

**30 minutes**

Begin the lesson with this personal story about getting, learning about, and living with diabetes.

The purpose of relating this story is for the community leadership to gain insight and understanding of the impact of diabetes and to develop empathy.

Determine how you will present this story. One method of presenting this story is asking group members to take turns reading a paragraph of the story.

## YESTERDAY AND TODAY

By *Betty Kawohiokalani Ellis-Jenkins*  
*“Aunty Betty”*

Yesterday, I learned about diabetes. Yesterday, I was in the company of hundreds of people with diabetes. I witnessed a child self-administering her insulin. Yesterday, I listened to a war veteran who survived the Vietnam War but was blinded by his diabetes.

For the first time, I had a diabetes foot examination. Yesterday, I felt a fear of diabetes like I have never felt before. I had lunch with a pretty, little girl who was diagnosed with diabetes in high school... and she was thin. I thought people with diabetes were obese. Yesterday, I learned that I was not alone: many people had diabetes; all kinds of people had diabetes.

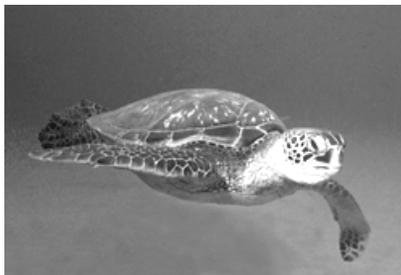
Yesterday, I overheard, “I’m really not diabetic. Thank goodness I’m borderline.” I saw a keynote speaker publicly inject himself with insulin before he addressed the masses and marveled at the high technology now available in all sizes, shapes, and color. That all happened yesterday. There have been other yesterdays but not like this yesterday. Yesterday, I thought back to when my dad was diagnosed with diabetes in the 60’s and my mother became an overnight “educated” caregiver where measuring, weighing, calculating, planning, and preparing became second nature.

All this had little or no real meaning to me until YESTERDAY. As a family, we had been touched by diabetes – a father, a brother, a cousin, and an aunt – yet I knew too little about its victimizing powers. Because of yesterday, I have a sense of fearful respect for the “silent killer.”

Although my “silent killer” disease was ignored, denied, and often placed on the back burner, the mysterious diabetes kept surfacing and yesterday it exploded like the volcano I knew as a child on my home island, Hawai‘i.

I know myself TODAY to be a Hawaiian woman with diabetes. Today, I know that there is no such thing as “borderline” diabetes. Today, I am aware of the dangers for my children and my precious *mo‘opuna* (grandchildren) and those yet to be born. Today, I look to those around me to support me as I support others to be more aware, sympathetic, and educated about diabetes. Today, I believe that my diabetes care must be part of my total wellness of mind, body, and spirit. Today, I know that as a *Kupuna* (Hawaiian elder), I must share cultural concepts of wellness through an ancestral value system.

Today, I know that I must initiate and maintain change and accept the challenges, to journey towards balance and harmony, to reconnect, to be *pono* (correct) with my diabetes. Today, I know that I must make this journey like the *honu* (turtles) that I collect – steady, patient, forward, and deliberate. “*Pu ha*” – only forward, never backward.



***\*Aunty Betty, a Pacific Diabetes Today Resource Center Advisory Council member, is a Hawaiian woman, elder (Kupuna), educator, and cultural consultant whose experience extends across the Pacific.***

When the reading of the story is complete, have an open discussion about what participants felt about the story.

Additionally or alternatively, you can ask participants if they would like to share a personal experience or a story of someone they know.

Another option would be to identify, ahead of time, someone who can relate a personal experience with diabetes and have that person tell his or her story.

# WHAT IS DIABETES?

Most of the food we eat is turned into **glucose** (sugar) for our bodies to use for energy. Our body makes **insulin** that helps glucose get into our body cells.

When you have **diabetes**, your body either cannot make enough insulin or cannot use its own insulin very well.

When glucose cannot get into the body cells, it builds up in the blood. Over time, high amounts of sugar in the blood can affect almost every part of your body and cause serious health problems.

## NOTES

120 minutes

Begin this section by asking the participants to write down any questions they have about diabetes on a sheet of paper. Collect these questions. As you go through this section, be sure that you cover each question.

A basic explanation of diabetes is provided for the participants in this section.

How you cover the information in this section is up to you; however, be sure that you cover at least the basic information provided in this section. Determine whether the information needs to be covered in greater detail.

Some sites invite a physician or certified diabetes educator as a guest presenter to cover this section.

For further information on diabetes education, refer to the materials in the Site Coordinator's Toolkit, consult with your local diabetes experts, or contact PDTRC.

