

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

SENATE COMMITTEES ON HEALTH AND HUMAN SERVICES

SB2929, RELATING TO DIABETES

Testimony of Gary L. Gill
Acting Director of Health

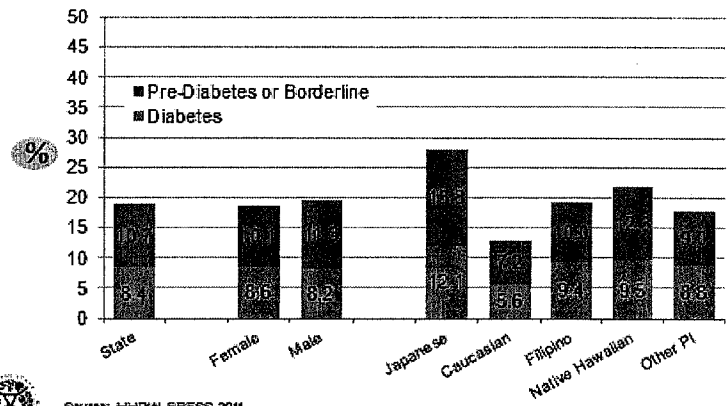
February 3, 2014
1:20 PM, Room 229

1 **Department's Position:** The Department of Health (DOH) respectfully opposes the bill, and provides
2 comments on the department's efforts to reduce the burden of diabetes in the state.

3 **Fiscal Implications:** The DOH has concerns that the data collection and reporting requirements
4 generated by this proposal are beyond current resource allocations.

5 **Purpose and Justification:** The bill requires the DOH, in collaboration with the DHS and DHRD, to
6 develop departmental plans to reduce the incidence of diabetes in the State, improve diabetes care, and
7 reduce the complications associated with diabetes. The DOH in collaboration with DHS and DHRD are
8 required to submit detailed reports to the Legislature biennially.

9 The DOH concurs that diabetes is a
10 significant health concern that is correlated to
11 the rise in obesity, unhealthy eating, and lack
12 of physical activity. In Hawaii 8.4% of
13 adults reported being diagnosed with
14 diabetes, and 10.7% with pre-diabetes



Source: HHDW, BRFSS 2011

1 (Behavioral Risk Factors Surveillance, 2011). From 2000 to 2010 there was a 60% increase in diabetes
2 prevalence. The DOH publishes diabetes and other data reports as an essential public health function.
3 More than ten years of public health surveillance reports are available on the Hawaii Health Data
4 Warehouse (<http://www.hhdw.org/>) and dashboard data with contextualized information is available on
5 Hawaii Health Matters (<http://www.hawaiihealthmatters.org/>). The Hawaii State Diabetes Plan, Burden
6 Report, and resources are available on the Department's website (<http://health.hawaii.gov/diabetes/>).

7 The DOH program does not collect identifiable data or cost data by participants and patients for
8 education, prevention, and treatment programs as requested in this measure. All data used for public
9 health surveillance purpose is de-identified and provided at population-based levels.

10 The DOH Chronic Disease Prevention and Health Promotion Division does not provide any
11 direct services but works on population-based strategies through policies, systems, and environmental
12 changes. The approach is to assure equitable prevention, management and treatment opportunities are
13 available for all people in Hawaii. Currently, the Diabetes Program in the division works with the City
14 and County Area Agencies on Aging, the Executive Office on Aging, public health agencies, healthcare
15 providers, and community health centers to improve the availability and accessibility of evidence-based
16 programs and to improve screening rates. The DOH at this time has one full-time position in the
17 Diabetes Program that is funded through a federal grant to focus on creating systems changes to increase
18 the availability and accessibility of chronic disease and diabetes self-management education through
19 strengthening community and clinical linkages. This position coordinates with epidemiologists and
20 evaluators in the division to produce assessment reports on diabetes rates, and to conduct studies on
21 services available in the state.

22 Thank you for this opportunity to testify.

DIABETES IN HAWAII 2013



DIABETES is a group of diseases characterized by high levels of blood glucose (i.e. blood sugar) due to defects in insulin production, insulin action, or both. The three most common types of diabetes are type 1, type 2, and gestational diabetes. Approximately 90-95% of all diagnosed cases of diabetes are type 2.¹

PREDIABETES AND DIABETES SCREENING

- The most common way to diagnose prediabetes and diabetes is by testing the blood for hemoglobin A1c or fasting blood glucose (FBG). Table 1 lists the diagnosis criteria.²
- In 2012, only 51.0% of Hawaii adults without diabetes reported having a test for high blood sugar or diabetes within the past three years.³
- Younger age groups (18-44 years), men, Filipinos (compared to White), and populations with low educational attainment or low household income had lower diabetes/prediabetes screening rates within the past three years.³

