

USAPI CONSENSUS NCD SURVEILLANCE FRAMEWORK

Introduction:

In recognition of the devastating and increasing health, economic and social costs of non-communicable diseases in the region, the Pacific Islands Health Officers Association issued a regional NCD Emergency Declaration in April, 2010. The declaration calls for a vigorous policy response guided by clear, accurate and referenced data on NCDs and their impact, effectively integrated with other regional, national and local NCD policies and plans, and providing benchmarks for ending the Regional State of Health Emergency.¹ Further specific guidance was provided in the Regional NCD Response Road Map developed by PIHOA members, partners and affiliate groups during the 51st PIHOA Meeting held in Hawaii in November, 2011.² The Road Map endorsed a focus of the response upon four major NCD disease categories (cardiovascular disease, cancer, diabetes and chronic lung disease) and their four major risk factors (tobacco use, unhealthy alcohol use, unhealthy diets and physical inactivity). It also called for directing particular attention to youth.

In early 2012 PIHOA commissioned a technical working group of data and surveillance- savvy health workers to develop a set of core indicators and to identify operational mechanisms for an NCD surveillance system. The working group reviewed key references and received input from experts from regional universities, CDC, SPC, and WHO. The working group considered existing infrastructure and features of the Pacific islands context. Considerations and decisions included:

1. It is desirable to choose indicators which can be lifted out of health data that is already being collected in the region, such as death certificate data, and from surveys that are being done in the region (e.g. NCD Steps, Behavioral Risk Factor Surveillance Survey, Youth Risk Behavior Survey, Global School Health Survey).
2. WHO had already outlined a set of key surveillance indicators which is largely appropriate to the Pacific islands.³ These recommendations were adopted for our use.
3. The severity of the epidemic makes use of rapidly responsive leading indicators desirable. Most youth to 18 years of age attend school in PIHOA member jurisdictions, presenting a low cost venue for getting community based prevalence data from this segment of the population. Three basic risk factors- tobacco use, alcohol use, overweight + obesity- in youth age 15-18 years- were added to the core indicator set.
4. Plan to declare an end to the Regional NCD State of Emergency when all three core, routine youth risk factors (tobacco use, alcohol use, and obesity) are showing a sustained (at least 3 years) decreased prevalence in all six USAPI jurisdictions⁴

Consensus core surveillance indicators are presented below in Table 1, and a diagram showing the core indicators grouped by utility is presented in **Figure 1** below. **Annex B** below includes technical notes and operational considerations. The NCD Consensus Surveillance Framework was endorsed by the PIHOA Board during its 52nd

¹ PIHOA Board Resolution #48-01. "Declaring a Regional State of Health Emergency due to the Epidemic of Noncommunicable Diseases in the US Affiliated Pacific Islands", Palau, April, 2010. (Available at www.pihoa.org)

² The NCD Response Road Map, USAPI Health Leadership Council, November, 2011. (Available at www.pihoa.org)

³ A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Noncommunicable Diseases. Second WHO Discussion Paper. March, 2012

⁴ This is a majority recommendation of the TWG. There was a significant minority that favored a more stringent requirement of waiting until NCD mortality rates also demonstrated a substantial decrease.

meeting in Guam in June, 2012. Endorsement by regional professional organizations (within the Health Leadership Council of the USAPI) was granted in September, 2012

Figure 1-

NCD Surveillance Framework

Every 1-2 Years

*-Is the NCD response
being implemented?
-Is it succeeding?*

Youth Risk Factors

- 30 day Tobacco use prevalence
- 30 day Alcohol use prevalence
- Overweight + Obesity prevalence

(YRBS, GSYS, or local school survey grades 9-12)

Core Policies Uptake

(per NCD Response M&E Plan)

Every 3-5 Years

*- More detailed feedback
to adjust routine
strategy and confirm
success*

Adult Risk Factors

- 30 day Tobacco use prevalence
- 7 day problem alcohol use prevalence
- Overweight + Obesity prevalence
- HTN, DM, High Cholesterol prevalence