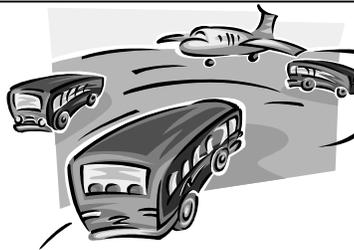
**Glucose:**

Glucose is like the hundreds of tourists that arrive at the airport everyday.



**Insulin:**

The insulin is like a bus that helps tourists (glucose) to get into the hotels (body cells).



**Body Cells:**

The body cells can be seen as the hotels that the tourists (glucose) are trying to get into.



If there are no buses (insulin) or the buses are not working then the tourists (glucose) cannot get to the hotels (body cells).

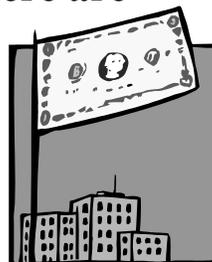
**DIABETES**

**Poor Health:**  
If the tourists cannot get to the hotels, the business is bad; that can be seen as poor health.



If there are buses (insulin) and they are working well, then the tourists (glucose) can get to the hotels (body cells).

**Good Health:**  
Good health can be seen as good business for the hotels because there are many tourists.



The diagram on the left provides one simple, illustrated way to explain diabetes and its relationship to food, insulin, and health.

Present the diagram in your own words and modify as you see fit.

You may also explain some of the reasons that the buses (insulin) are not working properly. Just as a bus needs proper fuel and cannot be idle for long periods to function, the human body needs proper fuel (healthy foods) and needs to get physical activity to function.

You can use your own example, illustrations, demonstration, role-play, etc. that will be more relevant for use in your community.

# SYMPTOMS OF DIABETES

Below are the signs and symptoms of diabetes. People don't have to show all these symptoms to have diabetes.

- ➔ Being very thirsty.
- ➔ Urinating a lot – often at night.
- ➔ Having blurry vision from time to time.
- ➔ Feeling very weak or tired much of the time.
- ➔ Losing weight without trying.
- ➔ Having sores that are slow to heal.
- ➔ Getting more infections than usual.
- ➔ Recurrent boils.
- ➔ Losing feeling or getting a tingling feeling in the feet.
- ➔ Having very dry skin.

***People can have diabetes with  
no symptoms.***

Discuss the issue of denial in people with diabetes.

Be prepared to answer questions such as, “How do I know if I have diabetes?”

Have ready the diagnostic criteria or clinical practice recommendations for diabetes.

# TYPES OF DIABETES

## Type 2

Most people with diabetes – about 95% – have Type 2 diabetes. Most people with Type 2 diabetes have insulin in their body, but the body can't use it very well. Most people with Type 2 diabetes find out about their diabetes after age 30 or 40, but Type 2 diabetes is increasing in our youth and young adults. This early onset of Type 2 diabetes is often mistaken for Type 1 diabetes in the Pacific.

## Type 1

About 5% of people with diabetes have Type 1 diabetes. These people usually find out they have diabetes when they are children or young adults. People with Type 1 diabetes must inject insulin every day to live because the body makes little or no insulin.

## Gestational Diabetes

This type of diabetes appears in some women when they are pregnant. This type of diabetes is temporary (during pregnancy) but it does increase a women's chance of getting Type 2 diabetes later in life.

It is not necessary to cover Type 1 and Gestational diabetes in detail; however, you should have ready statistics and more information regarding the different types of diabetes. Supplementary information can be handed out or placed in [APPENDIX C](#).

Type 1 diabetes rarely occurs in the Pacific (except Hawai'i). Because Type 2 diabetes in children and young adults is common in the Pacific, it is often mistaken for Type 1 diabetes.

# RISK FACTORS FOR DIABETES

## What increases your chances of getting diabetes?

- ➔ Your close relatives (parents, brothers, or sisters) have diabetes.
- ➔ You are a Pacific Islander, Hawaiian, Asian-American, Native-American, Hispanic-American, or African-American.
- ➔ You are heavy (obese/overweight).
- ➔ You don't do enough physical activity or exercise.
- ➔ You previously had high blood sugar (impaired fasting glucose) or your body could not handle sugar well (impaired glucose tolerance).
- ➔ You have high blood pressure.
- ➔ You have abnormal cholesterol levels.
- ➔ You had diabetes when you were pregnant or you had a heavy (more than 9 pounds) baby.

## NOTES

These risk factors have been adapted from the *Standards of Medical Care for Patients with Diabetes Mellitus – American Diabetes Association*. This article can be found in *Diabetes Care*, Volume 24, Supplement 1, January 2001. Contact PDTRC if you need a copy.

