

Concept Note

Online course on data analysis and report writing for civil registration based vital statistics

Dates: 12 July to 10 September 2021

1. Introduction and background

Improving the quality and reporting of vital statistics data is a priority under the now concluded Ten Year Pacific Statistics Strategy (2010–2020), which was adopted by leaders of Pacific Islands Countries and Territories in 2009. The Strategy is currently under review for initiation of its next phase of implementation. Heads of Planning and Statistics (HOPs) as well as Heads of health have echoed this priority during different gatherings, including the HOPS gathering in November 2017, which recognised civil registration as a fundamental source of vital statistics. Additionally, Pacific island countries have committed to the Asia-Pacific Regional Action framework for civil registration and vital statistics, which commits countries to : *Universal registration of births, deaths and other vital events (Goal 1)*; and to ensuring that “*Accurate, complete and timely vital statistics (including on causes of death) are produced based on registration records and are disseminated*” (Goal 3).

In addition to strengthening the capacity of countries to improve the completeness and quality of civil registration data, it is critical that support is provided to ensure that this data is analysed, reported, and made available to decision makers. A number of countries are now in a position where their civil registration systems either are able to, or will soon be able to generate reasonably reliable data. Ensuring that system improvements are reflected in an actual improvement in the availability and reliability of statistics is a key regional challenge, and may be a significant change for many NSO’s who have not previously had a clear role in the routine analysis or reporting of this data.

2. Course objectives

This course aims to strengthen the capacity of countries in the analysis of administrative data generated from civil registration systems with an objective of providing evidence on the performance of civil registration systems and making this data available for policy and planning (where it meets a sufficient level of quality and completeness). Specifically, the course is designed to address these two objectives:

- a. Assist countries to complete a vital statistics report that illustrates current levels and trends of births and deaths over time, and that can be used for planning and policy review purposes.
- b. Assist participants to build proficiency in key analytical, interpretation and presentation skills required to meet regional, national and international reporting requirements.

3. Participants

About 16 participants from four countries: **Kiribati, Marshall Islands, Samoa and Vanuatu** are invited to attend the course.

A team of four participants is expected from each country i.e., two representatives of the National Statistics Office (NSO), a representative of the Ministry of Health and a representative of the Civil Registration Office. These three entities are the main stakeholders, and the key drivers of CRVS reform in countries. In this regard, it is important that they share a common level of understanding of each of their roles in the CRVS reform process, and that their relationship and coordination arrangement is strengthened. More specifically, the participation of the three is encouraged for the following reasons:

- a. *The national statistics office* – holds the mandate of production of official statistics. While the analysis of administrative data is encouraged, this has not been the culture/ the practice in most countries. Often, analysis of civil registration data is not included within countries' national statistics plans and when done is often regarded of "secondary priority". This course will aim at encouraging the analysis and routine reporting of this data among NSOs as well as underlining their role in improving the quality of civil registration data.
- b. *The civil registration office* – are the primary custodians of the data being analysed. The course will provide an opportunity for them to engage with the data from a user's perspective and hence appreciate its limitations and strengths. Their participation is envisaged to understand the importance of the data they collect from an analytical and policy perspective, and hence assist them to appreciate the critical role that that they play in providing quality data.
- c. *The ministry of health* – maintain primary records of births, deaths and causes of death for events that occur in health facilities. The course will underline the fundamental role the ministry plays in ensuring quality cause of death records, and in strengthening the completeness of civil registration records. Their participation is envisaged to assist them to appreciate the importance of the data they collect (from an analytical and policy perspective), and the critical role that they play in providing quality data.

Participants from the NSOs will be expected to lead their country team and the development of the vital statistics report by attending all modules. Participants from the civil registration offices and ministries of health will be expected to take an active role in the modules on data quality, where their knowledge of the data and how it is collected will be critical to the analysis of its quality.

4. Data requirements

Country teams will be requested to have microdata on live birth, death (incl. causes of death) from the civil registration and health system available before the start of the course. Countries will be requested to make this data available to the facilitators prior to the beginning of the course for an overall review. The data set should include the following variables:

- a) **Live Births** – including details of full names, date of birth (and date of registration if available), age of mother, sex of child, place of birth (village, island, etc; as well as in hospital or at home), birth weight.
- b) **Deaths** – including full name of deceased, age at death, date of death, (date of birth if known), sex, place of death (home, hospital, overseas etc), place of residence (by state, village, or island as appropriate to your setting), date of death registration.

- c) **Population data** – disaggregated by 1 year (or 5-year age group if not available) and sex for each year that you have birth and death data for. This would most likely come from the official projections from the National statistics office (if available) or from the census

5. Programme of work

The course will focus on statistics on births and deaths. The course will adopt a modular approach allowing participants to follow the course while still working part time in their office. The course will consist of nine modules, each taking place over a week. Four optional modules on causes of death may be added at the end of the course based on demand and availability from the participating countries. The modules will be delivered in the format below:

- **Online webinars (Monday)** – the webinars will include presentations on the topics of the module and show participants practical examples to develop their report. Participants will also have time to ask questions about the material presented. Webinars will last 60-90 minutes, depending on the module.
- **Assignments (Monday-Friday)** – Following each online webinar, country teams will apply what has been presented during the webinar to prepare their data, analyse them, and develop their vital statistics report in a step-by-step manner.
- **Facilitators’ review (Friday-Monday)** – Country teams will have the opportunity to submit what they’ve done as part of their homework to the facilitators for their review. If possible, country teams will be asked to submit the material to be reviewed by Thursday evening.
- **Optional Q&A sessions** – Country teams will also have the possibility to ask facilitators for Q&A sessions to address specific issues related to the assignments. These sessions will be organized on Wednesday or Thursday, depending on the availability of country teams.