(25-64 yo-NCD Steps, or face-to-face BRFSS with physical measurements)

Mortality

- All-cause mortality 30-69yo
- Cause specific mortality 30-69 yo
 - Cancer
 - CVD
 - COPD
 - Diabetes

(Vital Stats & Census)

As Needed

*-Supplemental and
special studies to
test & refine
strategies*

Cancer Registry

Food Access Surveys

Environment Surveys

Economic Impact Studies

Regulation Compliance Surveys

Health System Capacity Surveys

Hospital & Outpatient Encounter Data

Health Service Quality and Coverage

Criteria for declaring an end to the NCD Epidemic:

All three core youth risk factors showing a decline sustained for at least 3 years in all USAPI

Table 1: NCD Surveillance Core Indicators Data Dictionary

1. Overweight + Obesity Prevalence in Students, Grades 9-12

Target	Steady decrease over at least 3 years from baseline <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Obesity often becomes established in childhood and teen years. Most overweight and obese children become overweight and obese adults; after a lag time of several years, hypertension, diabetes and hyperlipidemia develop, followed by disease and death from NCDs. Policies designed to encourage physical activity and good nutrition at the school and community levels often show success first among youth. Therefore youth overweight + obesity prevalence (as compared with adult prevalence) is a “leading indicator” which can show the success (or failure) of control measures within a short time (a year or two)
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of students in grades 9-12 with BMI > 25 <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of students in grades 9-12 in the survey sample <p>[Youth Overweight + Obesity Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - Local high school surveys <p>May also be added on to the following standardized school surveys:</p> <ul style="list-style-type: none"> - CDC Youth Risk Behaviour Survey - WHO Global Youth School Survey - WHO Global Youth Tobacco Survey - CDC National Youth Tobacco Survey
Frequency of Collection	Every 1-2 years
Limitations	<ul style="list-style-type: none"> - Height and weight measurements should be taken privately so that they do not cause embarrassment and avoidance by some students - Late teen growth spurts may introduce variability that would not be seen earlier in childhood, into this measurement. The convenience of taking BMIs for the same grade groups as tobacco and alcohol use prevalence compensates for this small decrease in precision.
Comments	<ul style="list-style-type: none"> - A few students in 9-12 grades may be a year or two older or younger than their peers. This should not affect the results significantly (and it is easier to survey by grade rather than to survey strictly by age) - For small jurisdictions, it is easy to survey all high school students. For large jurisdictions, with many large high schools, it is adequate to sample a fraction of high school students. Recommend consult with a statistician or epidemiologist to determine needed sample size and measures to prevent taking a biased sample.

2. Thirty Day Tobacco Use Prevalence in Students, Grades 9-12

Target	Decrease from baseline, sustained over at least 3 years <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Tobacco use uptake commonly occurs during the teen years. Once habits are established in youth, they are very difficult to reverse in adulthood. Youth tobacco experimentation becomes strong habit in adults then disease and death after a lag period of years. Because youth habits for tobacco are not as strongly established, and because youth are more responsive to policy measures designed to increase the price of tobacco products and decrease the availability and environmental “cues” for tobacco use, youth tobacco use prevalence (as compared with adult prevalence) is a “leading indicator” which can show the success (or failure) of control measures within a short time (a year or two)
Definition	<u>Numerator:</u> - Number of students in grades 9-12 who answer “Yes” to the question: “ <u>Denominator:</u> - Number of students in grades 9-12 in the survey sample $[\text{Youth 30 Day Tobacco Prevalence}] = [\text{Numerator/Denominator}] \times 100\%$
Data Sources (Methods)	Any of the following: - Local high school surveys - CDC Youth Risk Behaviour Survey - WHO Global Youth School Survey - WHO Global Youth Tobacco Survey - CDC National Youth Tobacco Survey
Frequency of Collection	Every 1-2 years
Limitations	Youth may not report their use accurately if the survey is not confidential or if it is presented in a judgemental way
Comments	- See sampling considerations for youth overweight + obesity above

