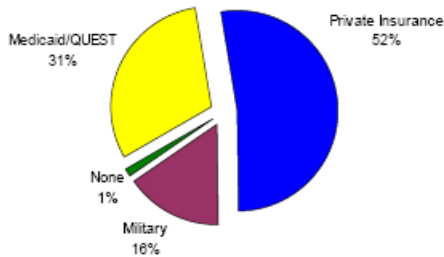
Cesarean Delivery, Medical Risk Factors and Complications of Labor and Delivery

Cesarean delivery up 42% since 1999

Accounts for about 26.0% of all deliveries in Hawaii and 31.1% of deliveries in the entire US

Medicaid status. Using hospital discharge data, acquired from the Hawai'i Health Information Corporation, various maternal and child health indicators were evaluated by insurance status. The QUEST program accounts for close to one third of all births in Hawaii.

Insurance at Delivery, Hawai'i 2004-2006



"I would like to say thank you to QUEST for giving me medical care. It sure took a lot of pressure off my shoulders and I was much happier. When you're happy as a mother you take care of yourself better, and therefore have a healthier baby and family too. Mahalo"

"It took QUEST a long time to kick in. When I got QUEST, not many OB/Gyns accepted it."

- Hawai'i PRAMS Participants

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Suggested Citation

Schempf A, Hayes D, Fuddy L. "Medicaid/QUEST Birth Outcomes Fact Sheet." Honolulu, HI: Hawai'i Department of Health, Family Health Services Division; October 2008.

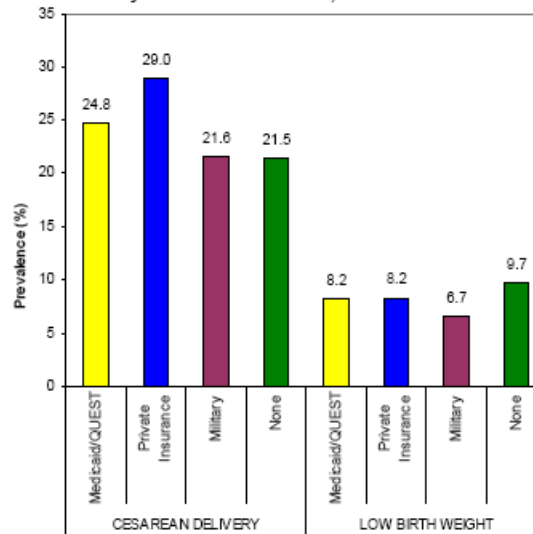
Medicaid/QUEST insured compared to those with private or military insurance

- Women with Medicaid/QUEST insured deliveries were more than twice as likely to experience a short birth interval as women who were privately insured

Delivery Outcomes

Cesarean deliveries were highest in those with private insurance, intermediate in those with Medicaid/QUEST, and lowest in those with military insurance or were uninsured. A low birth weight (LBW; <2,500 grams or 5.5 pounds) infant was highest in the uninsured, similar between those on Medicaid/QUEST, and lowest among those with military insurance. There were no meaningful differences in maternal or newborn length of stay (not shown).

Cesarean Delivery and Low Birth Weight by Maternal Insurance, Hawai'i 2004-2006



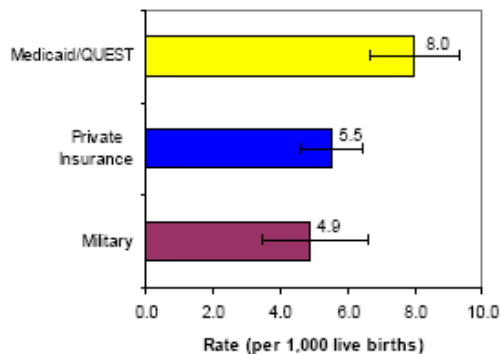
QUEST/Medicaid accounts for close to a third of all births in Hawai'i

QUEST/Medicaid have an intermediate rate of Cesarean deliveries and LBW births

Infant Mortality

The infant mortality rate for the Medicaid/QUEST insured was significantly higher, compared to private and military insured births.