**People that are over the age of 25 and have risk factors should be tested for diabetes.**

↔  $\geq 20\%$  over desired body weight or BMI  $\geq 27$  kg/m<sup>2</sup>

↔ Previously identified as IFG (impaired fasting glucose) or IGT (impaired glucose tolerance)

↔  $\geq 140/90$  mmHg in adults

↔ HDL cholesterol  $\leq 35$ mg/dl and/or triglyceride level  $\geq 250$  mg/dl

# COMPLICATIONS (HEALTH PROBLEMS) OF DIABETES

## *What health problems does diabetes cause?*

When our blood sugars are constantly high, body changes happen, which may result in complications. People with diabetes increase their risk for:

- ➔ Stroke (brain attack)
- ➔ Heart attack
- ➔ Kidney disease
- ➔ Blindness
- ➔ Amputations
- ➔ Nerve damage
- ➔ Teeth and gum disease
- ➔ Complications with pregnancy

You may want to supplement this part with a short video on the complications of diabetes.

Explain each complication as needed.

Be prepared to address men's and women's problems such as impotency and vaginitis in a culturally appropriate manner. If such discussions are inappropriate, consider handing out reading materials (pamphlets) on the subjects.

# DIABETES CONTROL

## *What can you do to prevent diabetes complications?*

Good diabetes management can help you keep in control of your health. Self-management should include a flexible plan based on:

- ➔ Diabetes education
- ➔ Healthy eating
- ➔ Physical activity (exercise)
- ➔ Diabetes foot care
- ➔ Eye exams
- ➔ Smoking (tobacco) cessation
- ➔ Weight issues
- ➔ Medication therapy
- ➔ Teeth and gum care
- ➔ Self-monitoring of blood sugar
- ➔ Stress management skills

***There is no cure for diabetes, but people with diabetes can live a long and healthy life if they control their diabetes.***

You may want to use hands-on demonstrations of some diabetes management topics. For example, you can present a hands-on foot inspection using a monofilament.

Discuss the availability of services, supplies, choices of care, etc. in the community.

# GLUCOSE CONTROL

## *What can you do to control your glucose (sugar) levels?*

One of the most important aspects of diabetes control and preventing complications is controlling your glucose (sugar) levels. Below are some ways to control your glucose levels:

- ➔ Healthy eating
- ➔ Physical activity (exercise)
- ➔ Medication therapy
- ➔ Self-monitoring of blood sugar

Remember that controlling your glucose levels is one aspect of controlling your diabetes and preventing diabetes complications. You must consider the other aspects (previous page) for total wellness.

Be prepared to discuss targets and goals for glucose control.

**90 minutes**

Begin this section by asking each participant to say how many people they know with diabetes.

Emphasize the fact that everyone is affected by diabetes, directly or indirectly.

# THE BURDEN OF DIABETES

This part of the Guidebook is divided into 4 sections:

- Diabetes in the Pacific
- Diabetes in the World
- Diabetes in the United States
- Community Assessment Findings From 11 Pacific Communities

Diabetes facts and figures for the world and the continental U.S. are provided to emphasize the serious global impact of diabetes. Examining world and U.S. numbers also help to put Pacific numbers in perspective.

The community assessment findings are provided to share Pacific people's concerns, barriers, and issues regarding diabetes. These findings represent the voices of persons with diabetes and the voices of their family members who support them.

Diabetes has become an epidemic worldwide, but especially in the Pacific. Before we talk about the seriousness of the problem and the number of people affected by diabetes, let's ask ourselves several questions:

1. Why is diabetes such a big problem now, when only two or three generations ago it was not even reported as a health issue on most Pacific islands?
2. What has caused this dramatic increase?

Let us compare the lives of two typical Pacific islanders, adult men, one who lived in the 1800's and one who lives in today's modern society. To help with this analysis, two diary entries have been created. These entries are fictional, but portray what are reasonably typical days in the lives of these two individuals.

⇐ Discuss these questions in further detail.

Refer participants to the diary entries in the following pages.

Determine how to make the most of this exercise. One option is to ask participants to break up into small groups and find everything in the diary that is related to diabetes risk factors.