3. Thirty Day Alcohol Use Prevalence in Students, Grades 9-12

Target	Decrease from baseline, sustained over at least 3 years <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Alcohol use uptake commonly occurs during the teen years. Once alcohol use is established in youth, it often becomes problem and habitual drinking in adulthood, which are very difficult to reverse. Disease and death after a lag period of years (unless alcohol related injuries and suicide occur early). Because youth habits for alcohol are not as strongly established, and because youth are more responsive to policy measures designed to increase the price of alcohol products and decrease the environmental “cues” and availability for alcohol use, youth alcohol use prevalence (as compared with adult prevalence) is a “leading indicator” which can show the success (or failure) of control measures within a short time (a year or two)
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of students in grades 9-12 who answer “Yes” to the question: “ <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of students in grades 9-12 in the survey sample <p>[Youth 30 Day Alcohol Use Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - Local high school surveys - CDC Youth Risk Behaviour Survey - WHO Global Youth School Survey - WHO Global Youth Tobacco Survey - CDC National Youth Tobacco Survey
Frequency of Collection	Every 1-2 years
Limitations	Youth may not report their use accurately if the survey is not confidential or if it is presented in a judgemental way
Comments	<ul style="list-style-type: none"> - Note that prevalence of <u>any</u> alcohol use in past 30 days is the alcohol indicator in youth, while we use prevalence of <u>problem</u> alcohol use for adults (see below). This is because teen use of alcohol is illegal, considered by almost everyone to be undesirable, and clearly leads to problem drinking and disease in a significant proportion of teens who drink. Established moderate drinking in adults, on the other hand, is much less likely to cause problems over time. - Also, see sampling considerations for youth overweight + obesity above

4. Overweight + Obesity Prevalence in Adults, Age 25-64

Target	<i>Overweight + Obesity Prevalence levels off- no longer increasing by 2025 (WHO Suggested Target)</i>
Data Type	Percent
Rationale	Overweight/obesity is a composite indicator of both physical inactivity and poor quality nutrition, and drives much of the NCD epidemic. A decrease in adult overweight + obesity prevalence, followed by disease and death from NCDs will occur after several years of effective programs and policies, and will verify that changes seen in leading indicators (youth overweight + obesity) are real.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years with BMI > 25Kg/m² <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>[Adult Overweight + Obesity Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey (face to face version with physical measurements) - Local community based adult surveys (if sampling is done randomly)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	- Depends upon accurate and standardized measurement methods for height and weight, which can be difficult to assure in community based surveys using portable equipment
Comments	25-64 year age group selected because this is the standard age for NCD Steps surveys at present

5. Current Tobacco Use Prevalence in Adults, Age 25-64

Target	Decrease 30% from baseline by 2025 (WHO-suggested target) <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Tobacco use causes a large amount of cancers, heart disease, strokes and chronic lung disease. With implementation of effective tobacco control policies, tobacco use prevalence will first decrease in youth, then decrease after a period of several years in adults. It is important to confirm that control measures are working by verifying that exposure is decreasing in adults as well as in children.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 25-64 years who record an answer of “Yes” to <u>either</u> of the following two questions: <ul style="list-style-type: none"> • Do you currently smoke any tobacco products such as cigarettes, cigars or pipes? • Do you currently use any smokeless tobacco such as [snuff, chewing tobacco, betel] <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>[Adult Tobacco Use Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	Any of the following: <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey - Local community based adult surveys (if sampling is done randomly)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	
Comments	25-64 year age group selected because this is the standard age for NCD Steps surveys at present