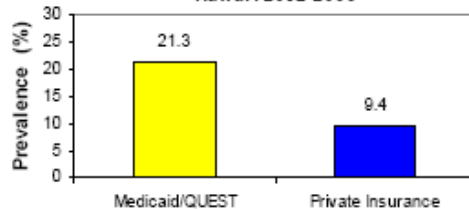
Infant Mortality Rates by Insurance, 2003-2005



Birth Interval

Short birth intervals are associated with adverse perinatal events including preterm birth and growth restriction.³ In women who had multiple deliveries between 2002-2006, those who were Medicaid/QUEST insured were more than twice as likely to deliver another infant within 15 months of the previous birth compared to those with private insurance.

Birth Interval <15 months by Insurance, Hawai'i 2002-2006



Discussion

While few women in Hawai'i are uninsured, comparisons between Medicaid/QUEST and uninsured suggest that Medicaid/QUEST may be helping to reduce LBW and infant mortality among the otherwise uninsured. An increased effort to identify the circumstances of women who remain uninsured and whether they are ineligible due to residency or other factors would be helpful to see if they are eligible for Medicaid/QUEST or other programs.

Future linkage to the birth/death certificate would help to differentiate the timing and underlying causes of infant death according to Medicaid status in addition to prenatal care utilization, and other factors. This could be accomplished by linking the birth certificate file to either Medicaid data or to hospital discharge files. Additionally, implementing the 2003 National Birth Certificate revision (currently in 25 states) would also improve analysis of these issues. Continued evaluation of Medicaid performance will be vital to improve outcomes for Hawai'i's most vulnerable low-income mothers and their children. Adverse birth outcomes have life-long health, social, and economic repercussions so it is important to ensure equity in health from the beginning of life.

References

- 1 Goldenberg R, Culhane J. Low birth weight in the United States. *American Journal of Clinical Nutrition*. 2007;85(2):584S-590S.
- 2 Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. *Annals of Epidemiology*. 1994;4(4):271-8.
- 3 Zhu BP, Rolfs RT, Nangle BE, Horan JM. Effect of the interval between pregnancies on perinatal outcomes. *NEJM*. 1999; 340(8):589-94.

About the Data

Hospital discharge data, furnished by the Hawai'i Health Information Corporation, included information from all Hawai'i maternal and newborn medical records at delivery and newborn inpatient and emergency room visits through the first year of life. Cesarean delivery and LBW rates were calculated according to maternal insurance at delivery for the most recent three years (2004-2006). Infant mortality was determined by dividing recorded infant

QUEST/Medicaid associated with higher infant mortality rate and short birth interval

Exclusive Breastfeeding at 8 weeks

Overall, only 36.4% of women who initiated breastfeeding reported that they exclusively breastfed their infants for at least eight weeks. The remainder reported introduction of other things (e.g., formula, water, sugar, baby foods) prior to eight weeks.

Characteristics of Mothers who Never Breastfed and those who Initiated and Breastfed Less than 8 weeks

Women less likely to initiate breastfeeding were Hawaiian, Samoan, younger, less educated, unmarried, had Medicaid/ QUEST coverage of prenatal care, were obese prior to the pregnancy, lived in Hawai'i or Honolulu County, and participated in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Women more likely to initiate and breastfeed for less than 8 weeks were Black, Hawaiian, Samoan, Filipino, younger, less educated, unmarried, had Medicaid/QUEST coverage of prenatal care, were obese prior to the pregnancy, lived in Maui County, and participated in WIC during prenatal care.

Discussion

In Hawai'i, breastfeeding initiation has increased since 2000 and remains above the national Healthy People 2010 goal. However, there is variation among groups in breastfeeding initiation and duration. Further, only a small proportion of mothers breastfed exclusively for at least eight weeks. WIC participants have higher estimates of not initiating breastfeeding, and those who initiated did so for a shorter period of time. Women served by WIC also have higher associated risks so this finding reinforces the importance of promoting breastfeeding support in WIC.

Individual barriers to breastfeeding could be reduced by increasing mothers' access to lactation consultants, trained breastfeeding peer counselors, and support groups. Societal level barriers include the workplace environments where breastfeeding can be promoted with improving awareness on the importance of breastfeeding, flexible schedules, regular breaks to facilitate breast pump use and feeding, and specific lactation rooms.³ Examples of culturally sensitive ways promoting breastfeeding in Hawai'i include: providing nursing drapes to allow women to breastfeed in public while maintaining privacy by WIC,⁴ and the use of breastfeeding pamphlets in multiple languages at WIC and community health clinics.