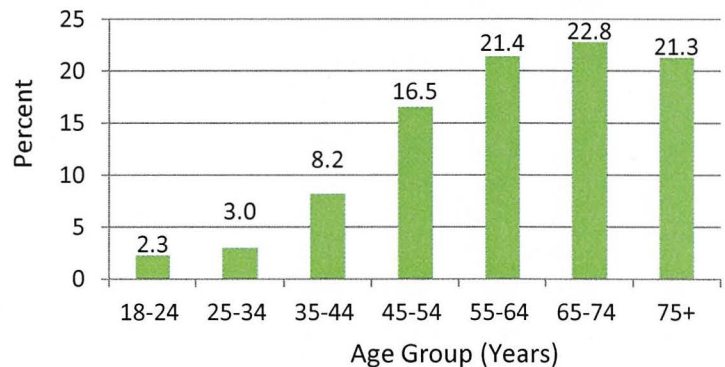
PREDIABETES PREVALENCE

- In Hawaii, 12.6% of Hawaii adults without diabetes (126,500) reported that they have prediabetes or borderline diabetes in 2012.³
- The CDC estimates that 35% of adults over 20 in the U.S. have prediabetes.¹ If we apply this prevalence to Hawaii's population, the number of Hawaii adults over 20 with prediabetes would be 369,700.⁴
- The prevalence of diagnosed prediabetes increases with increasing age (Figure 1) and is higher in Japanese, Filipinos, and Native Hawaiians compared to the White population (Figure 2).³

TABLE 1: PREDIABETES AND DIABETES DIAGNOSIS CRITERIA

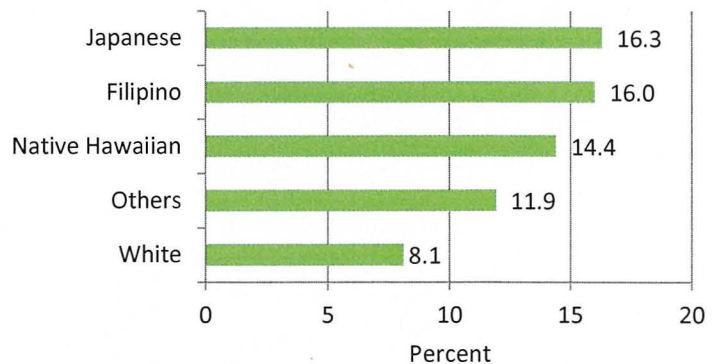
	A1c (%)	FPG (mg/dL)
Normal	< 5.7	< 100
Prediabetes	5.7 – 6.4	100-125
Diabetes	6.5+	126+

Figure 1: Prevalence of Diagnosed Prediabetes Among Adults Without Diabetes by Age Group, Hawaii 2012



Source: BRFSS

Figure 2: Prevalence of Diagnosed Prediabetes Among Adults Without Diabetes by Ethnicity, Hawaii 2012



Source: BRFSS

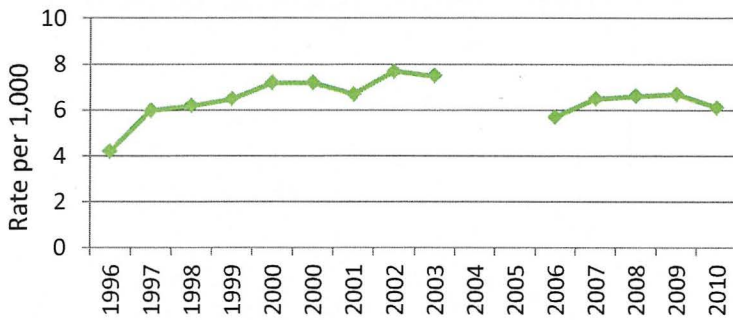
DIABETES INCIDENCE⁵

- Since 1996, the incidence rate of diagnosed diabetes has been increasing but stabilized between 2006 and 2010 (Figure 3).
- In 2010, the diabetes incidence rate was 6.1 per 1,000 adults or approximately 6,000 new cases of diagnosed diabetes among Hawaii adults aged 18-76.

