Guidelines for developing a population based Gender and Health Profile

Guidelines for Developing a Population-Based Gender and Health Profile

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Acknowledgements

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Introduction

This guide describes how to develop and present a gender and health profile for health policy and planning.

A gender and health profile is a summary of data and related information that describes health, and its determinants, for a population. Gender-based analysis is used to understand how sex-disaggregated data relate to the daily lives of men, women, girls and boys. The population health story described in a profile is built upon a series of indicators, or measurements, of key health concerns or topics. Indicators should be widely understood, easily measured, can be addressed through policy at some level, and can be used to record the progress made to reduce inequities and improve health in the population. Because health indicators provide simple and convenient descriptions of aspects of health status or influences on health, they can be used to encourage practitioners, policy makers and the general public to take action to improve health.

Profiles can differ in their level of complexity. A profile can be developed for just one health topic or for many topics and indicators in a framework of topic areas. A profile that includes a number of topic areas and many indicators provides a richer understanding of the range of influences on health, and can uncover subtle differences in local and national circumstances.

Indicators are specific measures. They are recorded and compared between groups, places or over time, to establish where change and improvement may be needed, and to measure how well the change is succeeding.

The content of a profile is based on both numerical (quantitative) and narrative (qualitative) data. Numerical data give some idea of **what** is happening (trends over time, emergence of new diseases, for example) and to **whom** it is happening (which people are sick, where they live, how they are being treated, for example). Numerical data describe the health of the population broadly, and statistical analysis and investigation make it possible to separate variables, such as sex and age, as well as to compare variables from complementary data sets. However, numerical data are not the only information provided in a profile. Current academic research, government documents and community reports provide other valuable information in a profile about why trends and data points are observed, and how they may have come about.

This guide describes the information needed and the steps to take to present health-related data in a profile using a gender-based analysis. It follows the methods described in the **Guidelines for Gender-Based Analysis of Health Information for Decision Making.**

The aim is to use the data, related literature and gender-based analysis to improve health, health determinants and health system performance.

A framework for the profile

The World Health Organization defines health broadly, as more than just the presence or absence of disease:

> "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

A gender and health profile, then, should include a broad range of indicators for health and health determinants. That is, a profile should include not only clinical indicators of physical and mental health, but also indicators about other dimensions in people's lives.

For example:

Possible clinical health indicators:	Possible non-clinical health indicators:
Rates of diagnosed disease	Income
Hospital visits	Education and literacy
Visits to doctors or other clinicians	Access to services including health care
Treatment data	Political decision-making ability
Drug prescriptions	Migration trends
Mortality rates and causes	Labour and working conditions
Body weight	Exposure to pollutants and toxins

A **framework** outlines how the profile's indicators relate to each other and are used together to provide a complete story about health. A framework can be set up in many ways but the framework chosen should name the areas of interest in the profile (such as health status, health determinants and health system performance). The indicators provide measures that contribute to the understanding of health and gender within the topic areas. The goal is to compile, wherever possible, a rich picture of health-influencing factors.

For example, a simple measure of labour force participation gives only a brief idea of how and where men and women are employed. More complete information is given when rates of employment and unemployment are included, as well as some measure and description of self-employment. All these factors (indicators) influence health because of the stresses related to precarious, seasonal or unstable employment. The story becomes clearer with presentation of data on employment by education level, wage differences, income earnings and in which sector and occupations the work

is done (private, public, service, etc.). It would also be important to consider the distribution of paid and unpaid work among women and men in the household, as women generally do more unpaid work than men, and men do more paid work than women. This situation affects women's access to health and retirement plans through paid work. Each of these indicators provides more information about the daily lives and the influences on women's and men's health and helps to explain where inequities arise.

Community stakeholders, both women and men, can be consulted about their health concerns and the indicators they want included in the framework. The indicators chosen for the profile should be ones that can be measured and can be used to take action to improve equity and equality. See Appendix A for some examples of profile frameworks.

The profile framework is like the frame of a house. It gives the basic structure and defines the rooms. The indicators, like the contents and furniture of a house, provide the more complex details and information.

Resources needed for a profile

As explained in the introduction, a profile does not just report data by sex. A gender and health profile brings together data disaggregated by sex (as well as by age, socio-economic level, ethnicity, geography and other relevant variables where possible), current literature, and a working knowledge of existing policies and local politics. It is also important to have staff who are knowledgeable about the health of women and men in the community as well as contacts with health care providers, health planners, front-line workers, and grassroots agencies who can help describe population trends in more detail or at a more local level if needed.

Resources needed for each indicator and a profile:

→ Data disaggregated by sex, and by other relevant variables,
→ Current research and academic literature, government and community reports,
→ Staff who understand gender, and who have working knowledge of policies in the topic area,
→ Community representatives and
→ Other experts who can help interpret data and literature within the local context.

For each indicator or set of indicators you will need the following:

Health indicator data

You will require statistical data for the indicator, collected and reported by sex, and preferably by age, ethnicity and socio-economic status. Whenever possible, use the most recent and complete data for the region, nation or local area. In particular, it is valuable if the data are available for the level where policy is made.

In some cases not all the data needed may be available, or it may not be available by sex. For some indicators it may be possible to use proxy data – data that are similar to the topic in question, and that can give some idea of the current measures – to describe what should be measured and reported.

Proxy data example: Data about a particular ethnic group may not be availables, or perhaps cannot be separated from a larger data set. However, census data may provide information about geographical areas where there are high proportions of the ethnic group of interest. The area-level data can then be used as a proxy for the ethnic group.

Be sure to highlight where there are information gaps, or where data should be collected and reported by sex in the future.

It is appropriate to report on one sex only if the condition or disease is sex-specific. For example, maternal mortality and morbidity affect women only, whereas prostate cancer affects men only. Gender-based analysis is still needed to show how gender roles influence the health condition.

Current literature

The data in the profile are presented in the context of current academic and research literature, government and NGO reports, and community documents. The literature from all these sources is used to describe what other people have already learned about the indicator. This would include medical and clinical research and reports, papers about treatment methods, population health and social health trends, government policies and strategies, as well as information on local issues and initiatives. Some of this literature will be specific to one sex or the other, but much of it *will not be.* Use the literature gathered if it gives more or better understanding of biology and physiology (sex differences in symptoms, for instance), or the effects of gender roles on the indicator (whether men are more or less likely to seek health care, for instance).

As employment affects health through income but also through work place stress, the example of labour and employment (page 2) would be richer with information from local, national and regional reports and papers about labour trends, economic opportunities and recent changes, migration and employment patterns, and perhaps, local men's and women's employment over the lifespan and gender divisions in household labour. Re-

ports from grassroots agencies may provide important community knowledge about working conditions, employment security issues, availability of social support and health and safety training for workers. Summaries of this information provide context for the indicator data in a profile.

Note that all documents used to develop a profile must be given full citations.

Staff knowledge
Both the data and the literature must be analyzed with a gender perspective. Staff involved in writing and developing a profile must be able to conduct and interpret simple statistical analyses, understand scientific methods, critically consider limitations of the data and the literature gathered, interpret how the information collectively gives greater understanding of gender in this aspect of the health of women and men, and provide recommendations for policy, programming or further surveillance. Staff must also consider what else is known about social and cultural roles, status and expectations that may be influencing the numerical data presented.

Wherever possible, staff should be able to invest their own experience and knowledge of local situations in how they interpret what they see in the data and the literature, without making subjective conclusions.

Community
Members of the community, local women and men, also have important knowledge to share. Citizen engagement is ensured by working with community leaders (both women and men) throughout the develop-

ment of the profile. Community women and men can advise on the indicators that are important to their health, and that reflect local circumstances and influences on the health of the community. Involving community members in the design, development, and production of the profile contributes to their sense of ownership of the profile, and enriches the information compiled.

Government contacts and other experts

A gender and health profile is likely to cover a wide range of subject areas. Since staff may not have enough knowledge about all topics, a profile will be enriched if staff can contact external experts from time-to-time for assistance in interpreting data, or guidance in finding other related literature. It is possible, for example, that a local public health nurse can explain, based on her work, changes in disease incidence, or why more women have recently received new treatments. Government employees are also excellent resources with information about policies and programs that affect health or service delivery.

In addition, it is valuable to have regular contact with the staff and agency that collect, compile and store the statistical data. They can help ensure that interpretations of the data used in the profile are correct, and provide information about data limitations and how the data are collected and reported.

Presenting information in a gender & health profile

This section describes the steps for developing and presenting the information for indicators in a gender and health profile. The steps describe the organization for presenting the profile indicators and explain key aspects of the process involved. An example, diabetes in Belize, is presented in the pages following the instructions for each step.

For every indicator (or set of related indicators) in a profile, present the following:

Step 1: Introduction
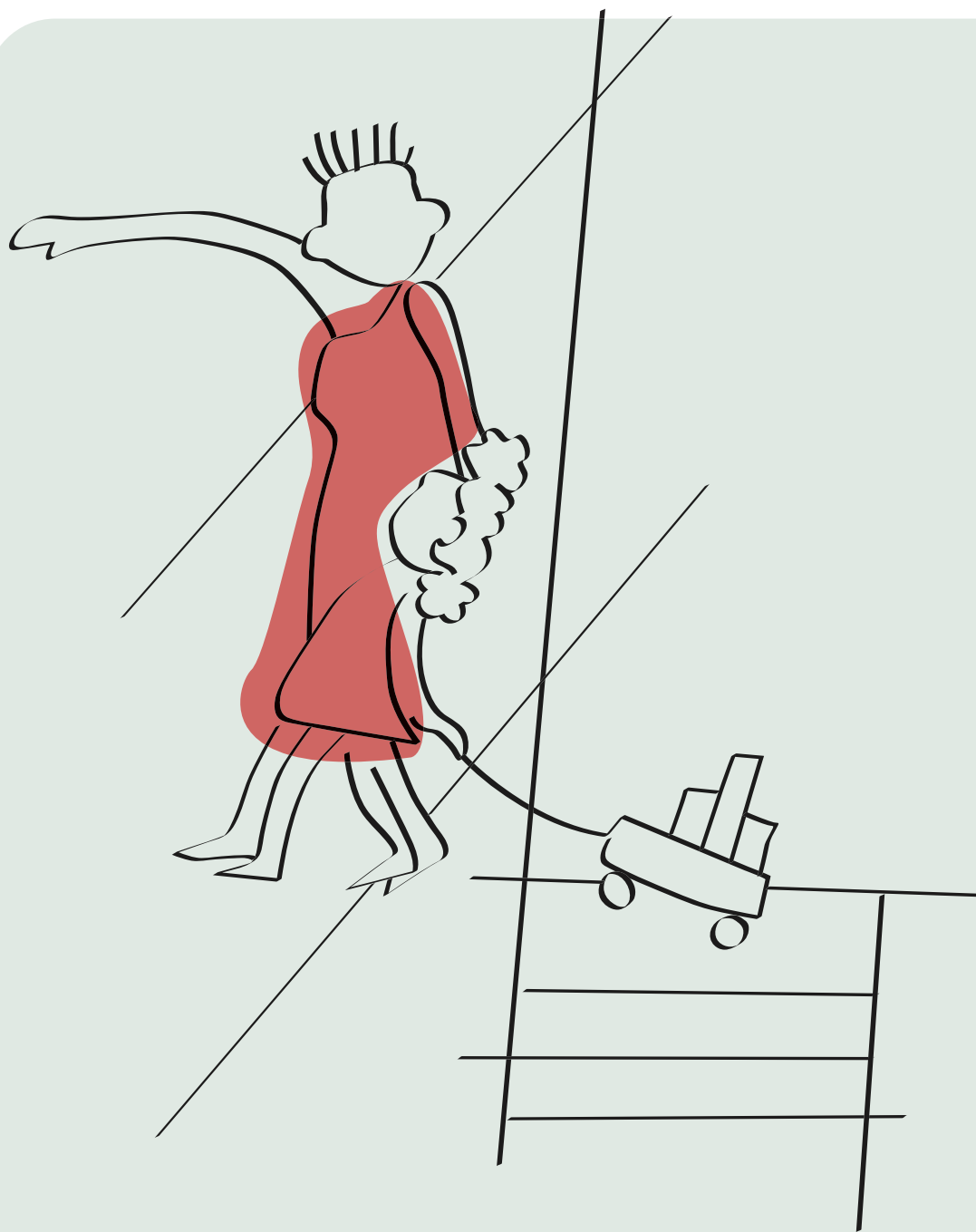**Step 2:** Description of the data, including limitations
Step 3: Gender-based analysis and presentation of data
Step 4: Gender-based analysis of literature and discussion (including the implications of other results and gender influences on the health issue)
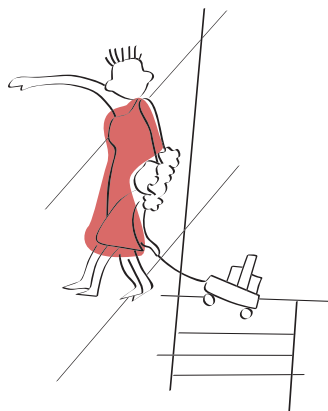**Step 5:** Conclusions and lessons learned
Step 6: Policy implications and recommendations

step **1** Introduction

Step 1 | Introduction

The introduction defines the topic under consideration and explains why it has been included in the Gender and Health profile. It also sets the context and explains how this topic is important to population health and what will be done with the results.