Exclusive Breastfeeding at 8 weeks, Hawai'i PRAMS 2004-2006



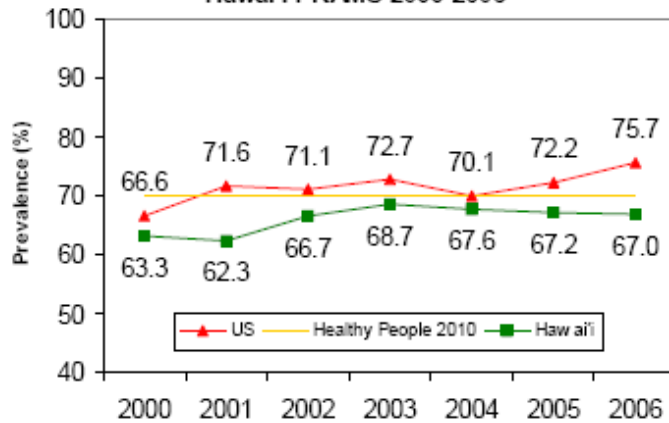
Early Breastfeeding Patterns by Maternal Characteristics, Hawai'i PRAMS 2004-2006

	Never Breastfed % (95% CI)*	Initiated and breastfed < 8 weeks % (95% CI)
Race/Ethnicity		
White	6.4 (5.1-8.1)	17.1 (14.9-19.5)
Black	9.4 (5.1-16.6)	29.3 (21.4-38.6)
Hispanic	5.4 (2.3-12.0)	17.7 (11.5-26.4)
Hawaiian	12.5 (10.7-14.5)	26.6 (24.1-29.1)
Samoan	19.4 (13.6-26.9)	27.0 (20.0-35.2)
Other Pacific Islander	12.6 (8.8-17.8)	14.7 (10.5-20.1)
Filipino	8.3 (6.8-10.1)	26.1 (23.6-28.8)
Japanese	4.9 (3.5-6.9)	11.2 (9.0-13.8)
Chinese	5.9 (4.4-7.7)	12.9 (10.7-15.4)
Korean	4.1 (2.5-6.6)	15.7 (12.2-19.9)
Other Asian	12.2 (6.6-21.4)	14.7 (8.3-24.7)
Maternal Age		
under 20 years	13.4 (11.5-15.6)	35.6 (32.8-38.6)
20-24 years	11.3 (10.1-12.5)	28.5 (26.8-30.2)
25-34 years	9.2 (8.5-10.1)	16.9 (15.9-18.0)
35 and greater	8.3 (7.1-9.6)	12.7 (11.2-14.2)
Maternal Education		
< High School	18.5 (16.2-21.1)	30.6 (27.7-33.6)
High School	14.0 (13.0-15.1)	25.4 (24.1-26.6)
Some College	7.5 (6.6-8.6)	20.3 (18.9-21.9)
College Graduate	2.7 (2.2-3.4)	10.5 (9.4-11.7)
Marital status		
Married	8.1 (7.5-8.8)	16.7 (15.9-17.6)
Unmarried	13.7 (12.6-14.8)	28.7 (27.3-30.2)
Prenatal Insurance Coverage		
Private Insurance	7.3 (6.7-7.9)	18.4 (17.6-19.3)
Medicaid/QUEST	15.9 (14.6-17.3)	26.8 (25.1-28.5)
None	8.4 (5.9-11.8)	20.0 (15.6-25.2)
Pre-pregnancy weight status		

Only 36.4% of all women who initiated breastfeeding, exclusively breastfed for at least 8 weeks

Some women (race/ethnicity, age, insurance, ...) were less likely to initiate breastfeeding and those that did initiated, breastfed for a shorter period

**Supine Sleep Position by Year,
Hawai'i PRAMS 2000-2006**



PRAMS Sleep Position Question

How do you *most often* lay your baby down to sleep?

- On his or her side
- On his or her back
- On his or her stomach

About 5% of mothers selected multiple responses. For this analysis, mothers who selected only back were considered to practice supine sleep position.

"My granddaughter suffocated and I am now involved in raising awareness of safe sleep practices. This information will prevent any family from experiencing the pain we suffered and still do."