*Diary Entry – Thursday Morning,*

*13 May 1875*

*For breakfast this morning, the charred fish left over from yesterday's meal tasted great with the preserved breadfruit that our neighbor, Naiomy, shared with us. She dug it up last week, two big bundles that I think had been buried for almost four years. Naiomy is so kind, always sharing the delicious food she makes. She must have appreciated the fish I gave her yesterday. Anyway, it was a good morning meal.*

*My wife, Rosa, knows how to cook our foods just right; even the leftovers are good. She made our evening meal of fish and pounded bananas yesterday, even though she must have been exhausted after planting over 50 swamp taro roots. Tonight we'll have some of the ripe taro that she harvested. I've got to make sure the younger boy gets enough firewood for her today. He's a good worker but likes to play with the new puppies so much that sometimes he forgets his work.*

*What a productive fishing trip yesterday! The two boys and I were in the right place at the right time, walking along the reef with our net near the narrow channel just in time to see that big school coming down from the north. We got the net in place and soon had a nice catch, more than twenty-five good sized fish. All of our neighbors enjoyed fresh fish for last night's supper.*

*The Chief is very kind, giving us that kava root in trade for the fish we took to him. It has been a long time since we pounded kava at our house, and there hasn't been a feast since the last full moon. It was strong kava, plenty for Rosa and me. We had plenty of time to pound it and relax before*



*dark, since the sun was still high in the sky when the boys and I got back from fishing. The kava gave me a good sound sleep last night.*

*What am I going to do today? It has been raining since dawn, hard at times, so it doesn't look like I'll be able to plant yams today; the ground will be too wet and muddy. No problem. There will always be another day without rain sometime soon. I had good success with my yams last year, some of the biggest in the whole village. No sense in rushing the planting and not getting the job done the right way.*

*I need to decide what else to do today. If it stops raining this morning, maybe I'll pick the ripe breadfruit from the tree down near the stream. Better check to make sure the tree is dry, I don't want to slip, like what happened to Joe the other day. He hadn't climbed very high, but when he fell, his arm slammed against a big jagged rock. The bones in his elbow are all smashed and he is still in a great deal of pain and his arm just hangs, he cannot move it. It's a shame, he will never be a good spear fisherman again. We will all miss eating the turtles he used to catch.*

*Well, I think that I'll plant some bananas this morning, and clean out the weeds by the kava plants on the hillside. After lunch, I'll collect some more rocks for the seawall project and carry them down to the shore. The repair of the wall by the chief's house has to be done before the next high tide. Then we'll see about the breadfruit.*



## Diary Entry - Thursday Evening, 11 May 2000

Not enough time for a good breakfast this morning, I boiled some water for a cup of coffee for me and some ramen for the kids. It seems like every time it rains in the morning we all wake up late and have to rush to school and the office. I didn't even have time for my first cigarette until I got in the car. Even the car seemed sleepy, it was hard to start. I need to add a carport to the house, it will protect the car and we won't have to get wet when it is raining.

The kava last night was watered down too much. We must have drunk six bottles between the four of us and then I had two beers for a chaser. We'll have to try a different market tonight, maybe the new place by the river, the one that they were talking about last night. Usually on opening night, the kava is served strong to make a good impression on potential future customers. I wonder if my niece will be able to baby-sit again.

Sitting at my desk this morning at work, I couldn't decide which project to tackle first. I had finished the first draft of the monthly report yesterday, but getting



all of the account files up-to-date was just as important as getting the final draft completed. They are both overdue. Then there are those two letters to the off-island vendors that should have gone out today.

Well, first things first, I got myself a cup of coffee and sent the clerk to get a bag of donuts. Then I settled down, had a smoke, and thought about what to do first. I told the clerk to pickup a pack of cigarettes, too. I finished off almost a whole pack at the market last night.

The day really dragged on slowly today, too many interruptions. Sometimes I'd like to take that phone and throw it out the window; it always rings just when I'm trying to concentrate on something important! That call from the regional sales representative just at noontime really bugged me. He always calls at 11:55 just to make me late for lunch. By the time I got to the restaurant, the buffet table was half empty. I only had three servings of my favorite, the fried rice and sausages, and no dessert. They totally ran out of ice cream!



At least the afternoon wasn't a total waste. The boss stopped by my desk and told me that we would all probably be getting a lot of overtime next week to prepare the annual report presentation to the Board of Directors meeting next month. Last year's meeting was a great success, but we put in a lot of late hours getting prepared.

When I got home I thought that I would write this entry right away but I got sidetracked by a really interesting TV show that the kids were watching. At least I thought that it was interesting until I dozed off. The smells from the kitchen brought me back to consciousness just in time for supper.

Now I am full and want to get today's news written down before we head for the opening of the new kava bar. Seems like this chair is making louder squeaks than it did before, I must be gaining more weight. People say that a big body is a sign of contentment and success, but I have to admit it seems like I'm getting tired carrying all this weight around. Maybe I'll drive to the track after work tomorrow and walk a lap. Who am I kidding? I've been promising myself to get some exercise for weeks. Actually, I think I'm still in pretty good shape.