Define concepts :

It is useful to start with a definition of the topic or health concern. Use clear and plain language to ensure that a broad range of readers will have a basic understanding of the topic. If the description includes complex medical terms, it is helpful to provide background information or explanations for technical or biomedical terms in a sidebar or text box, with references for further reading.

Questions to consider for the Introduction:

→ What is the topic?
→ What indicator(s) will be used to describe the topic?
→ Why include this topic in the profile?
→ Why is it a health concern for women or men?
→ What do you hope to learn from the present analysis?
→ How is the topic important to the health of communities or the population as a whole?
→ How can the findings be used to change health policies or services?

Establish purpose :

Explain why this topic is a health concern for women or for men. Consider what is known about differences between women and men in this topic area and what more may be learned from an analysis of the indicator(s). Raising such questions at the outset may help you to clarify a purpose for the analysis. Certain results from the analysis (later steps) might

be highlighted here to demonstrate to readers the importance of including gender and sex differences in the analysis.

Set a context :

Other information may help to set a context for the importance of your findings for women and men, families, communities, the wider society and its systems (e.g. health and social services systems, the economy). By including community and social issues, as well as medical concerns, you will lay the groundwork for a broad analysis of health.

You may want to include:

→ estimates of the size of the population affected or at risk,
→ a ranking of the importance of the indicator in relation to other indicators,
→ observations of any recent trends,
→ a global or national context to the issue,
→ implications for the quality of life of individuals or conditions in the community,
→ the importance of the indicator for economic and social development, and/or
→ implications for health care costs for individuals and for the society.

The following example gives an introduction to the topic and indicators for Diabetes mellitus in Belize.

Example | Diabetes in Belize

Diabetes Mellitus is a chronic disease, characterized by the body's inability to produce enough insulin and/or to use the insulin that it does produce to break down sugar (glucose) in the blood to nourish cells. Diabetes can have serious long-term consequences. Common complications include kidney failure, loss of limbs or blindness. Diabetes is also a risk factor for the development of cardiovascular diseases. It is a major cause of disability and can greatly affect quality of life and significantly reduce life expectancy. Early diagnosis and prevention are important, as early treatment or lifestyle changes (improved diet and physical activity) can reduce the prevalence of consequences and prolong life.

Diabetes is an important and growing health concern in the Americas, where an increase in sedentary lifestyles and high calorie diets, as well as aging populations, are thought to contribute to the prevalence of the disease. Over the next 10 years, deaths from diabetes are expected to increase by more than 80% in the Americas [1]. In Belize, diabetes is a leading cause of death, which ranks greater in importance for women than men. International data shows evidence that diabetes has different risks and outcomes in women and men.

Women may live longer with diabetes than men. As well, women are at risk of gestational diabetes.

The following analysis will explore differences in diabetes outcomes—particularly morbidity and mortality—in women and men in Belize, with the objective of improving the effectiveness of health system and community-based initiatives for prevention and treatment.

Definitions and types of diabetes:

Type 1 diabetes is a life-long condition in which the pancreas stops making insulin. It usually begins before the age of 30. It has also been called juvenile diabetes or insulin-dependent diabetes, as individuals require injections of insulin to regulate blood sugar levels. .

Type 2 diabetes, often called non-insulin dependent diabetes, occurs when insulin is produced but not used properly by the body. Type 2 diabetes is usually diagnosed after the age of 45. It is the most common form of diabetes, accounting for 90% to 95% of all cases.

Gestational diabetes occurs among some pregnant women, where the body does not properly use insulin during pregnancy. Gestational diabetes increases the risk of Type 2 diabetes, spontaneous abortion and newborn morbidity, as well as childhood obesity [2]

step **2** Describing the data and its limitations
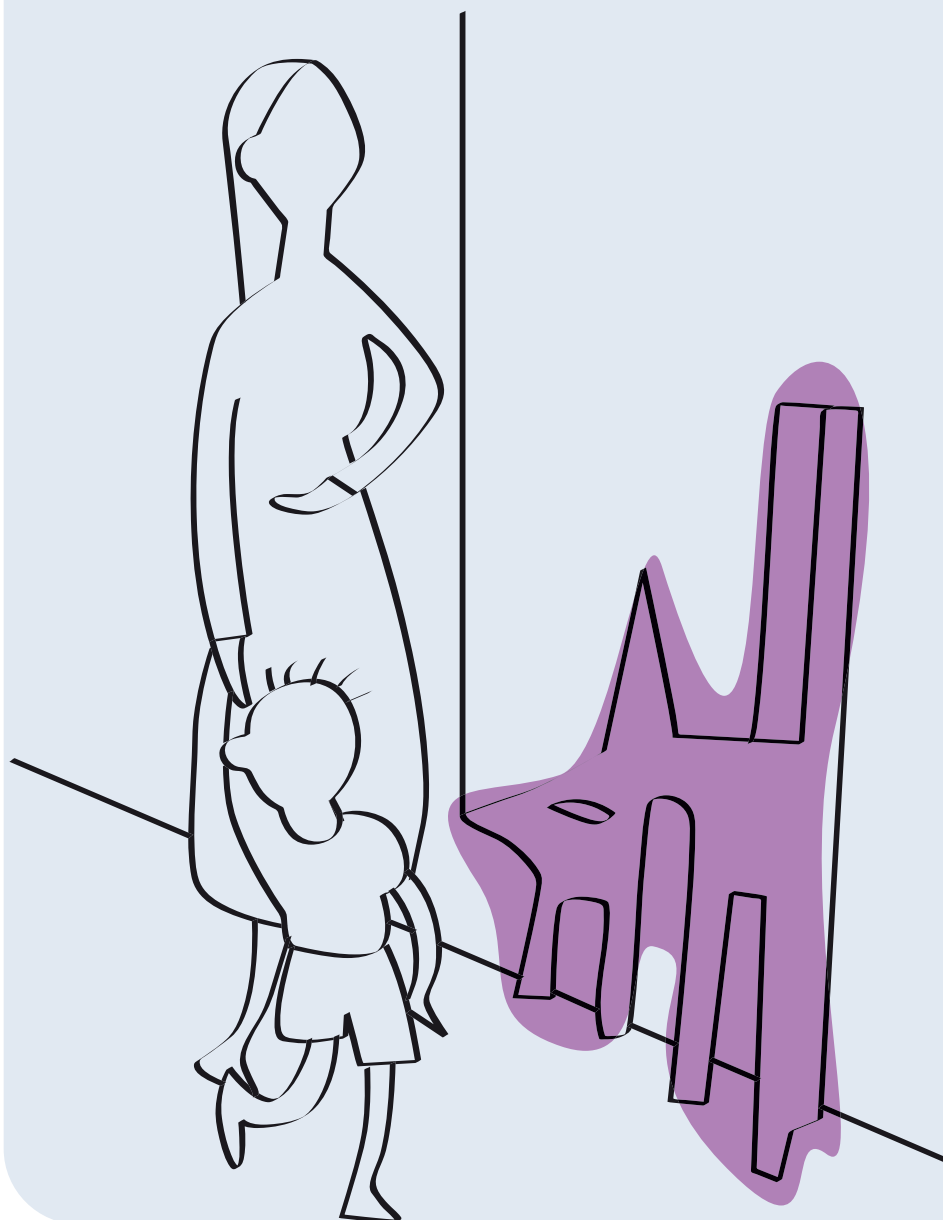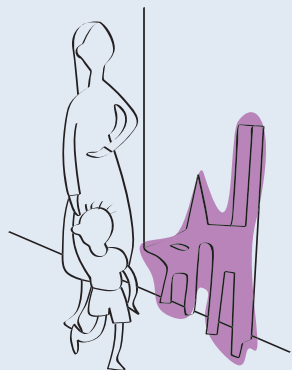
Step 2 | Describing the data and its limitations

The next step is to briefly describe the data used to measure an indicator of health.

Define the indicator(s) that will be used for the health topic and describe the data. Include information on the source of the data, the time period and population they represent, the method of data collection used and, where available, the case definition or criteria that determined what information was included and what was excluded. Cite a reference to provide readers with more information about the data source, including any notations from the data administrator. It may be important to note who is responsible for the calculation of any statistics that will be used in the data analysis (for example the staff of your own organization or the organization which administers the data).

Information on the data's origin and make up can suggest ways in which the data may be limited in responding to the purpose of the analysis (Step 1) and help to interpret how and to whom the findings will apply. Thus, it is useful to describe limitations of the data. Some important types of data limitations include:

Imprecision: Despite best efforts to achieve accuracy, data may not represent ideal or precise measures of the health indicator, as it has been defined. Health indicators are commonly expressed as **prevalence** or **incidence** rates (see Glossary). However, data often provide only an approximation of the true prevalence or incidence of illness for the population.

For example, hospital admissions data are often relied upon for measuring the prevalence of illness in a population, yet these data only reflect cases of illness in individuals who have developed symptoms, sought care, received a diagnosis, and been admitted for treatment in hospital. Thus, many cases in the population go unmeasured. While hospital admissions data may provide a good estimate of the prevalence of a serious and acute disease in the population, they may be an imprecise measure of the prevalence of a chronic, asymptomatic illness, which may require hospital care only during acute phases.

Incidence rates measure the probability that healthy people will develop a disease during a certain period of time.

Prevalence rates measure the number of existing cases of disease in a population at one point in time.

As a further example, disease incidence rates are commonly calculated from data based upon laboratory test results for reportable infections. However, unless the entire population is routinely screened for infection, there is no means to calculate a true incidence rate, which requires that a population 'at risk' (initially free of infection) can be identified. Thus, depending on screening practices or how readily volunteers seek testing, the data may lack precision as a measure of incidence.

Incompleteness: Some segments of the population may be left out of the data. This may be due to chance (i.e. sampling error) or result from known or unknown biases in
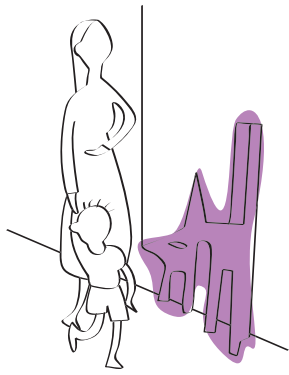
the way data are collected. For instance, telephone surveys exclude the homeless and households with no telephones; hospital data exclude those who do not seek care or lack access. If the health issue under study could be very different for those left out compared to the whole population, the findings may not apply to all. Explain to readers how much of the population the data relate to, who is left out, and whether the health concern for that group is known to be different from that of the population you wish to describe, or if the group is small enough that differences are not likely to affect the overall rate.

Inconsistency: Changes in definition, data collection, or variables reported can limit the ability to compare data over time. Standard and consistent methods over time and between jurisdictions simplify analysis and planning.

Each set of data will have benefits and limitations. Often we rely on the best available data, providing cautionary or qualifying statements, where appropriate, to guide readers in the interpretation of the results.

Sub-populations not included in health-related data may be of critical interest to the profile.

For example, if hospitalization data from small rural hospitals are routinely excluded, but rates of illness are high in those regions, the results would underestimate a vital health concern for rural populations.
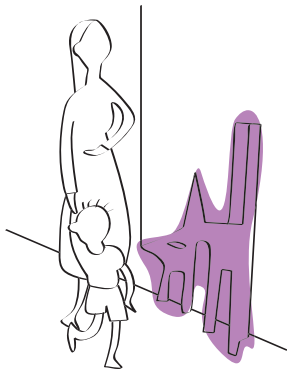
Example | Diabetes in Belize

This example is based on data generously provided by The Ministry of Health for Belize, which is committed to implementing standards to develop and maintain consistent, reliable and accurate data. The example is not intended as a critique of this data, but as an illustration of what data limitations may relate to the purposes of a Gender and Health profile.

First, provide a description of the data:

This analysis is based on health administration data on **hospitalization for diabetes,** and on **deaths related to diabetes and population estimates** derived from the vital records system, reported for 2001 through 2005. They are derived from an annual report on health data for Belize, produced by the Ministry of Health, which gives data on national aggregates, age, district and sex [3]. All computations were prepared by Prairie Women's Health Centre of Excellence and the responsibility for the use and interpretation of these data is entirely that of the authors.

Provide a definition of the health indicator(s), perhaps in a sidebar or footnote. Add any comments regarding data limitations.

Rates of diabetes that are based on data for only hospitalized cases are likely to underestimate the prevalence of diabetes in the population, as many diabetics show no outward symptoms of disease and American research has estimated that 30% of diabetes may be undiagnosed [4]. As well, some segments of the population may have greater access to hospitals (women

versus men), which may be distinct from their risk of disease. Caution should be taken in using prevalence data to interpret trends in the risk of diabetes in the population, as the data cannot distinguish between new and repeated admissions to hospital for the same individual. These data do not distinguish between type 1, type 2 and gestational diabetes, which limits the specificity of this analysis.

Questions to consider for further data description:

→ Among men and among women, what is the possible percentage of undiagnosed disease?

→ Which sub-populations, who may have high rates of diabetes, are not included in these data?

→ Are institutionalized populations or those who receive care in private hospitals covered by the diabetes data?

→ Do the values include both Type I and Type II diabetes diagnoses? Do they also include cases of gestational diabetes? How might this affect your interpretation of findings regarding diabetes?

→ As the hospitalization data provide counts of "cases" defined as a hospital admission, is any correction applied to remove repeated hospitalization within the year for the same individuals?