-- Hawai'i Grandparent

About the Data

The Hawai'i *Pregnancy Risk Assessment Monitoring System (PRAMS)* is a self-reported survey of recent mothers conducted by mail with telephone follow-up. It is designed to monitor the health and experiences of women before, during, and just after pregnancy. Every year, about 2,000 women who deliver a live infant are randomly selected to participate.

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Suggested Citation

Schempf A, Hayes D, Fuddy L. "Infant Sleep Position Fact Sheet." Honolulu, HI: Hawai'i Department of Health, Family Health Services Division; October 2008.

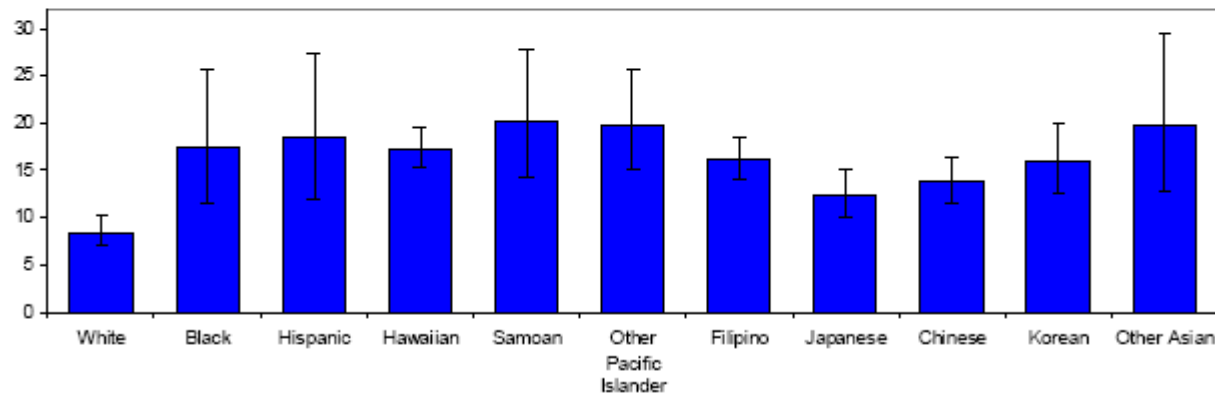
Hawai'i remains below national Healthy People 2010 goal for sleep positioning with 33.0% of women not placing their infants down on their back. The US overall rate has been above the goal for about 5 years.

Self-reported postpartum depression (SRPPD) was defined if a women reported a response of "always" or "often" to either one of these two questions. This identifies women at high risk of having postpartum depression and should receive further evaluation for postpartum depression by a health care provider. We evaluated SRPPD among common racial/ethnic and socio-demographic groups in Hawai'i using 3 years of PRAMS data, 2004-2006.

Race/Ethnicity Related to SRPPD

Approximately 15% of mothers in Hawai'i have SRPPD and all Asian and Pacific Islander groups have much higher estimates than the white population in Hawai'i. Blacks Hispanic, Hawaiian, Samoan, other Pacific Islanders, and other Asian women have high estimates.

Self-reported Postpartum Depression by Race/Ethnicity, Hawai'i PRAMS 2004-2006



About 15% of women report symptoms of self-reported symptoms suggestive of postpartum depression and should receive additional evaluation

All race/ethnic groups have higher estimates compared to white women in Hawai'i

Use of Compendium

- Advocate for resources
- Prepare for legislation
- Assist in policy development
- Identify groups at risk
- Identify new research hypotheses
- Comparison to other states and other sources of data (e.g., what are the relative numbers in your clinic?)

A lot of information

Data Highlights

No Feedback/Evaluation sheet in compendium.....

We need your feedback

Other topics

Further analysis.....

How are they being used...