What can we say about these two lives? Although we understand how diabetes affects the human body, the exact reasons why an individual develops the disease remains somewhat of a mystery. The risk factors, however, are well known, and they include lack of physical activity and obesity. Many health professionals believe that stress and substance abuse are also contributors.

Read between the lines of these diaries and try to visualize the lives of these two men. Who is eating a variety of healthy foods in moderate amounts? Who spends the better part of his day in a sitting position? Who is more fully in control of his own well-being and not subject to interruption? Who has the opportunity and disposable resources with which to partake of unhealthy substances? Who is most like you?

Hold an open discussion about the two journal entries. Ask how things have changed over the years. What are some positive changes? What are some negative changes?

Ask each participant to express who they most identify with and why.

Remember that the purpose of this exercise is not to criticize a certain time period or lifestyle, but to emphasize changes in lifestyle and how this may affect our health.

# DIABETES IN THE PACIFIC

The following pages describe the burden of diabetes in these Pacific jurisdictions:

- American Samoa: (page 26)
- Commonwealth of the Northern Mariana Islands (CNMI): (page 27)
- Federated States of Micronesia: (page 28)
- Guam: (page 29)
- Hawai‘i: (page 30)
- Republic of the Marshall Islands: (page 31)
- Republic of Palau: (page 32)

*\*The information presented here are the best estimates available and are not obtained through careful scientific studies. There is a general lack of information regarding the extent of the burden of diabetes in the Pacific. The lack of comprehensive data reflects the Pacific Jurisdictions' lack of resources and systems to effectively gather and describe information as it relates to the scope and burden of diabetes and other non-communicable diseases.*

It is not necessary to cover each jurisdiction during the training. Cover your jurisdiction (you may want to overview one or two other jurisdictions as a comparison) and supplement it with information/data that you have assembled. This supplement can be handed out or placed in **APPENDIX C**.

⇐ You may want to add that, given the limited resources for diabetes, the priorities of the Pacific Jurisdictions are focused on diabetes prevention and treatment rather than data collection and dissemination.

# American Samoa



## Prevalence & Incidence:

- Diabetes is found in 40% of adults over the age of 50.
- The incidence of diabetes (1990-1994):

	<u>Age</u>	=	<u># of new case</u>
• Males	29-44	=	5
	45-63	=	10
• Females	29-44	=	9
	45-63	=	7

## Mortality:

- Diabetes is one of the top ten causes of death in American Samoa.

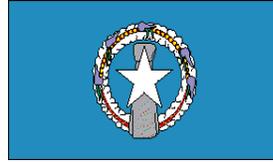
## Complications:

- Of 65 renal (kidney) dialysis patients, 85% have diabetes.
- There are approximately 40 diabetes related foot amputations per year.

### Data Source:

American Samoa Diabetes Control Program.

# Commonwealth of the Northern Mariana Islands (CNMI)



## Prevalence & Incidence:

- 2272 people in CNMI have been diagnosed with diabetes.
- 1150 of those are Chamorro.
- 252 of those are Carolinian.

## Mortality:

- Rate of mortality for Chamorros with diabetes:
  - Ages 55-64 = 1298 per 100,000
  - Ages 65-74 = 2136 per 100,000
  - Ages 75+ = 2527 per 100,000
- Rate of mortality for Carolinians with diabetes:
  - Ages 55-64 = 1786 per 100,000
  - Ages 65-74 = 3926 per 100,000
  - Ages 75+ = 8235 per 100,000

## Complications:

- Rate of blindness = 2.2/1000.
- Rate of end-stage renal disease on dialysis = 8.5/1000.
- Rate of non-traumatic amputations for people with diabetes = 12.8/1000

### Data Source:

CNMI State-based Diabetes Control Program.

# Federated States of Micronesia (FSM)



## Prevalence & Incidence:

➤ Percent of population with diabetes:

<u>Age</u>	<u>Kosrae*</u>	<u>Chuuk*</u>	<u>Pohnpei*</u>
35-44	7%	9%	14%
45-54	21%	22%	19%
55-64	33%	18%	21%
65-74	9%	9%	21%

## Mortality:

- Total number of deaths from diabetes (1990-1997) = 135.
- Rate of mortality from diabetes (1990-1997) = 31.58 per 100,000.
- From 1990-1997, diabetes was the third leading cause of death for FSM as a whole, the second leading cause of death in Chuuk, and the leading cause of death in Kosrae.
- Average years of potential life lost per death due to diabetes before age 65 = 10.2 years.