→ Are diabetes related deaths identified according to a primary cause of death alone, or also as a contributing cause?
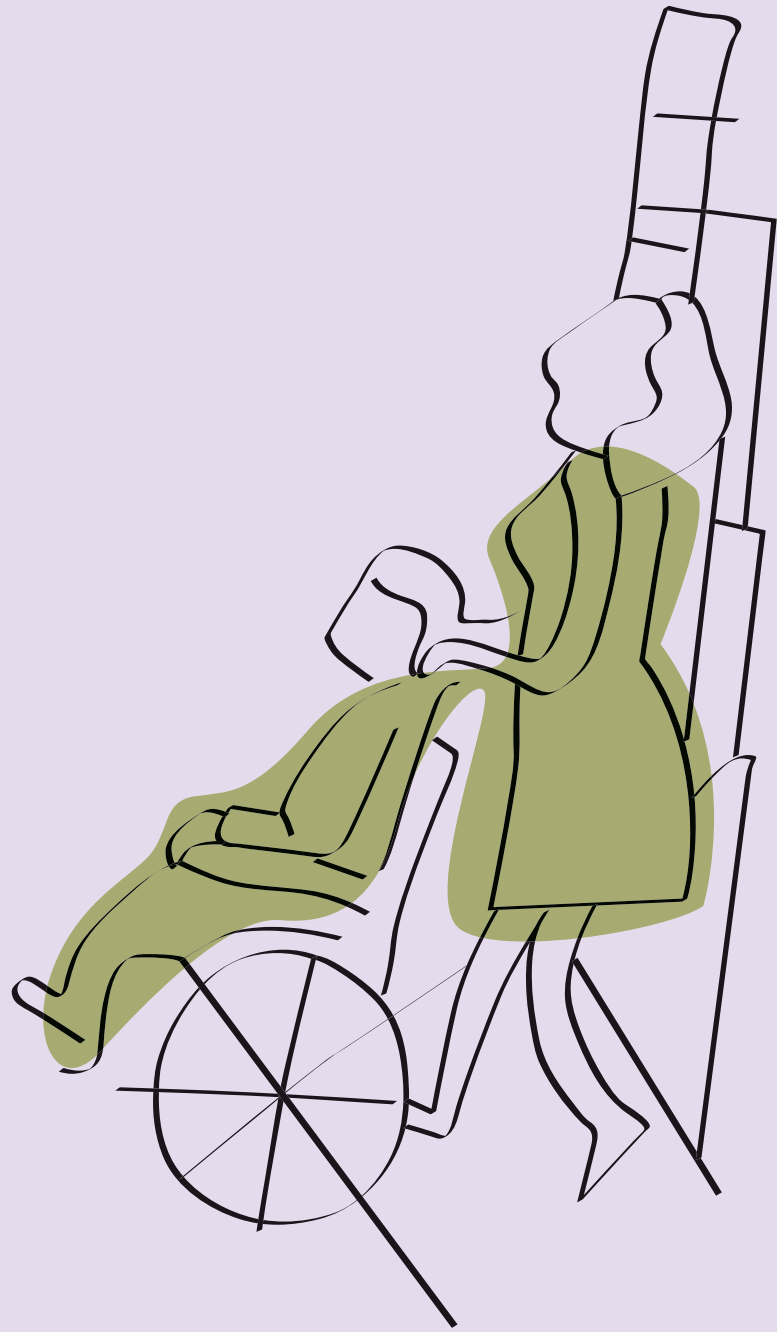
step 3 Gender-based analysis and presentation of data
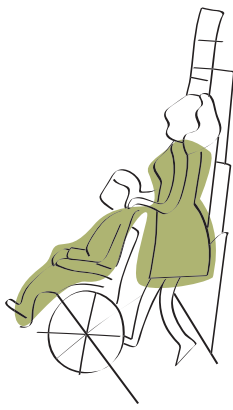
Step 3 | Gender-based analysis and presentation of data

Several statistics are commonly used in a presentation of numerical data, each serving a purpose in the analysis of a health issue. The presentation of the data should be a blend of charts and written explanations. Charts and graphs provide clear illustration of the information, but readers often require some explanation about what is being shown. Ideally, there should be a mix of charts and other figures throughout the text and description.

It may be helpful to include each of these statistics (Table 1) in your presentation of an indicator. In a gender-based analysis it is important to present these statistics by sex whenever possible.

Table 1: Statistics used in the presentation of data

Statistic	Description	Formula
Count (frequency)	Number of cases or events, e.g. deaths, hospital admissions, diagnoses, households with low income, individuals with high school diploma	$= d$
Crude rate	Number of cases or events divided by the number of individuals in the total population	$= d/n$
Age-specific rates	Number of cases for individuals in an age group divided by the population in that age group	$r_i = d_i/n_i$ where 'r' is the age-specific rate for one age group and 'i' represents any number of age groups
Age-standardized rate*	The rate that would occur in the populations being compared if they shared a standard age composition (a standard population), to which their age-specific rates were applied. When male and female populations are compared, the standard population is often the total population (male + female).	$= \dfrac{\sum (r_i * N_i)}{\sum N_i}$ where r_i is each age-specific rate in the population being compared; N_i is the population size for the corresponding age group in the standard population; $\sum$ signifies addition of values over all age groups

Note (*): The age-standardization methods described represent the so called Direct Method of Standardization.

Counts: sometimes called frequencies, simply enumerate cases or events of interest for the population under analysis (e.g. number of cases in women and in men). They are concrete and easy to relate to other variables in health care or community planning.

For example the number of hospital beds, medication or staff needed; 60% of cases may require 60% of available resources. However, it is not appropriate to compare counts of cases between populations which differ in size.

Converting counts to rates adjusts for population size and simplifies comparison. Rates also present information in terms of the likelihood or probability of the event occurring (e.g. if the rate is 4.7 per 100,000, nearly 5 people in every 100,000 are expected to be affected).

Crude rates are quick and easy statistics that help to assess the general burden of disease and trends. Counts and population totals, on which crude rates are based, are often included in an appendix to the profile, allowing readers to perform their own calculations and confirm your results. Crude rates cannot show important differences in risk among populations or sub-groups within the population. Age is often the most important variable that affects risk. If possible, provide information about and analyze differences in the age composition among women and men, and other groups compared. Where the age composition of populations differs substantially, more in-depth analysis will be needed.

Age-specific rates provide more information on the influence of age on the risk of health issues or health determining factors. They are often calculated for a full range of age groups within a population, but may also highlight rates for one age group that is at risk or at greater risk for a health issue (e.g. women of child-bearing age for rates of maternal mortality, young adult males for heavy drinking or other risky behaviours).

Age-standardized rates are necessary when the disease or topic under consideration may be affected by age and when the populations being compared (women and men or a population compared over time periods) differ in age composition. Age standardization is a statistical procedure that removes the influence of age on rates being compared and more clearly shows actual differences between populations for the issue under analysis. Analysis of age-specific rates and the age composition of the populations, as well as knowledge of how the disease or condition may relate to age, will help determine whether rates should be age standardized.

Whether crude or age-standardized rates are used, your analysis and presentation of data will likely include comparisons across other sub-populations of interest (e.g. districts, ethnic groups, income groups, if available) among women and among men.

Sex ratios, presented by age group, are helpful illustrations of differences in the age-sex composition of populations.

Number of females ÷ Number of males

> 1 indicates more females than males
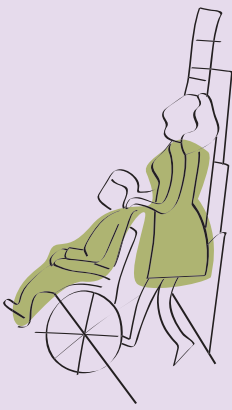< 1 indicates fewer females than males

In many populations, larger numbers of women are found in the oldest age groups. More women may also be found among young adults when male deaths are common (e.g. due to accidents).

Where other age-specific sex ratios do not equal 1, this may reflect past inequities in the health of women or men.

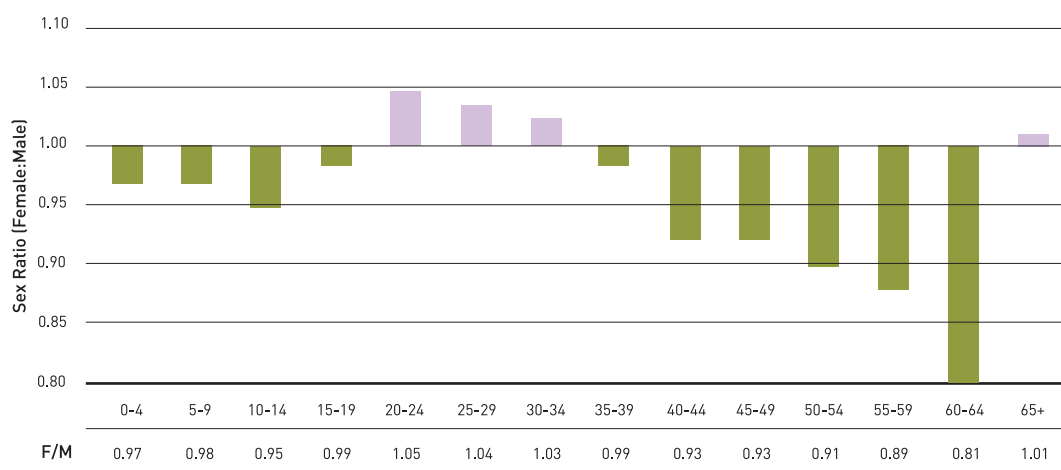# Example | Gender-based analysis and presentation of data

Though there are many ways to present data, the following provides one example of a logical progression, from basic to more complex, of the suggested statistics and their analyses.

It may be helpful to begin with an analysis of the age-sex composition of the population. This information will be useful in deciding whether age-standardization should be performed or whether to qualify certain results. Although you could include the information in your presentation, it may not be necessary.

Population, age-sex composition

The population of Belize in 2005 was approximately 291,800, comprised of 147,400 men and 144,400 women. Thus, the overall sex ratio (females to males) was 0.98. Figure 1 provides sex ratios by age, which show slightly greater numbers of young women (20-34) than young men. This may reflect higher mortality for young men or shortfalls in population counts, which can result from men's greater mobility. There are also more middle-aged and older men than women, though there are slightly more women among the oldest individuals.

Figure 1. Sex Ratios for Belize Population by Age, 2005

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
F/M	0.97	0.98	0.95	0.99	1.05	1.04	1.03	0.99	0.93	0.93	0.91	0.89	0.81	1.01

Note: Sex ratio equal to 1 signifies equal numbers of males and females; greater than 1 signifies more females than males; less than 1 signifies fewer females than males.
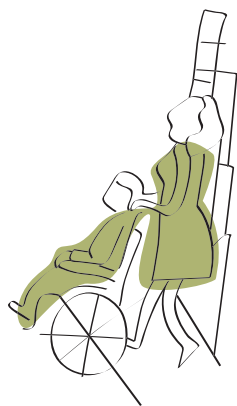
Hospitalization for diabetes

In 2005, there were 542 cases of diabetes trea-ted in Belize hospitals (see Table 2). Of these, 343 or 63% were cases of diabetes in women; the remaining 199 cases were in men.

Rates of hospitalization for diabetes represent conservative estimates of the prevalence of diabetes in the population, for reasons explained earlier. However, we might expect that at least 186 out of every 100,000 people in Belize has diabetes, but that in the same number of women we might find 238 diabetics. Comparing crude rates, women in Belize have a 76% greater likelihood of hospitalization for diabetes than men.
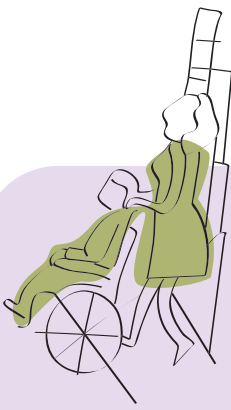
Table 2: **Hospitalization for diabetes by sex, Belize 2005**

	Number of Cases	Crude Rate	Age Standardized Rate
Women	343	237.5	242.0
Men	199	135.0	133.1
Total	542	185.7	185.7

Notes: Rates are expressed per 100,000 population (women, men, total) The 'Total' population (women + men) of Belize for 2005 is used as the standard in the calculation of age-standardized rates.

However, crude rates may underestimate the burden of diabetes among women be-cause, in the Belizean population, there are fewer women than men in middle-aged and older age groups, the age range in which the risk of type 2 diabetes is highest. Thus, age-standardized rates, which remove the influence of differences in age structure bet-ween female and male populations, should be included in this analysis.

Age-standardized rates show slightly greater sex differences in rates of diabetes; women are 82% more likely to be hospitalized for diabetes (see Figure 2). Thus, in Belize, women are much more likely than men to be hospitalized for diabetes. However, it remains unclear whether this reflects a higher burden of disease among women, which may be linked to women's additional risks for gestational diabetes, or that women have a greater likelihood of receiving care in hospitals.

Figure 2. Age-Standardized Rate of Hospitalization for Diabetes, Belize 2001-2005

	2001	2002	2003	2004	2005
Male	100	104	121	113	133
Female	186	216	275	261	242

Note: The 'Total' population (women + men) for 2005 is used as the standard in the calculation of age-standardized rates.

Over the past five years (2001-2005), the rate of hospitalization for diabetes has been consistently higher for women than for men. Overall, rates have increased for both women and men (by 30% for women; 33% for men), though for women rates have declined somewhat in the past two years, while rates for men continue to climb.