Everyone registered for the conference will receive an email with a link to very brief survey after the conference.... PLEASE complete

Brief Summary

Infant Mortality continues to be a problem in Hawai'i, the US, and Globally

Emphasis on optimizing preconception care should further decrease preventable causes of deaths

Reviewed some potential data sources that address preconception and interconception care

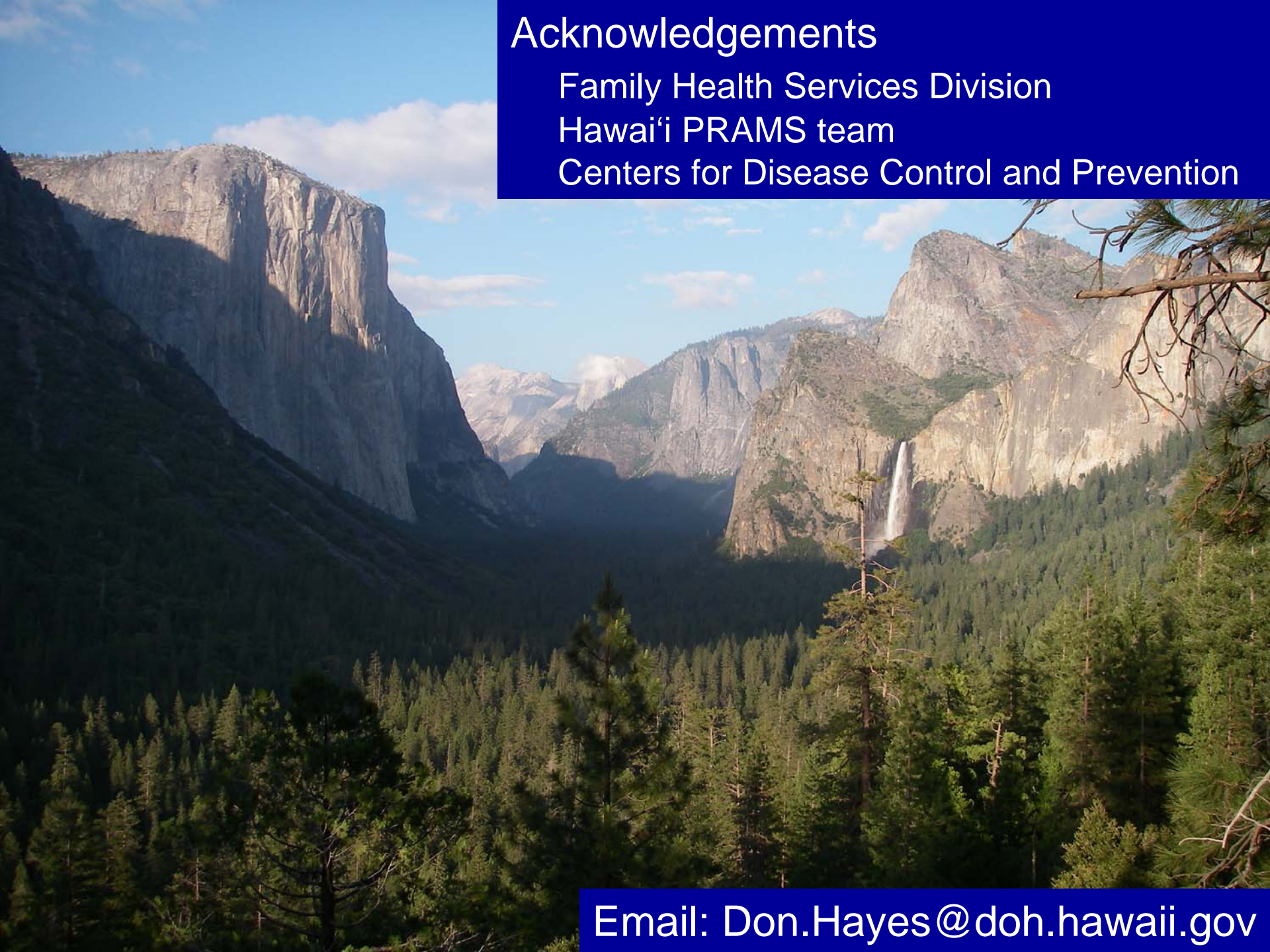
Highlighted some issues in the Fact Sheet Compendium and want it to be used