6. Problem Alcohol Drinking Prevalence in Adults, Age 25-64

Target	Decrease 10% from baseline by 2025 (WHO suggested target) <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Problem drinking causes cancers of the mouth, throat, esophagus, stomach, and liver, as well as heart disease and strokes. With implementation of effective alcohol control policies, alcohol use prevalence will first decrease in youth, then decrease after a period of several years in adults. It is important to confirm that control measures are working by verifying that exposure is decreasing in adults as well as in children.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 25-64 years who record an answer if any number greater than "0" to the question: "During the past 30 days, how many times did you have [(for men): 5 or more, (for women): 4 or more] standard alcoholic drinks in a single drinking occasion <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>[Adult Alcohol Use Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey - Local community based adult surveys (if sampling is done randomly)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	Subjects may not report their use accurately if the survey is not confidential or if it is presented in a judgemental way
Comments	<ul style="list-style-type: none"> - Note that prevalence of <u>any</u> alcohol use in past 30 days is the alcohol indicator in youth, while we use prevalence of <u>problem</u> alcohol use for adults. This is because teen use of alcohol is illegal, considered by almost everyone to be undesirable, and clearly leads to problem drinking and disease in a significant proportion of teens who drink. Established moderate drinking in adults, on the other hand, is much less likely to cause problems over time. - 25-64 year age group selected because this is the standard age for NCD Steps surveys at present

7. Prevalence of Hypertension in Adults, Age 25-64

Target	Decrease 25% by 2025 from baseline (WHO suggested target) <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Hypertension increases the risk of heart attacks and stroke. Adult hypertension prevalence is an intermediate term indicator. As physical activity, nutrition and alcohol consumption risk factors improve in the population, hypertension prevalence should also improve, after a lag period of several years. This indicator confirms that NCDs are being addressed effectively, before decreases in mortality are evident
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years with BP \geq 140 systolic <u>OR</u> \geq 90 diastolic <u>OR</u> who answer "Yes" to the question: "Are you on medicine for high blood pressure" <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>$[\text{Adult Hypertension Prevalence}] = [\text{Numerator/Denominator}] \times 100\%$</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey (face to face version with physical measurements) - Local community based adult surveys (if sampling is done carefully)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	Depends upon accurate and standardized measurement of BP in field settings
Comments	25-64 year age group selected because this is the standard age for NCD Steps surveys at present

8. Prevalence of Diabetes in Adults, Age 25-64

Target	<i>Note: Target and Baseline to be established</i>
Data Type	Percent
Rationale	Diabetes rates are especially high in the Pacific. Adult diabetes prevalence is an intermediate term indicator. As physical activity and nutrition risk factors improve in the population, diabetes prevalence should also improve, after a lag period of several years. This indicator confirms that NCDs are being addressed effectively, before decreases in mortality are evident
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 25-64 years who have fasting blood glucose value ≥ 126 mg/ dl or who answer “Yes” to the question: “Are you taking medication for raised blood glucose?” <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>[Adult Diabetes Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey (face to face version with physical measurements) - Local community based adult surveys (if sampling is done randomly)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	Depends upon availability of reagents and careful measurement technique in the field
Comments	25-64 year age group selected because this is the standard age for NCD Steps surveys at present

9. Prevalence of High Cholesterol in Adults, Age 25-64

Target	Decrease by 20% by 2025 (WHO Suggested Target) <i>Note: Baseline to be established</i>
Data Type	Percent
Rationale	Diabetes rates are especially high in the Pacific. Adult diabetes prevalence is an intermediate term indicator. As physical activity and nutrition risk factors improve in the population, diabetes prevalence should also improve, after a lag period of several years. This indicator confirms that NCDs are being addressed effectively, before decreases in mortality are evident
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 25-64 years who have a total blood cholesterol value ≥ 190 mg/dl. <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 25-64 years in the survey sample <p>[Adult High Cholesterol Prevalence] = [Numerator/Denominator] X 100%</p>
Data Sources (Methods)	<p>Any of the following:</p> <ul style="list-style-type: none"> - WHO NCD Steps Survey - CDC Behavioral Risk Factor Surveillance Survey (face to face version with physical measurements) - Local community based adult surveys (if sampling is done randomly)
Frequency of Collection	Every 5 years
Stratify by:	Gender
Limitations	Fairly expensive to determine, requiring both community based survey and lab reagents
Comments	<ul style="list-style-type: none"> - Unlike hypertension and diabetes, this indicator does not include patients with medication-controlled condition in the numerator (so that the indicator here will show improvement both by improved underlying nutrition, tobacco, and physical activity, but also by effective medical treatment of hyperlipidemia. - 25-64 year age group selected because this is the standard age for NCD Steps surveys at present