Hospitalization by sex and age

Rates of hospitalization for diabetes increase dramatically over the life course. Figure 3 shows the age-specific rates of hospitalization in Belize.

Figure3. Age-Specific Rates of Hospitalization for Diabetes, Total Population by Age, 2005

	0- 4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Rates	9.5	10.0	42.8	40.5	53.9	57.0	111.6	162.0	248.1	546.5	779.4	1150.0	1136.4	1298.0
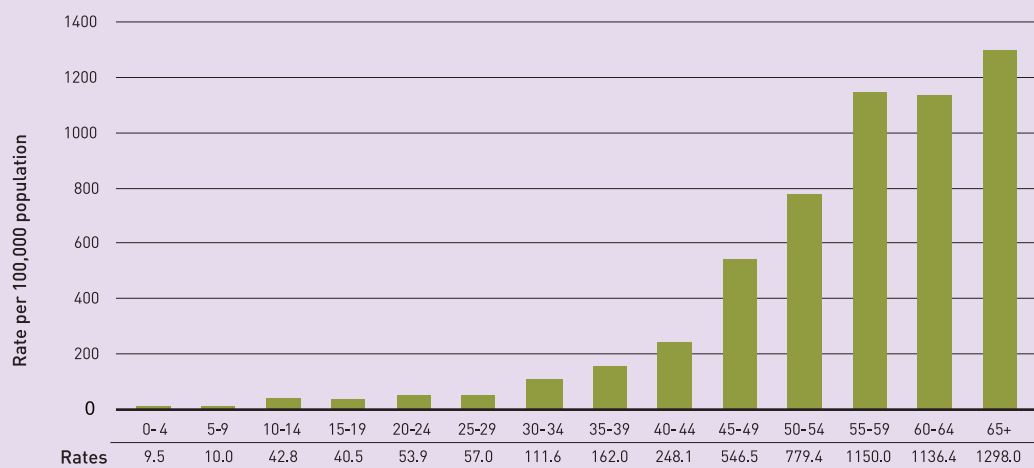
When we contrast this with sex-disaggregated data (see Figure 4), we find that rates of hospitalization for diabetes are higher for women than men in all age categories.

Figure4. **Age-Sex Specific Rates of Hospitalization for Diabetes, 2005**

|	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Male	4.7	4.9	20.9	37.2	47.2	35.7	82.2	114.9	183.1	240.5	579.3	984.7	711.6	1018.9
Female	14.5	15.2	65.7	43.9	60.2	77.6	140.3	209.8	317.9	875.6	1000.0	1335.9	1659.0	1573.4

Rate per 100,000 population
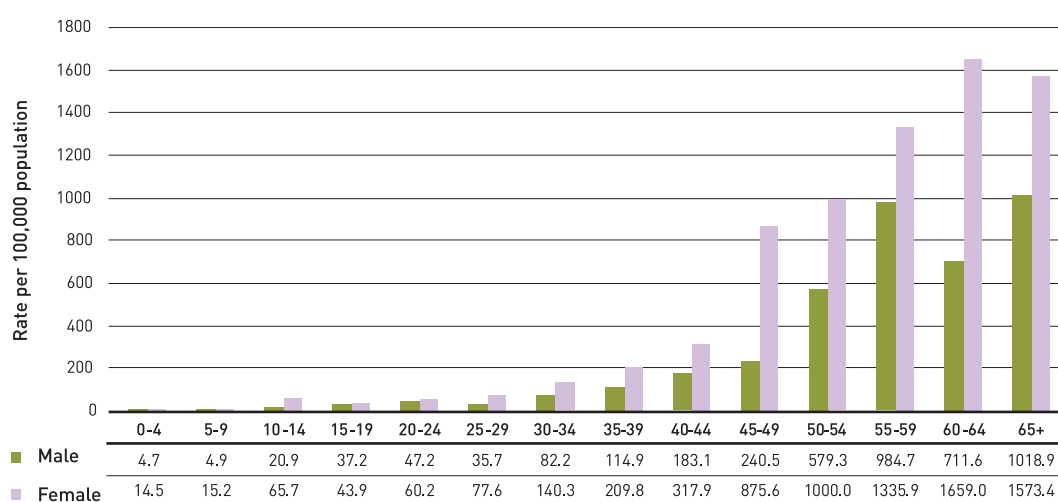
Women in the middle and upper age range have rates of hospitalization for diabetes that are, on average, twice that for men. Women aged 45 to 49 and 60 to 64 appear to have particularly high risk relative to men of the same age (3.6 and 2.3 times higher, respectively). Women's higher rates of hospitalization may also reflect their more frequent contact with the health system, particularly for women who seek reproductive health care services. Also, higher rates of diabetes in the 45 to 49 age range for women compared to men may be a consequence of their having had gestational diabetes during pregnancy, which increases the risk for developing type 2 diabetes.
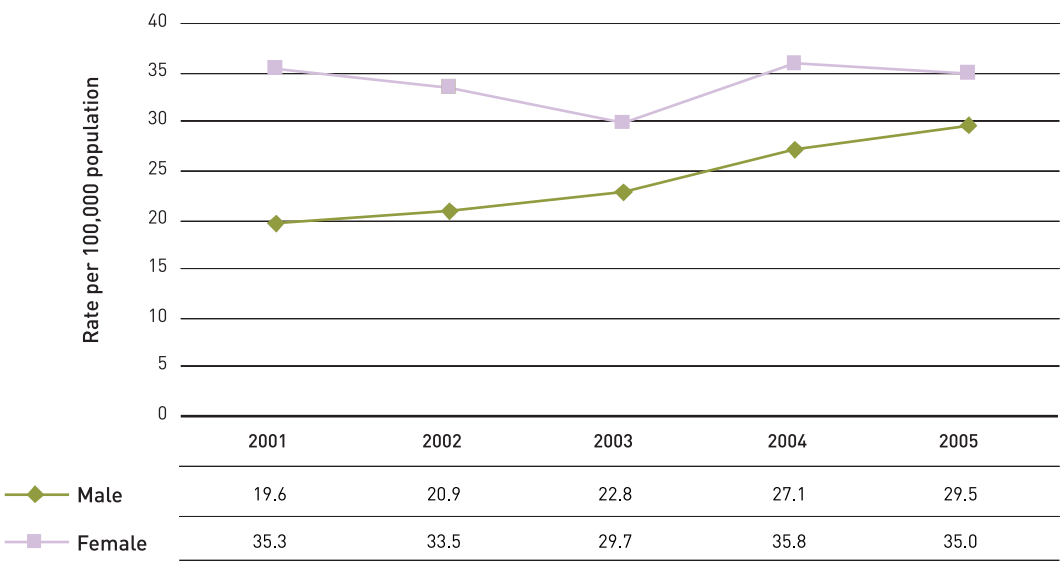
Mortality

Although women are more likely to be hospitalized for diabetes, it is unclear to what extent this reflects higher risk of diabetes, poorer outcomes, or greater access to care in hospitals compared to men. Rates of death related to diabetes may tell us more about whether women's higher rates of hospitalization prevent them from dying from diabetes.
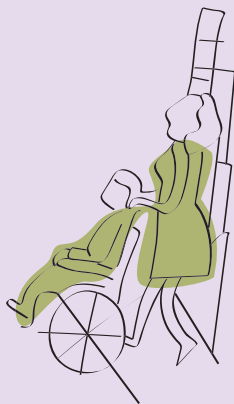
Of 559 women who died in 2005 in Belize, 50 died from diabetes; diabetes accounted for 8.9% of deaths among women. Among the leading causes of death for women in Belize, diabetes ranked second only to hypertensive disease. For men, 44 of 810 deaths, or 5.4% of deaths were attributed to diabetes. Relative to other causes of death for men, diabetes holds much less importance than for women; HIV, injuries, heart disease and transport accidents all rank higher than diabetes among the leading causes of death for men.

Age-standardized diabetes mortality rates for 2005 show that 35 women in every 100,000 died of diabetes, which was somewhat higher than men's rate of 29.5 deaths per 100,000.

Figure5. Age-Standardized Rates for Diabetes-Related Deaths, Belize 2001-2005

Rate per 100,000 population

	2001	2002	2003	2004	2005
Male	19.6	20.9	22.8	27.1	29.5
Female	35.3	33.5	29.7	35.8	35.0

Note: The 'Total' population (women + men) for 2005 is used as the standard in the calculation of age-standardized rates.

Looking back over the previous five years, it appears that although women consistently showed higher rates of death from diabetes, a trend of increasing mortality among men has narrowed the gap considerably since 2001, when death rates had been 80% higher for women than for men. During this period, there is no clear pattern of decline in women's rate of death from diabetes. Thus, despite their higher rates of hospitalization, women are still more likely to die from diabetes than men.
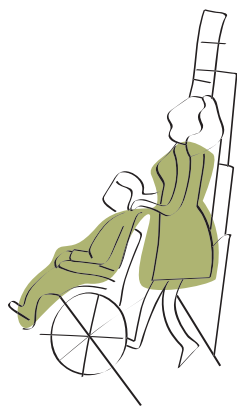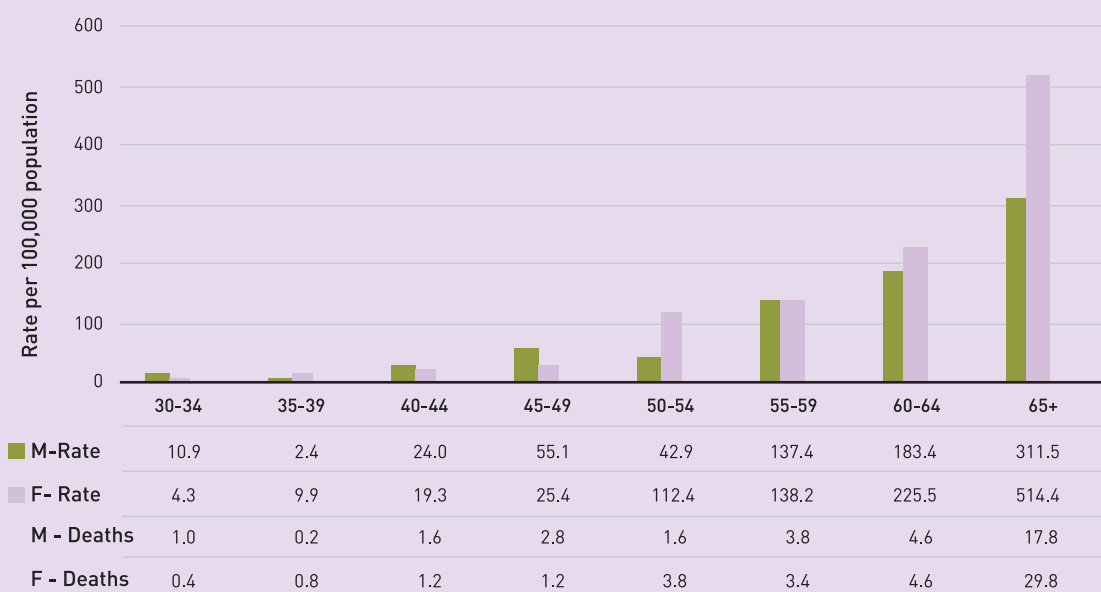
Mortality by sex and age

On average, five or fewer deaths related to diabetes occur each year among women and men under age 65 (Figure 6). However, middle-aged and older women are more likely to die of diabetes-related causes than are men. Senior women (age 65+) have an especially high risk of death due to diabetes, with a death rate that is 65% higher than for men (514.4 versus 311.5 per 100,000).

Figure6. **Five-Year Average Mortality Rates for Diabetes Related Death by Sex and Age (30+), Belize 2001–2005**

|	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+
M–Rate	10.9	2.4	24.0	55.1	42.9	137.4	183.4	311.5
F– Rate	4.3	9.9	19.3	25.4	112.4	138.2	225.5	514.4
M – Deaths	1.0	0.2	1.6	2.8	1.6	3.8	4.6	17.8
F – Deaths	0.4	0.8	1.2	1.2	3.8	3.4	4.6	29.8

Questions to consider for further analysis:

→ To what extent do observed differences in hospitalization rates between women and men reflect differential access or 'exposure' of men and women to the health care system?

→ Are there any changes in service delivery that account, to some extent, for the apparent increase in rates of diabetes?