DIABETES IN HAWAII 2013

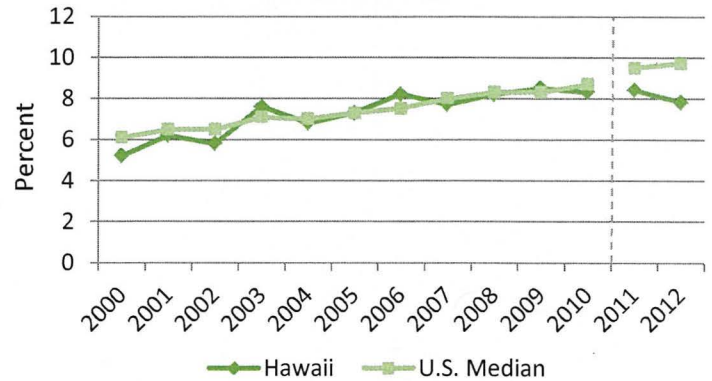


Figure 3: Rate of New Cases of Diagnosed Diabetes per 1,000 Adults (Aged 18-76), Hawaii 1996-2010



Source: CDC National Diabetes Surveillance System

Figure 4: Prevalence of Adult Diagnosed Diabetes, Hawaii and U.S. 2000-2012



Source: BRFSS

Note: Starting in 2011, the BRFSS adopted a dual sampling frame (landline plus cell phones) and iterative proportional fitting methodology. As a result of these methodological changes, 2011 BRFSS data is not directly comparable to data from previous years.

DIABETES PREVALENCE

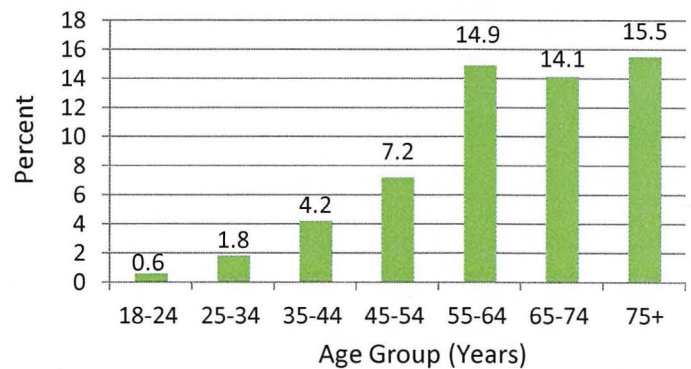
CHILDREN AND YOUTH

- Between 2006 and 2008, 0.3% of children under the age of 18 in Hawaii, or 800 children, had diabetes. Of these, 6% reported pre-diabetes, 34% reported type 1, 31% reported type 2, and the remainder were undetermined.⁶

ADULTS³

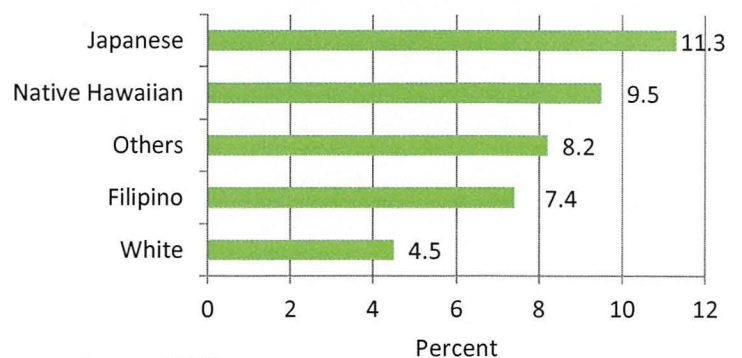
- Between 2000 and 2010, the prevalence of adult diabetes increased from 5.2% to 8.3% in Hawaii, a 60% increase (Figure 4).
- In 2012, 7.8% of adults (85,000) reported diagnosed diabetes in Hawaii.
- The prevalence of diabetes increases with increasing age; in 2012, 15.5% of Hawaii adults aged 75 and older reported diabetes (Figure 5).
- In 2012, the Japanese and Native Hawaiian population had a higher prevalence of diabetes than the White population (Figure 6).
- The prevalence of diabetes also varies by socioeconomic status. Hawaii residents with lower educational status and lower household income are disproportionately affected by diabetes (Figure 7).