10. All-Cause Mortality Rate, Adults Age 30-69 Years

Target	25% decrease from 2010 baseline, by year 2025 (WHO suggested target) <i>Note: Baseline to be established</i>
Data Type	Rate (per million population)
Rationale	Most deaths in middle age are caused by NCDs. The all-cause mortality rate 30-69 years, gives an idea of the burden of NCDs on the population that does not depend upon accurate cause of death determination by death certificate coders.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 30-69 years with deaths occurring during the past 3 completed calendar years. <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 30-69 years in the jurisdiction population, during the middle year of the 3 most recent completed calendar years. <p>$[\text{Adult All-Cause Death Rate}] = [\text{Numerator/Denominator}] \times 1,000,000$</p>
Data Sources (Methods)	<ul style="list-style-type: none"> - Jurisdiction Vital Statistics Registries - Jurisdiction Census
Frequency of Collection	Every 5 years
Stratify by:	Gender
Adjust by:	5 year age groups using WHO 2000 standard reference population distribution
Limitations	Some jurisdictions under-count deaths (especially those that occur out-of-hospital).
Comments	30-69 year age group recommended by WHO in “A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Non-Communicable Diseases”, March, 2012.

11. Cardiovascular Disease Mortality Rate, Adults Age 30-69 Years⁵

Target	25% decrease from 2010 baseline, by year 2025 (as recommended by WHO) <i>Note: Baseline to be established</i>
Data Type	Rate (per million population)
Rationale	Cardiovascular disease, including myocardial infarct (heart attack), stroke, heart failure, rheumatic heart disease and peripheral vascular disease, is one of the “big four” causes of NCD death. The ultimate outcome measure of an effective response to the NCD crisis will be a decrease in NCD death rates.
Definition	<p><u>Numerator:</u> - Number of adults, age 30-69 years with deaths occurring during the past 3 completed calendar years, with listed underlying cause of death codes for cardiovascular disease, per ICD-10 “103 list” (see Annex A below).</p> <p><u>Denominator:</u> - Number of adults 30-69 years in the jurisdiction population, during the middle year of the 3 most recent completed calendar years.</p> <p>$[\text{Adult Cardiovascular Death Rate}] = [\text{Numerator}/\text{Denominator}] \times 1,000,000$</p>
Data Sources (Methods)	<ul style="list-style-type: none"> - Jurisdiction Vital Statistics Registries - Jurisdiction Census
Frequency of Collection	Every 5 years
Stratify by:	Gender
Adjust by:	5 year age groups using WHO 2000 standard reference population distribution
Limitations	Some jurisdictions under-count deaths (especially those that occur out-of-hospital). Better cause-of-death determination will improve accuracy of cause-specific death rates
Comments	30-69 year age group recommended by WHO in “A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Non-Communicable Diseases”, March, 2012.