→ What factors could account for increasing rates of death from diabetes, despite increasing rates of hospitalization (presuming this indicates improved access to health care services)?
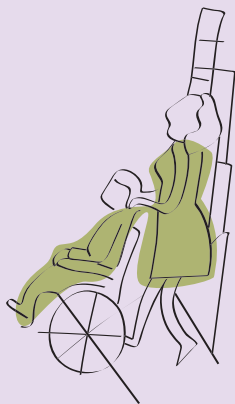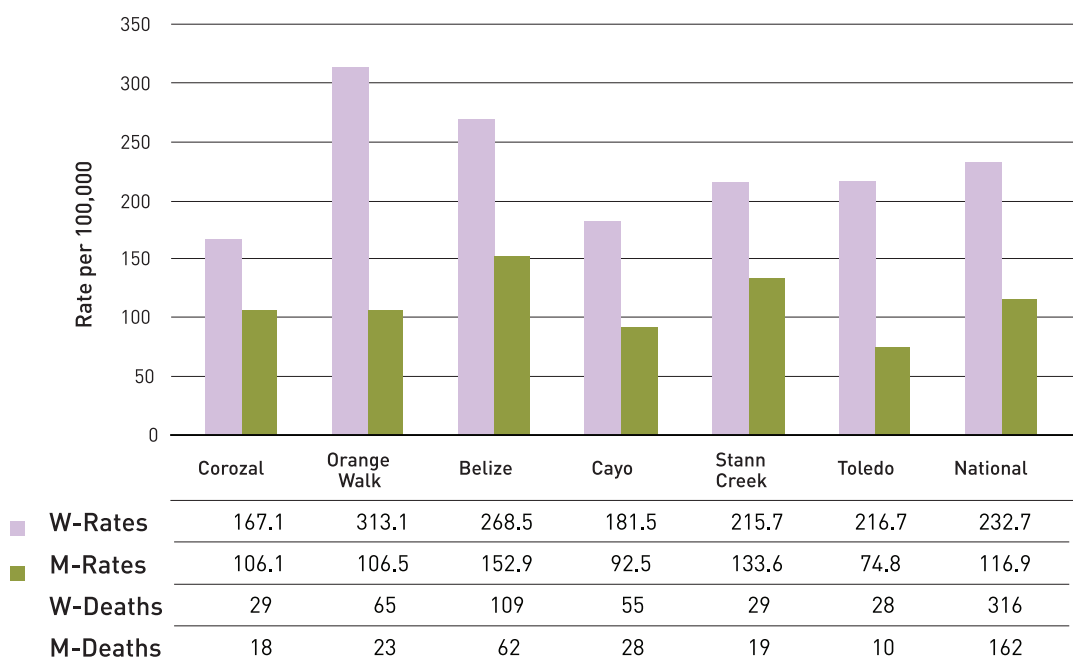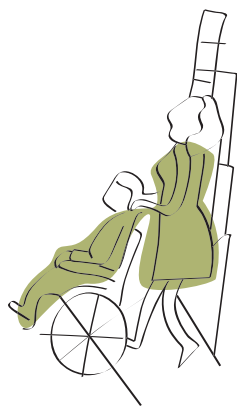
→ What factors may contribute to older women's higher rates of death from diabetes compared to men, and increasing rates of death among men?

Geographical diversity

District-level comparisons by sex show that women are consistently more likely to be hospitalized for diabetes (Figure 7) and to die from diabetes-related causes (Figure 8) than men in all districts of Belize

Figure7. Five-Year Average Rates of Hospitalization by District, Belize 2001-2005

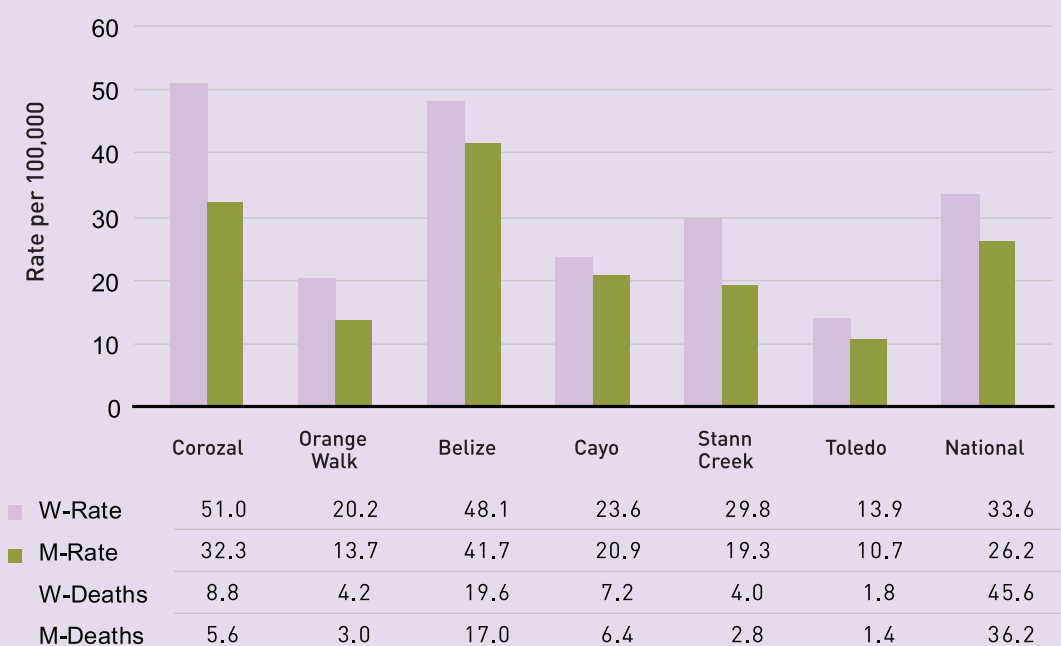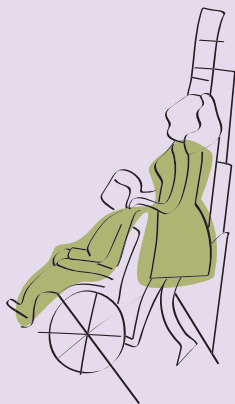|	Corozal	Orange Walk	Belize	Cayo	Stann Creek	Toledo	National
W-Rates	167.1	313.1	268.5	181.5	215.7	216.7	232.7
M-Rates	106.1	106.5	152.9	92.5	133.6	74.8	116.9
W-Deaths	29	65	109	55	29	28	316
M-Deaths	18	23	62	28	19	10	162

Women living in the Orange Walk and Belize districts had higher five-year (2001-2005) rates of hospitalization for diabetes than the national average for women. Compared to men living in the same district, women in Orange Walk were approximately three times as likely to be treated in hospital for diabetes. Among men, Belize district and Stann Creek residents had a higher burden of diabetes.

A different pattern emerges for district-level rates of death related to diabetes. Women living in Corozal and Belize districts were most likely to die of diabetes (51 and 48 deaths per 100,000 population, respectively). For both women and men, five-year average rates of death in these districts were about two or more times the rates recorded in most other districts. Women in Corozal also had a higher risk of death due to diabetes relative to men than women in other districts

Figure8. **Five – Year Average Diabetes Mortality by District, Belize 2001 – 2005**

|	Corozal	Orange Walk	Belize	Cayo	Stann Creek	Toledo	National
■ W-Rate	51.0	20.2	48.1	23.6	29.8	13.9	33.6
■ M-Rate	32.3	13.7	41.7	20.9	19.3	10.7	26.2
W-Deaths	8.8	4.2	19.6	7.2	4.0	1.8	45.6
M-Deaths	5.6	3.0	17.0	6.4	2.8	1.4	36.2

Questions to consider for further analysis:

The district-level data raise many questions, which could be addressed in further analysis.

→ Can differences in diabetes treatment and mortality between districts be attributed to differences in lifestyle factors between districts, e.g. the availability of convenience foods with low nutrient value or patterns of work and recreation that encourage physical activity?

→ How do district and sex differences in levels of poverty and food security contribute to the observed differences in rates of diabetes hospitalization and death?

→ Do districts differ for the size of any population with genetic vulnerability to diabetes?

→ To what extent are differences in rates of hospitalization for diabetes in the districts due to differences in the availability of treatment, or service type, e.g. is there more out-patient care than hospital admission in some districts?
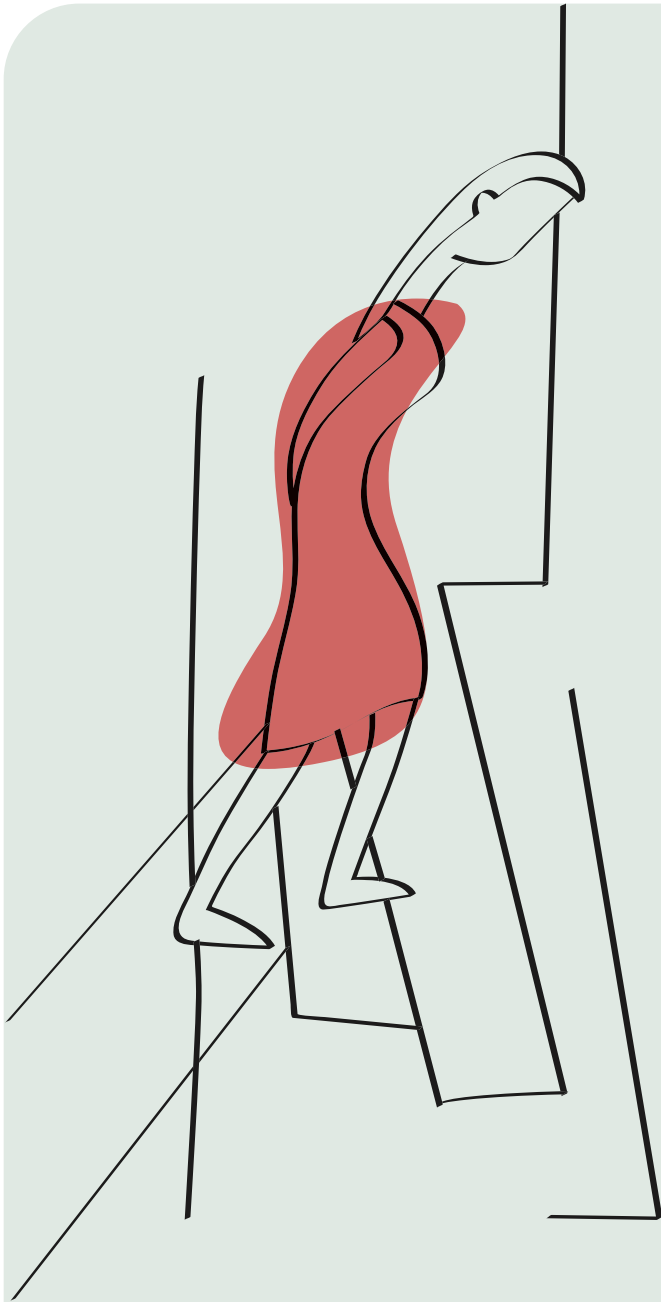
step 4 Gender-based analysis of the literature and discussion
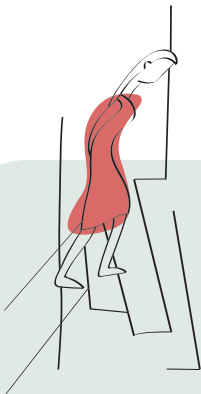
Step 4 | Gender-based analysis of the literature and discussion

The next step is to describe what else is known about the indicator using published literature, and other sources of information. The review of literature will gather information on:

→ findings from other studies concerning the indicator, to allow inter-regional or international comparisons of rates for women and men, and

→ knowledge concerning factors that contribute to women's and men's different experiences and outcomes for the indicator, including the biological, social (e.g. roles, power differences) and systemic (e.g. health service system) factors that interact with the indicator.

Does the literature support the results of your data analysis or suggest other or new information?

What does the literature say about factors contributing to women's and men's distinct experiences and outcomes for this health topic and indicator?

Does the literature adequately address the influence of gender?

Can local women's or men's experiences provide more information?

Also, the literature review may provide information that can inform other parts of the profile. For example, it may provide critiques of the data available (Step 2) or recommend strategies and policies (Step 6) that have been effective in other jurisdictions.

Succinctly describe the current research on the indicator and topic and discuss its implications for the population under consideration. Note where there is a lack of literature based on sex-disaggregated data or on gender distinct influences on the health topic. Consider how community groups and local experts can inform your analysis of women's and men's experiences of the health issue. Every additional piece of information should be assessed to see if it is relevant to the discussion and contributes to real understanding of the issue. Be sure to fully cite all literature and reports used.

Inter-regional and international comparisons

Compare the results of your data analysis with those from other jurisdictions, making allowances for any difference in definitions, data collection methods, and data quality issues. Do other studies confirm your findings, or suggest other or new information?

Factors contributing to gender and sex differences in the indicator

Factors influencing women's and men's experiences and outcomes for the indicator will be unique to each health issue. However, the following areas and questions may guide an exploration of the literature and the presentation of discussion content.

→ **Risk:** Consider risk factors for the health issue, viewing risk in relation to both biological factors and social determinants of health. How do women and men in the population differ in their exposure to these risks? How do gender relations within the household, community, workplace and the

economy affect risks for women and for men? How do differences in access to power and resources affect risk? How do gender roles, including women's unpaid work and care giving roles, affect risk?

→ **Symptoms and illness experience:**
Illness experience varies according to biological, social, or psychological differences and has implications for women and men's self-perceived health, ability to carry out their roles, and their likelihood to seek help or health care. Consider how women and men differ in their experience of the health issue. Do symptoms differ in type or severity; does illness progress differently? Also consider how women's and men's experiences of illness are perceived by health care practitioners. Are the experiences of women and men considered equally valid? Could gender biases in the recognition of women's and men's symptoms influence diagnosis?

→ **Intervention and treatment :** Health care interventions vary not only in response to sex differences in health between women and men, but also in response to gendered interactions between clients and professionals. Consider whether health professionals respond differently to men and women's illness. Are women and men equally likely to be targeted for prevention, receive treatment or rehabilitation supports? Are women or men over-prescribed medications or less likely to receive referral for surgery? Are interventions gender-sensitive and appropriate, given the evidence of differences in the experiences of women and men?