Acknowledgements

Family Health Services Division

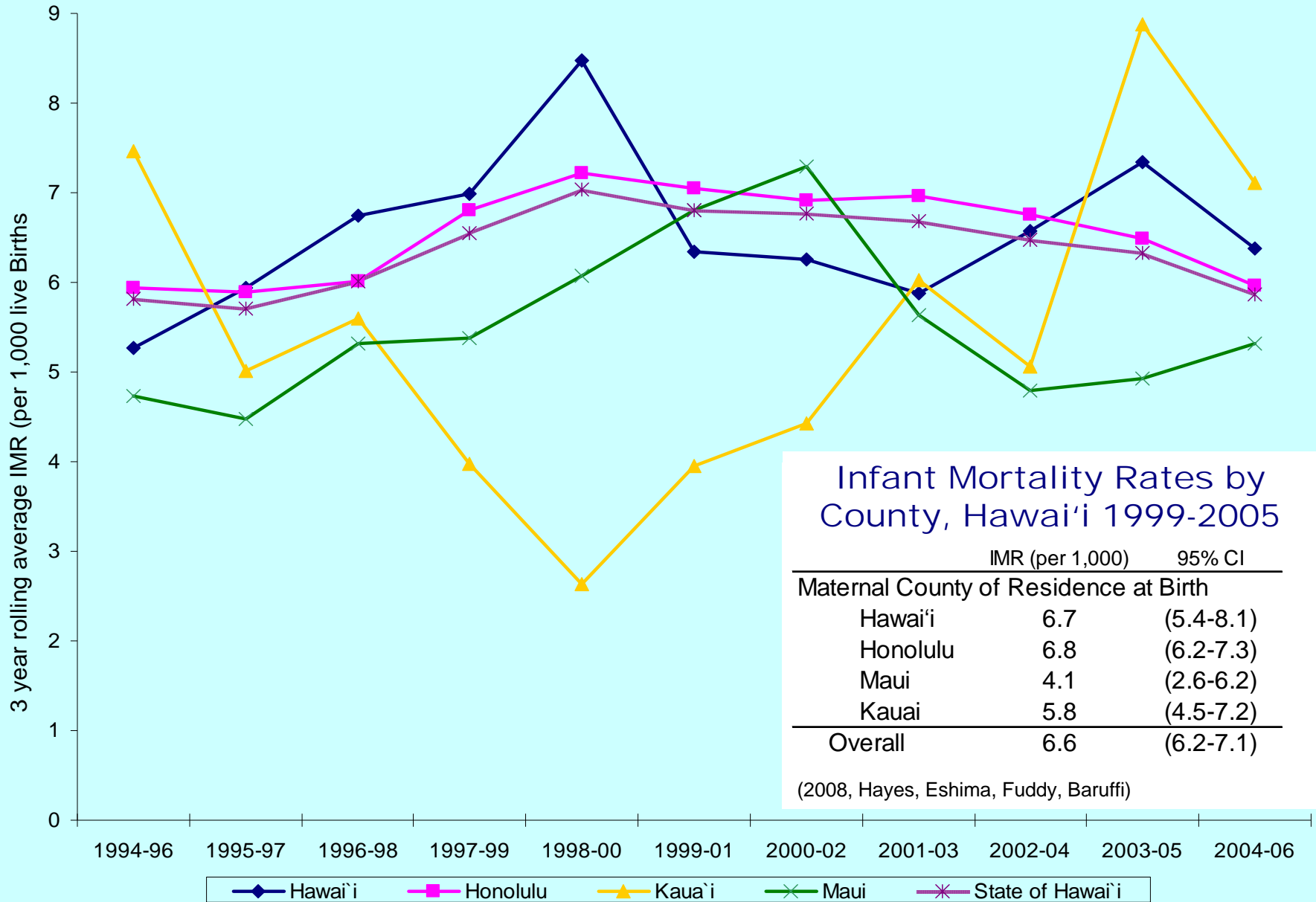
Hawai'i PRAMS team

Centers for Disease Control and Prevention



Email: Don.Hayes@doh.hawaii.gov

3 year Infant Mortality Rates by County and State of Hawaii, 1995-2005



Infant Mortality Rates by County, Hawai'i 1999-2005

	IMR (per 1,000)	95% CI
Maternal County of Residence at Birth		
Hawai'i	6.7	(5.4-8.1)
Honolulu	6.8	(6.2-7.3)
Maui	4.1	(2.6-6.2)
Kauai	5.8	(4.5-7.2)
Overall	6.6	(6.2-7.1)

(2008, Hayes, Eshima, Fuddy, Baruffi)