⁵ Cardiovascular deaths include those from coronary heart disease (heart attack), cerebrovascular disease (stroke), peripheral artery disease, rheumatic heart disease, congenital heart disease and heart failure

12. Diabetes Mortality Rate, Adults Age 30-69 Years

Target	25% decrease from 2010 baseline, by year 2025 (as recommended by WHO) <i>Note: Baseline to be established</i>
Data Type	Rate (per million population)
Rationale	Diabetes, (together with cardiovascular disease, chronic lung disease, and cancer) is one of the “big four” causes of NCD death. The ultimate outcome measure of an effective response to the NCD crisis will be a decrease in NCD death rates.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 30-69 years with deaths occurring during the past 3 completed calendar years, with listed underlying cause of death codes for diabetes, per ICD-10 “103 list” (see Annex A below). <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 30-69 years in the jurisdiction population, during the middle year of the 3 most recent completed calendar years. <p>$[\text{Adult Diabetes Death Rate}] = [\text{Numerator/Denominator}] \times 1,000,000$</p>
Data Sources (Methods)	<ul style="list-style-type: none"> - Jurisdiction Vital Statistics Registries - Jurisdiction Census
Frequency of Collection	Every 5 years
Stratify by:	Gender
Adjust by:	5 year age groups using WHO 2000 standard reference population distribution
Limitations	Some jurisdictions under-count deaths (especially those that occur out-of-hospital). Better cause-of-death determination will improve accuracy of cause-specific death rates
Comments	30-69 year age group recommended by WHO in “A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Non-Communicable Diseases”, March, 2012.

13. Cancer Mortality Rate, Adults Age 30-69 Years

Target	25% decrease from 2010 baseline, by year 2025 (as recommended by WHO) <i>Note: Baseline to be established</i>
Data Type	Rate (per million population)
Rationale	Cancer, (together with cardiovascular disease, chronic lung disease, and diabetes) is one of the “big four” causes of NCD death. The ultimate outcome measure of an effective response to the NCD crisis will be a decrease in NCD death rates.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 30-69 years with deaths occurring during the past 3 completed calendar years, with listed underlying cause of death codes for cancer, per ICD-10 “103 list” (see Annex A below). <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 30-69 years in the jurisdiction population, during the middle year of the 3 most recent completed calendar years. <p>[Adult Cancer Death Rate] = [Numerator/Denominator] X 1,000,000</p>
Data Sources (Methods)	<ul style="list-style-type: none"> - Jurisdiction Vital Statistics Registries - Jurisdiction Census
Frequency of Collection	Every 5 years
Stratify by:	Gender
Adjust by:	5 year age groups using WHO 2000 standard reference population distribution
Limitations	Some jurisdictions under-count deaths (especially those that occur out-of-hospital). Better cause-of-death determination will improve accuracy of cause-specific death rates
Comments	30-69 year age group recommended by WHO in “A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Non-Communicable Diseases”, March, 2012.

14. Chronic Lung Disease Mortality Rate, Adults Age 30-69 Years

Target	25% decrease from 2010 baseline, by year 2025 (as recommended by WHO) <i>Note: Baseline to be established</i>
Data Type	Rate (per million population)
Rationale	Chronic Lung Disease, (together with cardiovascular disease, diabetes, and cancer) is one of the “big four” causes of NCD death. The ultimate outcome measure of an effective response to the NCD crisis will be a decrease in NCD death rates.
Definition	<p><u>Numerator:</u></p> <ul style="list-style-type: none"> - Number of adults, age 30-69 years with deaths occurring during the past 3 completed calendar years, with listed underlying cause of death codes for chronic lung disease, per ICD-10 “103 list” (see Annex A below). <p><u>Denominator:</u></p> <ul style="list-style-type: none"> - Number of adults 30-69 years in the jurisdiction population, during the middle year of the 3 most recent completed calendar years. <p>[Adult Chronic Lung Disease Death Rate] = [Numerator/Denominator] X 1,000,000</p>
Data Sources (Methods)	<ul style="list-style-type: none"> - Jurisdiction Vital Statistics Registries - Jurisdiction Census
Frequency of Collection	Every 5 years
Stratify by:	Gender
Adjust by:	5 year age groups using WHO 2000 standard reference population distribution
Limitations	Some jurisdictions under-count deaths (especially those that occur out-of-hospital). Better cause-of-death determination will improve accuracy of cause-specific death rates
Comments	30-69 year age group recommended by WHO in “A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Non-Communicable Diseases”, March, 2012.