→ **Service or resource utilization:**
Similarly, gender influences the behaviour of health consumers. Women and men differ in the likelihood that they seek health care or other services, when they seek services, and the types of interventions they will use. Consider whether men and women use health services to the same degree or at same stage of illness. In light of women and men's different roles, their needs may differ for supports and services. How do women's and men's health needs differ by age and stage of life? Do differences in how men and women use health services affect their health status for this issue?

→ **Outcomes:** While the data description will have demonstrated certain differences in women's and men's outcomes, often these results only describe outcomes of clinical disease and death. The literature may be used to broaden the understanding of other types of health outcomes and their differences in men and women. For example, information on quality of life, prevalence of complications, disability and functionality issues, add greater depth to the analysis. These aspects may be more sensitive to gender differences than the 'end states' of disease and death.

→ **Diversity:** The diversity among women and among men should be addressed in the analysis. What does the literature say concerning variation in the indicator among women and among men? Are some populations more vulnerable? What is the effect of ethnicity on women's and men's access to power, resources and health care? Are there differences for urban, suburban, rural, or remote populations? How does the health indicator vary by income and class among women and men?
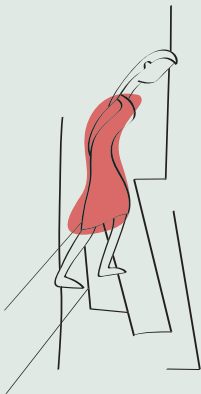
Example | Diabetes in Belize

The analysis and discussion may begin with comparative data analyses. How do data from other nations help to highlight the importance of diabetes among women and men in the region and in Belize? Are rates for women in Belize comparable with those for other Latin American, Caribbean, or North American countries? Are there similar differences between women and men in other regions?

Table 3 shows estimated sex-specific death rates for diabetes-related causes from 14 selected nations among 42 American countries for which rates were available. Published rates for Belize (35.5 per 100,000 for women, 21.3 per 100,000 for men) were comparable to the results of the analysis found in this example (average rates of 33.6 and 24.1 per 100,000 for women and men, respectively). Comparison across 42 American nations showed that death rates for women in Belize were more likely to be greater than the rates for women in other nations than were men's rates of death. Also, sex-differences in diabetes deaths tended to be relatively high in Belize. Only five countries reported higher sex ratios (Female/Male) for diabetes mortality than Belize, where women were 1.7 times as likely as men to die from diabetes-related causes [5].

Table 3. **Estimated death rate1 from diabetes. Selected nations in the Americas. 2001-2005[2]**

	Females	Males	Ratio F:M
Cayman Islands	10.2	16.0	0.6
Canada	24.9	25.5	1.0
United States	25.1	24.2	1.0
Guatamala	75.6	69.3	1.1
Mexico	75.6	69.3	1.1
Costa Rica	20.4	15.7	1.3
Ecuador	28.0	20.8	1.3
Montserrat	152.5	113.5	1.3
Nicaragua	39.5	28.8	1.4
Panama	38.5	25.5	1.5
Belize	35.5	21.3	1.7
Cuba	24.9	12.4	2.0
El Salvador	35.1	17.0	2,1
Anguila	93.7	15.1	6.2

Source: Adapted from, Gender, Health and Development in the Americas, Basic Indicators 2007, PAHO.
Notes: 1. Rates per 100,000 population. 2. Latest data available

The burden of diabetes is increasing internationally, which confirms short-term trends found in this data analysis. It is predicted that the number of people with diabetes worldwide will more than double over 25 years, to reach a total of 366 million by 2030. Most of this increase will occur as a result of a 150% rise in developing countries. The estimate takes population growth, aging and urbanization trends in developing nations into account [6]. The most dramatic increases in diabetes (type 2) are occurring in regions where there have been major changes in the type of diet consumed, reduced physical activity, and increases in overweight and obesity [7].

Type 2 diabetes accounts for more pre-mature death in developing countries than in many developed nations, where it has generally been considered a disease of the middle-aged and elderly [6]. Not only is type 2 diabetes more common in all age groups than in the past, it is being identified in increasingly younger age groups, including adolescents and children, especially in high-risk popu-lations [7]. Without data disaggregated by type of diabetes, it is not possible to confirm if this is true for Belize.

Hospitalization rates from Belize have shown a relatively large burden of disease among women in the 45 to 65 age range. This differs from the pattern in many nations where women and men generally have similar rates of diabetes until old age (over 65 years), when more women have diabetes [6].

Proceed with a discussion of the published literature, government and NGO reports, or other information, as it applies to your study population. Use the guiding categories and questions to broaden the discussion of gender and diversity, as these experiences apply to diabetes.
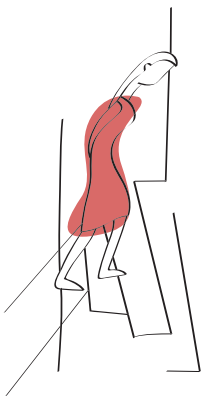
Risk

Women and men have different types and levels of risk for diabetes. Gestational diabetes is one distinct risk factor for women. Although insulin function usually returns to normal after pregnancy, gestational diabetes increases women's risk for developing type 2 diabetes later in life. Also, their babies are often heavy at birth, tend to develop obesity in childhood, and have a higher risk of developing type 2 diabetes at an early age [7].

→ How important is gestational diabetes as a risk factor for diabetes among women and children in the region?

Recent decades have seen a shift from manual labour to more sedentary jobs in the service sector, dietary changes and in-creased urbanization, which increases the use of motorized transportation, computer use and labour saving devices. Women tend to be less physically active than men. Care giving roles and a lack of leisure time are often a barrier to physically active re-creation, but, conversely, women may be active because they care for young children and they are also less likely to use a car for transportation. Men tend to be more physi-cally active in general, and are more likely to have jobs that keep them active [4].

→ How do women's and men's activity levels differ in the region, and how might these differences affect the risk of diabetes?

→ Has an urban shift in lifestyle affected women and men differently?

Overweight is a risk factor for diabetes, and is increasing worldwide. Surveys in Latin America and the Caribbean in 2002 found that 50-60% of adults and 7-12% of children over age five were overweight or obese [1]. Women and men differ in their risks for weight gain and patterns of weight gain over their lifetime. Women's weight changes more over the life course; women are vulnerable to weight gain at puberty, childbirth and after menopause. Cultural ideals for thin or muscular body types influence women's and men's self image and self-esteem. Women tend to engage in chronic dieting more often, resulting in unhealthy weight fluctuations [4].

→ How might sex-differences in body weight affect the observed differences in rates of diabetes among women and men in Belize, and in the region?

Certain ethnic groups carry a genetic predisposition for diabetes. For example, higher rates of type 2 diabetes are reported in people of Asian and African origin, and in indigenous peoples of the Americas and Australasia [6].

→ Are there sub-populations in Belize with a known genetic predisposition to diabetes?

Intervention/treatment

Many women cannot get the care they need or seek because of their domestic responsibilities for children, restrictions in their ability to take time from paid work and the extra burdens of other unpaid work. The availability of specialists may affect the rate of diabetes complications seen.

→ What is the availability of specialists like in different districts within the country?

→ Do women and men differ in their ability to get care from specialists?

→ Are there differences in the health care insurance coverage available to women and men, which may be a barrier to care?

Outcomes

Age-adjusted mortality rates are 1.5 to 2.5 times higher among diabetics than in the general population. However, the contributing cause of death has been found to differ by ethnicity. In Caucasian populations, mortality is often due to heart disease, whereas kidney disease is a major contributor to diabetic-related death of American Indian and Asian populations, and in some African nations, infections are an important cause of death [7].

→ Considering the ethnic diversity in Belize, how can these findings inform screening for complications?

Some research has found that diabetic women

are significantly more likely to have coronary events than are diabetic men and non-diabetic women. Also, women with diabetes may be more vulnerable to depression than men, which may affect coping and the ability to self-manage care [4].

→ What complications, if any, appear more common among men and among women in Belize or in the region?
→ Are their differences in how the disease progresses in women and men?
→ Is diabetes-related disability equally likely to affect women and men?

Diversity

→ What is known about poverty of women and men in the region and in Belize?
→ What do local agencies say about poverty's influence on the experience of diabetes?

These are the kinds of questions (above) that should influence how the results are interpreted and presented using, as suggested here, local information and knowledge to broaden the information given.

step 5 Conclusions and lessons learned
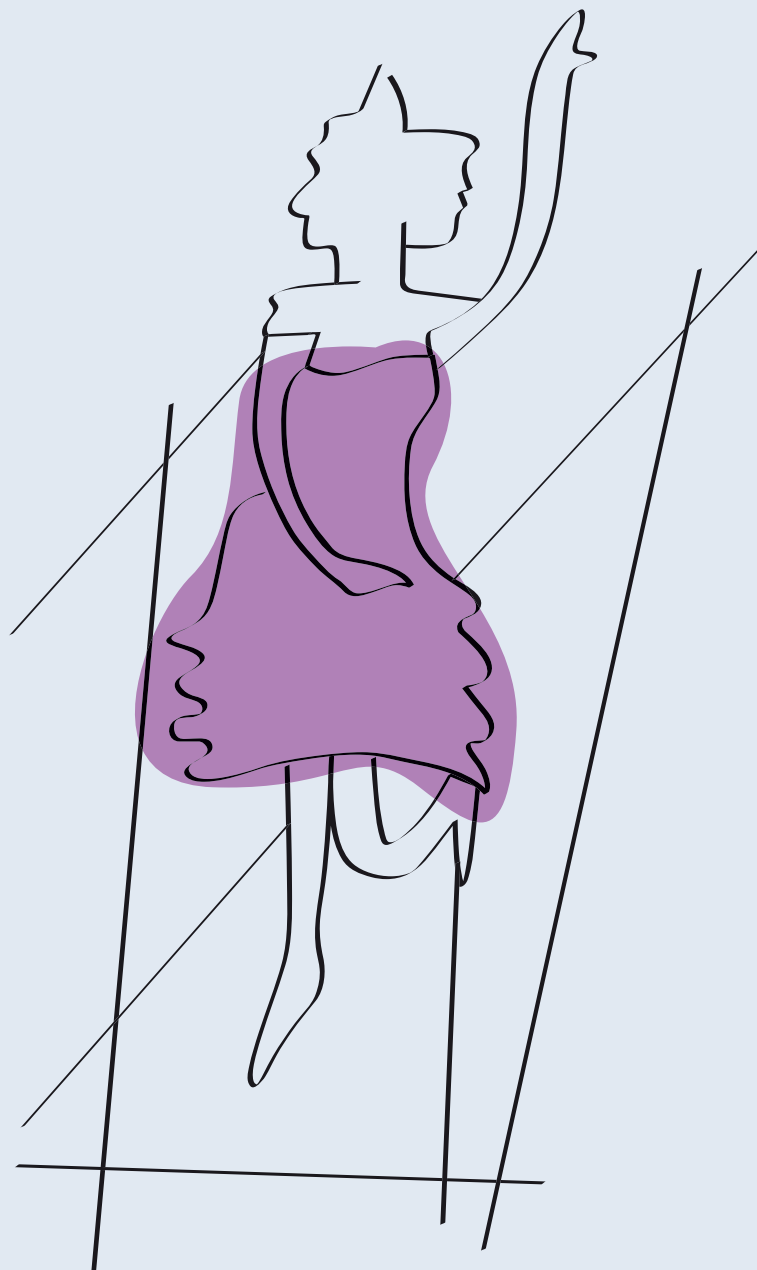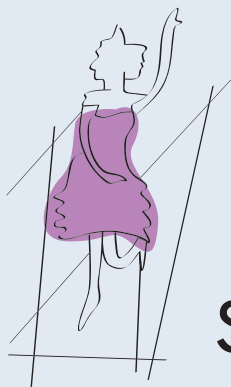
Step 5 | Conclusions and lessons learned

The conclusion is a synthesis of findings for each topic area and its indicators. Describe the combined findings of the quantitative data analysis and the literature analysis to clearly represent the evidence for health inequities and challenges for women, men or sub-groups among them.

Here it may be useful to turn back to an initial purpose, baseline data from previous years or assumptions made at the outset of your analysis. What new information do you now have concerning the topic? What lessons have been learned, what gaps identified? Measurement of health indicators is useful only to the extent that, based on the new knowledge, it is possible to intervene and effect change. Ongoing surveillance of those indicators can then be used to evaluate progress made by the intervention.

The strength of a profile lies in its ability to provide a comprehensive 'story' of women's and men's health, which requires a broad synthesis of many issues and topic areas. Thus, it is beneficial to relate each topic area and its respective indicators to other topic areas, where opportunities are evident in your analysis. If for instance, trends in respiratory diseases are related to changes in tobacco smoking in the population, make sure that the disease indicator is referred to in the tobacco indicator, and also that the tobacco indicator mentions the changes in respiratory disease. If poor housing and sanitation are in the same districts where the profile shows disease outbreaks, help the reader to make those links by mentioning where else in the profile to find related information.

Measurement of health indicators is useful only to the extent that, based on the new knowledge, it is possible to intervene and effect change.

The strength of a profile lies in its ability to provide a comprehensive 'story' of women's and men's health.

Conclusions based on related topics may illustrate larger trends or promote more coordinated and comprehensive planning.

It may also be useful to draw conclusions based on larger groupings of topics. For example, your framework of topics may have included several chronic diseases or a group of topics on socioeconomic determinants of health. Conclusions based on related topics may illustrate larger trends or promote more coordinated and comprehensive planning. Thus, it may be important to note where the analyses have shown increases in several chronic diseases, which share common risk factors, or the co-occurrence of chronic diseases in a sub-population, in which case a coordinated chronic disease prevention strategy may be called for.