## Risk Factors:

➤ Percent of the population overweight:

<u>Age</u>	<u>Kosrae*</u>	<u>Chuuk*</u>	<u>Pohnpei*</u>
35-44	78%	80%	84%
45-54	84%	79%	84%
55-64	79%	68%	71%
65-74	59%	53%	67%

\*Island States in FSM. (Data for Yap was not available)

### Data Sources:

Federated States of Micronesia Government, Department of Health Services.

Diabetes Control Program, Federated States of Micronesia National Government, December 2000.

Federated States of Micronesia Government, Department of Health Services.

# Guam



## Prevalence & Incidence:

- The prevalence of diabetes in 1999 was 8.7%, an increase of 61% from 1996.
- Over 8000 people have diabetes in Guam.
- Between 1995 and 1999, the percentage of Chamorros diagnosed with diabetes increased from 7% to 14%.

## Mortality:

- Diabetes is the fourth leading cause of death in Guam.
- In 1998, diabetes accounted for 5.4% (35/651) of all deaths.
- Diabetes mortality rate in 1998 = 23.5 per 100,000.

## Complications:

- Diabetes is the most common cause of nerve damage, amputations, blindness, and end-stage renal (kidney) disease.
- In 1999, almost 25% of young adults (age 18-24) were obese; and over 30% of adults over the age of 24 were obese.

### Data Source:

Department of Public Health and Social Services – Office of Planning and Evaluation, 1999.

# Hawai'i



## Prevalence and Incidence:

- 52,997 people in Hawai'i had diagnosed diabetes in 1997.
- In 1997, almost 300,000 persons in Hawai'i were at risk for undiagnosed diabetes because of the risk factors of age, obesity, and sedentary lifestyle.
- The prevalence of diabetes in Hawai'i rose from 5.2% in 1990 to 6.4% in 1998 – an increase of 23.6%.

## Mortality:

- In 1997, there were 901 diabetes-related deaths in Hawai'i. (735 of those deaths were Hawaiian, Pacific Islander, or Asian)
- Diabetes related death rate for Hawai'i (total population) is 15 per 100,000.
- The burden is disproportionately higher for Native Hawaiians: the diabetes related death rate for Native Hawaiians is 35 per 100,000.

## Complications:

- In 1997, there were 73 new cases of blindness, 353 lower extremity amputations, 232 new cases of end-stage renal (kidney) disease and 13,868 diabetes-related hospitalizations.
- In 1997, the direct (medical care) and indirect (loss of productivity and premature death) cost of diabetes in Hawaii was about \$594 million.

### Data Sources:

Hawai'i State Department of Health, *The Burden of Diabetes in Hawai'i*.

Centers for Disease Control and Prevention. Diabetes in the United States. Atlanta: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, 2000.

Office of Health Status Monitoring, Hawai'i Department of Health, HHS 1998, 12 Nov 1999, Web Page.

# Republic of the Marshall Islands



## Prevalence & Incidence:

- 30% of the population over 15 years of age have diabetes.
- Over half of the population over 50 years of age has diabetes.

## Mortality:

- Diabetes is one of the leading causes of death and illness among adults, resulting in such complications as eye disease, foot infections, and amputations.
- Between 1994 and 1997, the leading cause of death was diabetes. Nearly one out of five Marshallese died of diabetes-related conditions.

## Complications:

- The number of cases of eye disease, kidney disease, and cardiovascular disease is increasing.
- Surgery in RMI mainly consists of diabetic foot amputations.

### Data Sources:

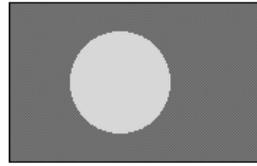
Feasley, J. & Lawrence, R. Pacific Partnerships for Health: Charting a Course for the 21<sup>st</sup> Century. National Academy Press, Washington D.C., 1998.

RMI, Office of Planning and Statistics.

Pacific Islands Report. Commentary: Becoming a Professional Victim: Marshall Islands. *By Francis X. Hezel Director of Pohnpei's Micronesian Seminar The Marshall Islands Journal*

RMI, Office of Planning and Statistics.

# Republic of Palau



## Prevalence and Incidence:

- In 1998, thirty people were newly diagnosed with diabetes.
- Total number of people in the diabetes registry in 1999 = 650.

## Mortality:

- In 1999, diabetes was the tenth leading cause of death.

## Complications:

Of the persons with diabetes in Palau:

- 30% have hypertension.
- 15% have eye disease. (90 diabetes patients with visual complications)
- 13% have nerve disease.
- 11% have renal (kidney) disease. (11 diabetes patients currently in hemodialysis)
- 5% have heart disease.
- 1% have amputations. (8 lower-limb amputations in 1997)
- 1% have had strokes.