Annex A:**103 Cause List (ICD 10-version 2)**

Note – Use the codes below for cause-specific mortality indicators for core indicators #11-14 above; codes in BOLD text are aggregates of the categories listed below them

List code	Disease	ICD-10 Codes (ICD-9 Codes in blue)
1-026	Cancer-specific mortality codes	C00–D48 (ICD-9: 140-208, 210-239)
1-027	Malignant neoplasm of lip, oral cavity and pharynx	C00–C14
1-028	Malignant neoplasm of esophagus	C15
1-029	Malignant neoplasm of stomach	C16
1-030	Malignant neoplasm of colon, rectum and anus	C18–C21
1-031	Malignant neoplasm of liver and intrahepatic bile ducts	C22
1-032	Malignant neoplasm of pancreas	C25
1-033	Malignant neoplasm of larynx	C32
1-034	Malignant neoplasm of trachea, bronchus and lung	C33–C34
1-035	Malignant melanoma of skin	C43
1-036	Malignant neoplasm of breast	C50
1-037	Malignant neoplasm of cervix uteri	C53
1-038	Malignant neoplasm of other and unspecified parts of uterus	C54–C55
1-039	Malignant neoplasm of ovary	C56
1-040	Malignant neoplasm of prostate	C61
1-041	Malignant neoplasm of bladder	C67
1-042	Malignant neoplasm of meninges, brain and other parts of central nervous system	C70–C72
1-043	Non-Hodgkin's lymphoma	C82–C85
1-044	Multiple myeloma and malignant plasma cell neoplasms	C90
1-045	Leukaemias	C91–C95
1-046	Remainder of malignant neoplasms	C17, C23–C24, C26–C31, C37–C41, C44–C49, C51–C52, C57–C60, C62–C66, C68–C69, C73–C81, C88, C96–C97
1-047	Remainder of neoplasms	D00–D48
1-052	Diabetes mellitus	E10–E14 (ICD-9: 250)
1-064	Diseases of the circulatory system	I00–I99 (ICD-9: 390-434, 436-448, 451-459)
1-065	Acute and chronic rheumatic heart diseases	I00–I09
1-066	Hypertensive diseases	I10–I13
1-067	Ischaemic heart diseases	I20–I25
1-068	Other heart diseases	I26–I51
1-069	Cerebrovascular diseases	I60–I69
1-070	Atherosclerosis	I70
1-071	Remainder of diseases of the circulatory system	I71–I99
1-076	Chronic lower respiratory diseases	J40–J47 (ICD-9: 490-491, 493)

Annex B: Technical and Operational Notes for NCD Surveillance Framework

(Listed by surveillance objective):⁶

Objective 1: Develop recommendations for the elements of a minimum data set to be used to paint a clear regional picture of the course of the epidemic over time-

- Core surveillance indicators need to be supplemented as needed with more in-depth, more narrowly focused surveys and studies
- Special effort should be made for including outlying areas (such as outer islands) in school youth risk factor surveys and to capture cause of death information
- Cause-specific ICD code groups used in these definitions are derived from the ICD-10 coding system. Data from jurisdictions still using ICD-9 (currently American Samoa, CNMI, Guam) will need to be manipulated to provide comparable cause-specific mortality estimates. This must be done in a consistent, uniform way to maximize comparability of indicators across time and jurisdictions.
- The age range for which adult risk factor surveys are performed (especially NCD Steps and BRFSS) has varied over time and across jurisdictions. Care must be taken to analyze results so that the consensus age range for adult indicators is consistent.
- Due to cultural factors, face-to-face collection of adult risk factor data are recommended over telephone interviews, unless field tests show that prevalence estimates are comparable in a jurisdiction.
- Age standardization should be performed for adult risk factor and mortality indicators. Most jurisdictions will need technical assistance to build the capacity to do this. The TWG recommends use of the WHO 2000-2025 standard reference population.
- Clear baseline values need to be established for most of the core, routine indicators listed in Annex D. If available, data from 2010, or as close to 2010 as possible, should be used to establish baselines (use 2009-2011 for mortality indicators requiring three years of composite data to avoid small-population random fluctuations). In general, indicator targets recommended by WHO, should be used where available⁷.