Figure 5: Prevalence of Adult Diagnosed Diabetes by Age Group, Hawaii 2012



Source: BRFSS

Figure 6: Prevalence of Adult Diagnosed Diabetes by Ethnicity, Hawaii 2012

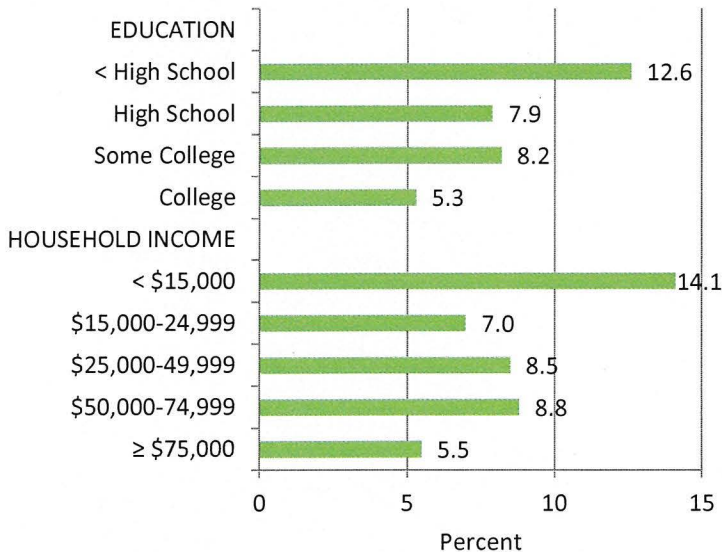


Source: BRFSS

DIABETES IN HAWAII 2013



Figure 7: Prevalence of Adult Diagnosed Diabetes by Socioeconomic Status, Hawaii 2012



Source: BRFSS

COMPLICATIONS

CARDIOVASCULAR DISEASE

Adults with diabetes are two to four times more likely to have heart disease or suffer a stroke than people without diabetes.¹ In Hawaii, 2,004 people were hospitalized with a primary diagnosis of heart disease and 1,041 people with a primary diagnosis of stroke and a contributing cause of diabetes in 2011.⁷ Cardiovascular disease is the leading cause of early death among people with diabetes, causing 65% of deaths among people with diabetes.⁸

KIDNEY DISEASE

Diabetes is the leading cause of kidney failure, accounting for 44% of all new cases nationally in 2008.¹ In Hawaii, almost 61% of patients receiving kidney dialysis for end-stage renal disease have a primary diagnosis of diabetes.⁹

COMPLICATIONS

EYE DISEASE AND BLINDNESS

Diabetes is the leading cause of new cases of blindness among adults aged 20-74.¹ Diabetic retinopathy accounts for approximately 12,000 to 14,000 new cases of blindness every year in the U.S.¹⁰ People with diabetes are also more likely to develop cataracts and glaucoma.¹¹

NERVOUS SYSTEM DISEASE AND AMPUTATION

About 60% to 70% of people with diabetes have some form of nervous system damage.¹ Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations.¹ In 2011, 452 non-traumatic lower-limb amputations were performed in people with diabetes in Hawaii.⁷

GESTATIONAL DIABETES AND PREGNANCY COMPLICATIONS

Diabetes that develops during a pregnancy is known as gestational diabetes. Approximately 11% of mothers giving birth in the state of Hawaii report gestational diabetes.¹² Mothers with diabetes during pregnancy are more likely to have a cesarean delivery, a preterm delivery, and have high blood pressure during pregnancy.¹² Women who have had gestational diabetes have a 35% to 60% chance of developing diabetes in the next 10 to 20 years.¹

PUBLIC HEALTH IMPLICATIONS

- Recent estimates project that as many as 1 in 3 American adults will have diabetes by 2050.¹³
- In Hawaii, diabetes resulted in \$1.1 billion in economic costs, including direct medical costs and loss of productivity.¹⁴

DIABETES IN HAWAII 2013

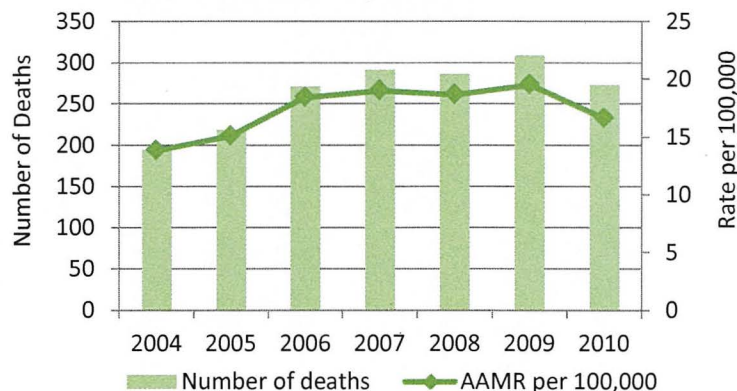


DIABETES MORTALITY¹⁵

- In 2010, diabetes was the seventh leading cause of death in Hawaii.
- In 2010, diabetes was the underlying cause of 272 deaths in Hawaii or 16.6 deaths per 100,000 Hawaii residents (Figure 8).
- Between 2004 and 2010, the age-adjusted mortality rate for diabetes as the underlying cause of death increased 20%.

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November 2013

Figure 8: Age-Adjusted Diabetes Mortality Rate and Number of Deaths, Hawaii 2004 - 2010



Source: CDC WONDER

Note: Rates age-adjusted to the 2000 U.S. Standard Population

Note: Diabetes defined as ICD-10 codes E10-E14

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