### Data Sources:

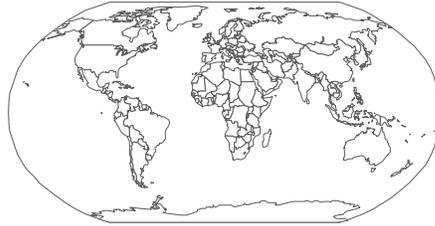
Palau Resource Institute.

Health Status and Services Profile, Republic of Palau, 1999.

Health Status and Services Profile, Republic of Palau, 1999.

Victor Yano, MD.

# DIABETES IN THE WORLD



The facts and figures for diabetes globally are staggering and dismal. The diabetes estimates for the world in 1994 are presented in the table found on the following page. According to the World Health Organization (WHO), more than 150 million people worldwide currently have diabetes, and this number is expected to increase dramatically. Projections show that 220 million people will have diabetes by the year 2010, and 300 million people will have diabetes by the year 2025. The global prevalence of diabetes is expected to increase in the next 12 years—from 2.1% to 3%. Factors likely to contribute to the increasing number of diabetes patients include longer life expectancy, an increase in the percentage of elderly people worldwide, and adopting more “Western” lifestyle behaviors. This includes decreased physical activity (exercise) and poor (unhealthy) food choices.

**Data Source:**

World Health Organization  
(WHO), 1998.

## WORLD HEALTH ORGANIZATION (WHO) DIABETES ESTIMATES 1995-2025

NUMBER OF DIABETES CASES BY YEAR AND LOCATION	1995	2000	2025
<b>WORLD</b>	<b>135,286,000</b>	<b>154,392,000</b>	<b>299,974,000</b>
<b>UNITED STATES</b>	<b>13,853,000</b>	<b>15,009,000</b>	<b>21,892,000</b>
<b>WESTERN PACIFIC</b>	<b>26,391,000</b>	<b>30,343,000</b>	<b>55,911,000</b>
➤ Australia	330,000	367,000	610,000
➤ Cook Islands	700	800	1400
➤ Fiji	43,000	52,000	119,000
➤ Kiribati	2,400	2,700	4,500
➤ <b>Marshall Islands</b>	1,200	1,400	2,300
➤ <b>Micronesia</b>	3,300	3,800	6,300
➤ Nauru	600	700	1100
➤ New Zealand	63,000	68,000	103,000
➤ Niue	100	100	200
➤ <b>Palau</b>	600	600	1,100
➤ Papua New Guinea	154,000	181,000	453,000
➤ Samoa	3,300	3,700	19,000
➤ Solomon Islands	12,000	15,000	45,000
➤ Tonga	3,400	3,900	6,500
➤ Tuvalu	200	300	500
➤ Vanuatu	5,300	7,000	19,000

# DIABETES IN THE UNITED STATES



## Prevalence & Incidence:

- In the United States, an estimated 15.7 million persons have diabetes.
- The prevalence of diabetes rose from 4.9% in 1990 to 6.5% in 1998 – an increase of 33%.
- Diabetes prevalence increased by 70% among people in their 30s.

## Mortality:

- Diabetes is a major cause of death and illness in the United States: it is the seventh leading cause of death.
- Diabetes kills more than 193,000 people per year.

## Complications:

- The annual health care costs associated with diabetes are an estimated \$98 billion.
- Diabetes is the leading cause of blindness (ages 20-74), end stage kidney disease, and non-traumatic lower limb amputations: 12,000 – 24,000 people become blind; 86,000 people have a leg or foot amputated; and 33,000 people undergo dialysis or transplantation for kidney failure because of diabetes each year.

### Data Source:

Diabetes: *A Serious Public Health Problem, At-A-Glance 2000*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

# COMMUNITY ASSESSMENT FINDINGS

## Communities Share Their Concerns About Diabetes

Findings from 11 community discussions, conducted in 1999 by PDTRC are shared in this section. The information is not separated by jurisdictions. For specific responses from each jurisdiction, see APPENDIX B.

Discussion groups were held in:

- American Samoa.
- Commonwealth of the Northern Mariana Islands.
- Guam.
- Republic of the Marshall Islands.
- Republic of Palau.
- Pohnpei State, Federated States of Micronesia.
- Hawai'i (5 islands).

A Community Assessment Guide was developed to conduct these discussions. The Guide was used to train local facilitators in each of the jurisdictions. Copies of the Community Assessment Guide are available upon request from PDTRC.

## NOTES

**30 minutes**

Discuss the community assessment findings from the Pacific.