Example | Diabetes in Belize

Diabetes is a major health concern in Belize, and is associated with increasing demands on the health care system, as well as long-term health impacts and social, financial and personal costs to diabetics and their families. Although type 2 diabetes accounts for the majority of cases, and is commonly regarded as a disease of older people in many nations, in Belize substantial numbers of middle-aged individuals are affected in their productive years of life.

Similar to findings from other nations, data on diabetes in Belize demonstrate important differences in the burden of disease and outcomes between women and men. In fact, Belizean women have higher rates of diabetes relative to men than in most other American nations. Women are much more likely than men to be hospitalized for diabetes. Women account for nearly two-thirds of cases seen in hospitals in Belize and their rate of hospitalization exceeds that for men by over 80%. Among middle-aged (age 45-49) and older women (especially aged 60-64), rates of hospitalization for diabetes may be twice that of men or more. Gestational diabetes may be an important contributing factor in women's greater prevalence of diabetes in these age ranges. Diabetes is associated with increasing demands for health care. Between 2001 and 2005, rates of hospitalization rose by approximately 30% for women and men.

Although women's higher rates of hospitalization relative to men may reflect their greater contact with the health system (i.e. in association with reproductive health concerns and women's greater care giving role within the family), the mortality data show that women do require more diabetes–related health care. Women, particularly older women, are more likely to die from diabetes-related causes than are men. However, this gap appears to be closing as men's rates of death have been increasing faster than for women in recent years, which may signal unmet needs for health care among diabetic men.

Comparisons by district show that women in Orange Walk and Belize districts are more likely to be hospitalized for diabetes than women living in other districts. Among men, Belize and Stann Creek districts show a higher than average burden of diabetes. However, for both women and men, diabetes-related deaths are most common in the Belize and Corozal districts. Higher deaths rates in these districts may be because clients with advanced diabetes move to those districts where there are more specialists and tertiary care available in the urban centres. However, diabetes may also be more severe in the more urbanized districts, which is supported in the literature.

Further analyses of diversity await the availability of data disaggregated by sex and socioeconomic status and ethnicity, which have been associated with variation in rates of diabetes in other populations.
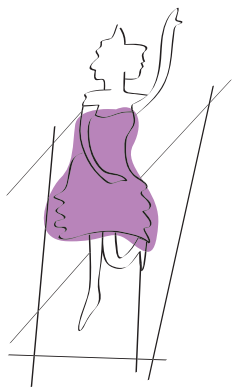
Synthesis

Several other topics that may appear elsewhere in the profile, are naturally related to diabetes. You will want to highlight important findings for women and men from those analyses as they relate to diabetes. For example, what relevant results might be highlighted from indicators on obesity, physical activity levels, nutrition, or smoking among women and men? Other linkages to indicators of socioeconomic conditions or literacy may also be relevant.

Do the results for cardiovascular disease, cancer or other chronic and degenerative conditions, covered in other parts of the profile, illustrate larger trends that also concern diabetes? You may wish to consider these results together in an integrated conclusion on all chronic diseases, or those which share common risk factors.

Many women in Latin America and the Caribbean still have lower levels of literacy than men. Literacy tends to be lower in rural than urban areas, and in poorer than richer areas [1].

These findings may have implications for diabetes education programs
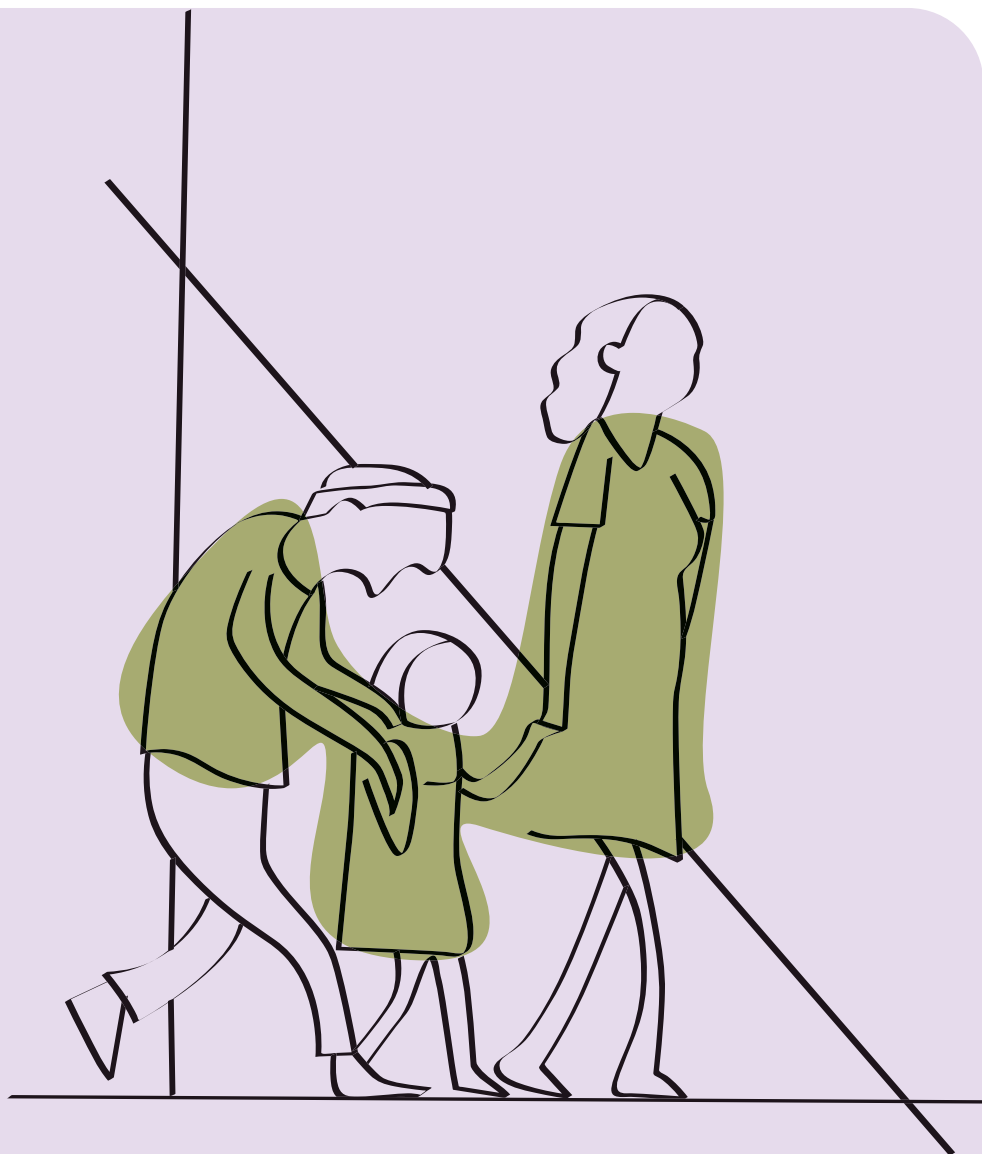
step 6 Policy implications and recommendations
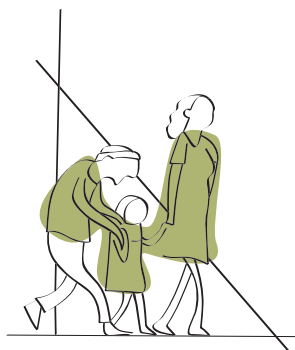
Step 6 | Policy implications and recommendations

The final step for each indicator is a discussion about the policy implications for the indicator. Explain how the gender-based analysis can be used to inform, develop, change or implement policy. This might include changes to health services or infrastructure.

Begin with a brief description of current policies as they relate to the indicator. Use the following questions as a guide:

→ What are the current policies relating to this indicator?

→ Do they prevent or allow men and women to seek care or to take advantage of resources equally?

→ Are there policies outside of the health sector that should be changed to reduce health inequalities?

→ What have community groups and individuals said about the related policy?

→ Do the data and information show that the policy is working to help the population and improve health?

Use the information now assembled in the profile to make specific recommendations for policy that should or could be strengthened or changed. Identify the relevant decision-making authority to which the recommendations will be made.

Here are some areas where there may be recommendations:

Indicator data

→ Are the data collected providing information that is needed to understand the health issue as it affects women and men? For instance, should financial or income data be collected for each person or for each household?

→ Are the data reported to the same level of detail as they are collected?

→ Should the data collected for the indicator be broader? For example, would hospital readmissions provide more information about morbidity rates for the disease or condition?

→ Should the data be collected and reported for a different time span, or for different age categories? Are there sub-populations routinely missed in the data that should be included?

→ Is there an adequate infrastructure for surveillance for the indicator?

Health promotion

→ What does the gender-based analysis show about where health promotion efforts and initiatives should be directed? Is one sex, age or ethnic group particularly vulnerable?

How can health promotion and public education be directed to reduce health inequities for that part of the population? For instance, perhaps public education posters are not in a local language or are too complicated to read and understand.

→ How effective are screening programs? Are they reaching the most vulnerable members of the population? Should there be different screening programs for rural or urban women and men? How can men be reached? Would it be helpful to screen women if they are coming for care for their children? How will women without children be reached? How can elderly women and men be reached in rural and urban areas?

→ How can local women and men be consulted? Are policies in other sectors supporting health promotion? What about food security policies, or local transportation, school fees or taxation policies,

for example? How is income assured for the most poor? Is violence against women and girls tolerated or ignored?

Infrastructure in health and other sectors

→ Do the data and other information show that there are enough doctors, nurses, or other health care workers available? Do these health care workers need training to understand gender-specific or gender-sensitive treatments and care?

→ Are there coordinated interventions across sectors?

→ What are the barriers to reducing health inequities? What initiatives have been successful?

These are just some examples of possible areas for policy change that can improve health and reduce inequities.
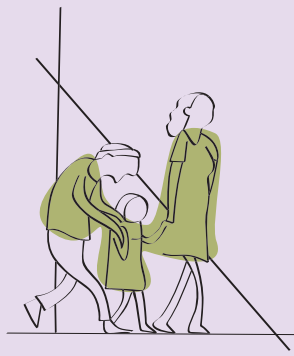
Example | Diabetes in Belize

Describe current policies in Belize. What are the current standards for diabetes care and prevention? Are diabetics who receive treatment in primary care units screened for complications? Do diabetic patients receive education to help them manage their condition and prevent complications? Have health promotion programs been designed to address key risk factors for diabetes in the population? Are the costs of prescription drugs covered by a public insurance program? Are home care supports or other community-based supports available to help diabetics with day-to-day self-care?

> Physicians, health educators, nurses, and lay persons are trained in the nutritional management of obesity, diabetes, and hypertension [8]. Through interactions between health care providers and clients, the program may also build knowledge among people living with diabetes, and their families.

> As a health promotion initiative, the Ministry of Education introduced the Health and Family Life curriculum, and produced training guides for primary and secondary schools. The curriculum, which is being piloted in 12 schools in six districts throughout the country, focuses on nutrition and physical activity, among other important health issues for children and youth [8].

Identify any gaps or present critiques from community groups that show how existing policies may contribute to health inequities.

Provide recommendations for data collection and reporting to help improve surveillance:

→ Collect separate data for type 1, type 2 and gestational diabetes.
→ Collect data on the ethnicity and socioeconomic status (e.g. income, education) of women and men with diabetes.
→ Report data on diabetes complications for women and men with diabetes.
→ Gather data representing an earlier stage of diabetes (e.g. physician consultations and diagnoses, prescriptions for diabetes medications) in order to measure preventable disease. The success of programs can be evaluated in relation to these data.
→ Strengthen surveillance of diabetes risk factors; report these data by sex.
→ Gather qualitative data, with support from community-based agencies, on the experiences of women and men with diabetes.

Conclusions drawn from the gender-based analysis of diabetes may have shown the need for new or modified policies. Provide recommendations based on those results. (The following recommendations are made without full knowledge of current policies in Belize and are only meant to give illustrations.)

→ Increase awareness of the effectiveness of primary prevention for diabetes. Increase programs to prevent and delay the onset of diabetes through lifestyle changes, such as increased physical activity and changes in diet.

→ Plan a coordinated response involving several sectors and addressing non-health factors that contribute to risks of diabetes (e.g. transport and urban design).

→ Increase awareness of diabetes among women, to better prevent or delay its onset, as well as practices for effective management and prevention of complications.

→ Design health promotion programs and health services that are gender appropriate, culturally appropriate, community-based and respectful of age and socioeconomic conditions.

"The scale of the problem requires population-wide measures to reduce levels of overweight and obesity, and physical inactivity. Informed policy decisions on transport, urban design, and on food pricing and advertising can play an important part in reducing the population-wide risks of developing type 2 diabetes." [6]

→ Consult with community agencies regarding the needs and experiences of women and men with diabetes. Because most diabetes care relies on informed self-management, it is important to empower individuals and tailor diabetes education to their needs.

→ Explore opportunities to screen for gestational diabetes and provide diabetes prevention information during pre-natal visits.

→ Find innovative solutions to address men's lower utilization of the health care system. For example, target men for diabetes education in the workplace.

→ Address any inequities by district in access to specialists; improve capacity for out-patient care in rural districts.