Objective 2: Identify appropriate institutional mechanism(s) for providing support for jurisdictional NCD surveillance, for assembling a regional picture of the progress of the epidemic, and for providing technical assistance to involve communities in the preparation, dissemination and response to epi profiles

- There are two existing structures- the Pacific Public Health Surveillance Network, and the Regional Cancer Registry unit at University of Guam- that could be adapted, with to work with jurisdiction-based NCD surveillance units to build capacity and to ensure accurate collection of data for core NCD indicators. Both of these should be explored.
- There are also two existing structures at the jurisdiction level- the PPHSN affiliated EpiNet groups, and the Behavioral Health Collaborating Council affiliated State Epidemiology Outcome Workgroups (SEOWs) that could be adapted to the task of assuring that data for NCD indicators is collected properly, and that surveillance results are “packaged” and fed back to their communities. Again, both of these possible mechanisms should be explored.
- A region-wide NCD Emergency Response Monitoring and Evaluation unit should track the uptake of the “essential policy package”, once the elements of this have been identified and endorsed. This function could be performed by the Cancer Council of the Pacific Islands, the Pacific Chronic Disease Coalition, WHO, SPC, or PIHOA secretariat.
- The accuracy of core, regular surveillance indicators for mortality depends upon improved charting and cause of death determination by physicians. The adoption and promotion of competency standards for these

⁶ Except as noted, all recommendations are issued by consensus of the entire TWG

⁷ e.g. as listed in: A Comprehensive Global Monitoring Framework Including Indicators and a Set of Voluntary Global Targets for the Prevention and Control of Noncommunicable Diseases. Second WHO Discussion Paper. March, 2012. (available at: http://www.searo.who.int/LinkFiles/mhnd_GMF.pdf)

functions by physicians is an important contribution to the regional NCD emergency response. Medical associations at the jurisdiction and regional level are the best mechanism for upgrading these skills.

Objective 3: Develop recommendations for integrating a regional surveillance mechanism into existing NCD related strategic plans, and for using this mechanism to promote a more coherent approach to surveillance in NCD-related response plans that are yet to be developed.

- Regional Professional associations have a big role in encouraging use of core, routine NCD surveillance indicators set forth in Table 1 in objectives for agency strategic and annual plans with more detailed routine and supplemental studies and indicators as needed into the data components of their program and strategic plans. For example, regional and jurisdiction cancer registries should develop needed cancer type-specific incidence and mortality indicators, but should prefer to use the same all-cancer mortality indicator set forth in this framework.
- Development partners also have a role in aligning their NCD surveillance requirements and support with other partners in the region and with the core routine NCD surveillance indicators set forth in this framework.
- Public health and clinical program managers within the USAPI have a role to play to incorporate the core routine NCD surveillance indicators set forth in this framework (with supplemental studies as needed) in the data components of their program and strategic plans.

Other:

- Though not very useful for surveillance, the TWG emphasizes need for better development of NCD patient tracking registries, in particular to develop capacity to use software tracking programs for guiding public health outreach, for measuring compliance with clinical guidelines, and for prompting care providers to deliver needed interventions to patients with NCDs.
- A monitoring and evaluation (M&E) plan for the implementation of the NCD policy response, in particular, is also important. Regional work for recommending a core set of NCD policies and for obtaining endorsement by the Micronesian Chief Executives and the Association of Pacific Island Legislators is in process. Once consensus is reached on a core set of NCD policies, a plan for monitoring uptake of these policies in the jurisdictions can be adopted.