Refer participants to the findings specific to their jurisdiction in APPENDIX B.

Discuss whether they agree with the findings. Ask participants to contribute their thoughts about diabetes concerns. This should provide an opportunity for you to transition into Module 1: Community Assessment.

**QUESTION: *What are the major problems in your community?***

**Responses:**

- Economic issues (high cost of living, high cost of healthy foods, lack of jobs, homelessness, over-crowding, no access to land)
- Environmental issues (drought, pollution)
- Educational issues (not enough schools, no help for special education kids, illiteracy)
- Access to good health care (lack of access to clinics, health providers, insurance, medications; lack of knowledge and communication)
- Other infrastructure issues (lack of transportation, lack of food choices, poor food distribution, poor public safety, nothing to do)
- Teen issues (teen drop-outs, pregnancy, substance abuse, stealing, nothing to do, speeding cars)
- Lifestyle issues (substance abuse, poor diet, lack of exercise, high stress, lack of health knowledge, fear/trust of MD)
- Health issues (prevalence of infectious and chronic diseases, e.g., diabetes, cancer, heart disease, TB)
- Social issues (single parenting, domestic violence, people not being *pono* (*righteous/good/cooperative*))
- Cultural and religious issues (“burdens” associated with church activities, cultural traditions, etc.)

**Question: How big a problem is diabetes in your community?**

**Responses:**

- High prevalence (It affects many people at younger and younger ages.)
- Health impact (Diabetes causes many health problems, sexual dysfunction, emotional problems, and death. Communities lack health resources.)
- Social impact (Most people with diabetes are sick and less productive than non-diabetics. Diabetes causes stress in families.)
- Economic impact (Diabetes is costly to manage, impacting family and community budgets.)
- Awareness issues (Diabetes is hidden, people don't know if they have it, people have misconceptions about diabetes and some are fatalistic, doctors lack info on diabetes.)
- Cultural issues (Diabetes is related to food. Eating practices or behaviors have cultural significance so it is hard to change.)

**QUESTION: What do you know about what people can do to control their diabetes?**

**Responses:**

- Eat healthy foods.
- Exercise.
- Follow MD's advice about lifestyle, medications, and self-monitoring.
- Control stress.
- Get support from family and friends.
- Learn as much as you can about diabetes.
- Very few participants mentioned the importance of not smoking.

**QUESTION: What is hard/easy about eating good food?**

**Responses:**

- Economic (Healthy foods cost more, no land for gardens.)
- Knowledge (What's healthy, how do you prepare healthy foods, what's too much?)
- Will power and habit (I love to eat, ono [delicious] the fat.)
- Culture (Fiesta foods are high-fat, rice is a staple.)

**QUESTION: What is hard/easy about exercising?**

**Responses:**

- Exercise is hard to do if you have to do it alone. Exercise is hard to do if health conditions limit the ability to exercise.
- Exercise is easy to do because of the availability of free activities and classes. Exercise is easy to do if there is a steady exercise partner and a daily routine.

**QUESTION: What is hard/easy about following MD advice, getting check-ups, and taking prescribed medicines?**

**Responses:**

- Having a good relationship with a provider or clinic and having insurance help overcome these barriers:
  - Concerns about cost
  - Lack of knowledge
  - Problems with getting care (poor relationships, no medicines, no transport, etc.)
  - Fear (of checking blood sugar; of continuous finger pricking; of other people knowing diagnosis)
  - Time constraints

**QUESTION: What are some things your family can do to help?**

**Responses:**

- Families should adopt same healthy lifestyle that is prescribed for persons with diabetes, including eating healthy foods, exercising, learning about diabetes, reducing stress, and so forth.
- Families should support family members with diabetes in taking medications, monitoring levels, and getting to appointments.

**QUESTION: What services/programs already exist for people with diabetes in your community?**

**Responses:**

- Every location has some medical services
- Diet and exercise programs
- When services are not used, it's usually due to these issues:
  - Access issues (too far away, long waiting time, no transport)
  - Cost issues (service is expensive, not covered by insurance)
  - Eligibility issues (person is not eligible to use service)

**QUESTION: What services could be improved or added?**

**Responses:**

- Health and outreach services, health education, insurance coverage
- Diet and exercise programs
- Programs in churches, schools, civic clubs, etc.

**QUESTION: What agency could help develop programs?  
How would you inform people and get them to come?**

**Responses:**

- All agencies should be involved in diabetes prevention and control, including government, private agencies, businesses, churches, schools, civic organizations, and so forth.
- Inform people through all media channels, plus through word of mouth, personal invitation, and reminders.
- Get people involved.