To improve policy, it is also important to consider any network opportunities that exist among other countries, to share information and coordinate planning and implementation. Also consider what partnerships with non-governmental organizations or agencies in other sectors could be established to improve diabetes prevention and control. Search for best practice models in areas where you identify special needs within your population (e.g. gender-sensitive and plain language diabetes education).

"Only through partnerships, involving governments, civil society and private sector, can the necessary changes be made that will reverse current trends towards overweight and obesity and the range of chronic diseases associated with them." [6]

The World Health Organization (WHO) and the International Diabetes Federation (IDF) cooperate in the delivery of the Diabetes Action Now program, aimed at reducing the impact of diabetes worldwide. The program focuses on low and middle-income communities, particularly in developing countries. Its purpose is to stimulate and support the adoption of effective measures for the surveillance, prevention and control of diabetes. [6]
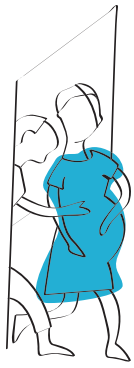
General considerations for presenting a profile

→ Ensure you give enough information so that readers who do not have medical or statistical background can use the information, as the profile will be more useful for a broad range of stakeholders.

→ Define social concepts and abstractions. For example what is meant by the term 'youth' or 'elderly? Who is included in these categories? How is 'low income' defined? These and other general terms require clarity.

→ Ensure that you provide enough information on what the numerator and denominator are in the calculation of any rate. Does the rate refer to an entire population, or a narrower range of those at risk or exposed to the condition, e.g. women of childbearing age, adults, youth in some age range?

→ Present the profile and the indicators in clear non-academic language so that the profile can be used by a wide range of agencies, including community organizations.

→ Charts should be clearly labeled. While multi-coloured charts are attractive, the charts must be legible and distinguishable in black and white when they are reproduced by photocopy or from computer printers.

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Appendix A | Profile frameworks examples

Here are three examples of Frameworks used in gender and health profiles::

Manitoba women's health profile
www.pwhce.ca/Profile

→ Socio-economic Factors
→ Violence against Women
→ Reproductive and Sexual Health
→ Physical and Mental Health
→ Health Care Use
→ Mortality

Women of South-East Asia: a health profile
www.searo.who.int

Women's Health Status	→ Mortality and Morbidity → Disease Burden → Reproductive Health → Nutrition → Health Problems in Work & Environment →Violence against women
Determinants and Responses	→ Factors determining health → National initiatives
Women's Health and Development-related Indicators	→ Regional Tables → Country descriptions.

Pan American Health Organization

Socio-economic determinants of health	→ Demography → Socio-economic factors (income, employment, education, environment, laws and regulations)
Health Status	→ Mortality → Morbidity → Risk factors → Sexual and reproductive health → Gender based violence
Access and utilization of health services	→ Coverage → Utilization in health promotion and prevention → Health expenditures
Health management	→ Formal and informal health care → Making decision

Appendix B | Glossary

Age-specific rate: The number of cases or events of interest for individuals in an age group, divided by the population in that age group.

Age-standardized rate (Direct Method): The rate that would occur in the populations being compared if they shared a standard age composition (a standard population), to which their age-specific rates were applied. When male and female populations are compared, the standard population is often the total population (male + female).

Counts/frequencies: The number of cases or events for the variable of interest, e.g. deaths, hospital admissions, diagnoses, households with low income, individuals with high school diploma.

Crude rate: The number of cases or events for the variable of interest, divided by the number of individuals in the total population.

Incidence rates : measure the probability that healthy people will develop a disease during a certain period of time. Incidence is useful in studying causes of illness and assessing the success of prevention programs.

$$\frac{\text{Number of new cases}}{\text{Population (at risk)}} \times 100.000 \text{ population}$$

Note: For purposes of calculating incidence, a population is considered to be "at risk" when it is comprised of individuals who are free of the disease at the outset of the period for which the rate is calculated. The size of the population at risk is often estimated by subtracting the number of confirmed cases of diseases in the population, i.e. prevalent cases, from the total population.

Population health : is the study of health and disease in human populations, where the community, rather than the individual, is the primary focus of concern.

Prevalence: rates measure the number of existing cases of disease in a population at one point in time. Preval ence rates are useful in assessing the burden of illness, particularly chronic disease, in the population.
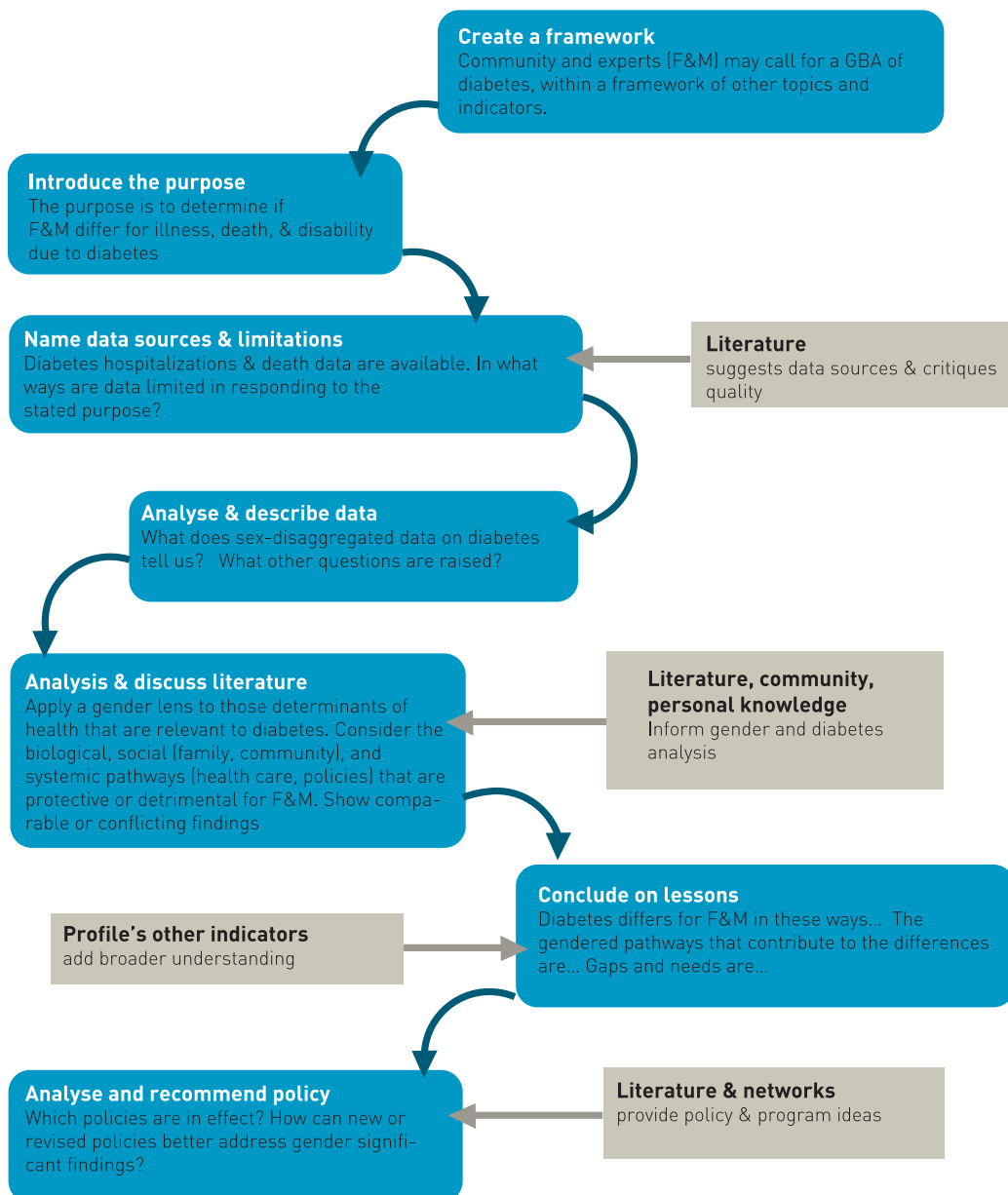
$$\frac{\text{Number of existing cases}}{\text{Total population}} \times 100,000 \text{ population}$$

Sex-disaggregated data : are data separated by sex (male and female), allowing the user to read and use the data for each sex separately, as well as in combination.

Appendix C | Flow chart for presenting a gender and health profile

Create a framework
Community and experts (F&M) may call for a GBA of diabetes, within a framework of other topics and indicators.

Introduce the purpose
The purpose is to determine if F&M differ for illness, death, & disability due to diabetes

Name data sources & limitations
Diabetes hospitalizations & death data are available. In what ways are data limited in responding to the stated purpose?

Literature
suggests data sources & critiques quality

Analyse & describe data
What does sex-disaggregated data on diabetes tell us? What other questions are raised?

Analysis & discuss literature
Apply a gender lens to those determinants of health that are relevant to diabetes. Consider the biological, social (family, community), and systemic pathways (health care, policies) that are protective or detrimental for F&M. Show comparable or conflicting findings

Literature, community, personal knowledge
Inform gender and diabetes analysis

Conclude on lessons
Diabetes differs for F&M in these ways... The gendered pathways that contribute to the differences are... Gaps and needs are...

Profile's other indicators
add broader understanding

Analyse and recommend policy
Which policies are in effect? How can new or revised policies better address gender significant findings?

Literature & networks
provide policy & program ideas

Appendix D | Sample templates for profile development

Profile framework:

→ What topics in Gender and Health will be covered in the Profile?
→ How have you decided on these topics?
→ What indicators are useful and convenient measures to describe the topics?
→ What data are available for each of these indicators?

Topic Area:	Indicators within topics:	Data available:

Step 1: Introduction
Questions to consider and explain in the Introduction for each topic:

What is the topic?

What indicator(s) will be used to describe the topic?

Why is this topic included in the profile?

Why is it a health concern for women or men?

What do you hope to learn from the present analysis?

How is the topic important to the health of communities or the population as a whole? How can the findings be used to change health policies or services?

Step 2: Describing the data and its limitations:
Describe the data you are using.

Are the data separated by sex? How else can you separate the data: by age, rural or urban residence, or ethnicity?

How is the disease or condition of interest defined by the administrator of your data source, that is, what is the 'case definition' and what inclusion/exclusion criteria are applied?

Are the data precise? Do they describe the indicator as you would like? How will you take the lack of precision into account? How can you use the data to give an approximation to your indicator?

Are the data complete? Who or what are you missing? How will you account for the gaps in the data?

Are the data consistent? Can they be compared across the population and over time? How will you account for the inconsistencies in the data?

Other possible questions to consider and explain when describing the data:

Among men and among women, what is the estimated percentage of undiagnosed disease?

Which sub-populations are not included in these data? How else can you find out about disease and trends for those sub-populations?

Are institutionalized populations or those who receive care in private hospitals covered by the data?

Do you need to make any correction to remove possible repeat or duplicate data where the data record more than one case for the same person?

Step 3: Gender-based analysis and presentation of data:

How will you present the data?
Counts/frequencies
Crude rates

Explain why you will or will not use the following:
→ Age-specific rates
→ Age-adjusted rates

Other possible questions to consider for further analysis:

To what extent do observed differences in hospitalization rates between women and men reflect differential access or 'exposure' of men and women to the health care system?

Are there any changes in service delivery that account, to some extent, for any recent trends in rates?

Can observed differences in treatment and mortality be attributed to differences in life-style factors? What are those factors? How are they related to men's and to women's roles in families, communities and society?

How do district and sex differences in levels of poverty, access to treatment or other services contribute to the differences observed in the data?

Step 4: Gender-based analysis of literature and discussion:

Does the literature support the results of your data analysis or suggest other or new information?

What does the literature say about factors contributing to women's and men's distinct experiences and outcomes for this health topic and indicator?

Does the literature adequately address the influence of gender?

Can local women's or men's experiences provide more information?

Consider how women and men may differ for any of the following factors, as they relate to the health topic and indicator.

Risk (i.e. based on both biologically based sex-differences and the influences of gender on exposure to health risks)

Symptoms and illness experience (e.g. symptom severity may vary as a result of biological differences between the sexes, gender roles and responsibilities may influence different needs and priorities in the illness experience)

Intervention and treatments (e.g. pharmaceutical therapies, surgery, new therapies or those perceived to be high risk therapies)

Service or resource use (e.g. physician visits, in-patient or emergency care, referrals to specialists, institutionalized care, use of informal supports and resources)

Outcomes (e.g. activity limitation, long-term disability, illness duration or progression, complications, co-morbidity, death**)**

How might certain groups among women and among men (ethnic, age, area of residence, or socioeconomic group) differ in their experience of the factors listed above?

Step 5: Conclusions and lessons learned

What conclusions can you draw from your analysis of the data and other information?

How does the information you have learned relate to other indicators in your profile?

What have you learned that is new?

Step 6: Policy implications and recommendations

What are the current policies that relate to the indicator(s)?

Do they prevent or allow men and women to seek care or to take advantage of resources equally?

Are there policies outside of the health sector that should be changed to reduce health inequalities?

What have community groups and individuals said about the related policy?

Do the data and information show that the policy is working to help the population and improve health?

Use the information now assembled in the Profile to make specific recommendations for policy that should or could be strengthened or changed. Identify the relevant decision-making authority to which the recommendations will be made.

Here are some areas where there may be recommendations:

Collection of indicator data

Health promotion and illness prevention

Policies in other sectors related to this indicator

Infrastructure and resources in Health and other sectors