The presentations, relevant material and recordings of webinars will all be saved on Microsoft Teams and be accessible by participants, allowing them to complete a module even if they were not able to attend the webinar.

A. Data quality

Type	Title	Tools
Module 1 – Data quality 1: Need for a vital statistics report, 12–16 July 2021		
Webinar Monday, 12:00 – 13:30 Noumea time	<ul style="list-style-type: none"> • Background and objectives of the training and course structure • Overview of the preparation for a vital statistics report • Monitoring the performance of civil registration with vital statistics 	Vital Statistics Report Guides
Assignments		Excel workbook – Tabulations list (comparison to topics from P&R to see what kind of statistics the CR data can be used for)
Q&A session	<ul style="list-style-type: none"> • Review of the materials and data for the course 	

Module 2 – Data quality 2: Data cleaning, 19–24 July 2021		
Webinar Monday, 12:00 – 13:30 Noumea time	<ul style="list-style-type: none"> Data sources: Strength and weaknesses Data quality 1 – Variable formats, duplicates, missing data and basic tabulation 	Vital Statistics Report Guides
Assignments	Data cleaning: Checking for plausible values, incomplete values, typos, blank values, duplicates, ... age heaping?	Excel workbook – Tabulations list (comparison to topics from P&R to see what kind of statistics the CR data can be used for)
Q&A session	<ul style="list-style-type: none"> Review of the presentations and assignments 	
Module 3 – Data quality 3: Assessing the completeness of data and adjusting for incomplete values, 26–30th July 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	<ul style="list-style-type: none"> Data quality 2 – Assessing completeness of data Data quality 3 – Adjusting for incomplete data and redistribution for missing values 	
Assignment	<ul style="list-style-type: none"> Completeness of birth and death data Adjusting for incomplete data and redistribution for missing values 	Excel workbook – Data adjustment based on registration completeness
Q&A session	<ul style="list-style-type: none"> Review of the presentations and assignments 	

B. Birth and fertility analysis

Mandatory modules for participants from NSOs, optional for the others.

Type	Title	Tools
Module 4 – Birth and fertility analysis 1: Basic birth tabulations, 2–6 August 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	Basic birth tabulations: Crude birth rate, births by age of mother, place of birth, birth weight, gestation, sex ratio at birth	
Assignment	Birth tabulations	Excel workbook
Module 5 – Birth and fertility analysis 2: Fertility rate, 9–13 August 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	<ul style="list-style-type: none"> Age-specific fertility rates (ASFR) Total fertility rate (TFR) 	
Assignment	<ul style="list-style-type: none"> ASFRs TFR 	Excel workbook UNSW – Fertility Calculation Tool
Q&A session	<ul style="list-style-type: none"> Review of the presentations and assignments 	

C. Death and Mortality analysis

Mandatory modules for participants from NSOs, optional for the others.

Type	Title	Tools
Module 6 – Mortality analysis 1: Basic death tabulations, 16–20 August 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	Basic death tabulations: Crude death rate, deaths by age of deceased, by geographic region, by sex?	

Assignment	Death tabulations	Excel workbook
Q&A session	• Review of the presentations and assignments	
Module 7 – Mortality analysis 2: Age specific mortality, 23–27 August 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	<ul style="list-style-type: none"> • Age specific mortality and age distribution of deaths • Measures of infant and child mortality 	
Assignment	<ul style="list-style-type: none"> • Calculating age specific mortality/ graphing age-specific mortality • Measures of child and infant mortality and their meaning 	Excel workbook UNSW – Life Table and Probability of Dying Calculation Tool UNSW – Infant and Under 5 Mortality Calculation Tool
Q&A session	• Review of the presentations and assignments	
Module 8 – Mortality analysis 3: Life expectancy, 30 August to 3 September 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	Life Expectancy and life tables	
Assignment	Calculating a life table	Excel workbook, both graph and life table UNSW – Life Table and Probability of Dying Calculation Tool
Q&A session	• Review of the presentations and assignments	
Module 9 – Mortality analysis 4: Mortality analysis, 6–10 September 2021		
Webinar Monday, 12:00 – 13:00 Noumea time	<ul style="list-style-type: none"> • Using life tables – Adult mortality and probability of dying • Critical analysis – Plausibility of mortality results (comparison to other sources) 	
Assignment	Calculating a life table, LE at birth, LE at age 40, adult mortality, plausibility analysis	Excel workbook, both graph and life table UNSW – Life Table and Probability of Dying Calculation Tool
Q&A session	• Review of the presentations and assignments	

6. Preparation

The invitation will advise participants of the following course pre-requisites:

- Participants need to have a laptop loaded with Microsoft Office suite, including Excel and Word.
- Countries must indicate their intent to develop the draft report, to be completed by the participants, to a final version for publication within 3 months of the course, and once authorised through appropriate sign off in country- publication of the report on the Pacific Health Information Network (PHIN), SPC and ‘Get in the picture’ websites.
- Participants are required to meet with their national committees to ensure they have the appropriate data and agree on the most complete national data set to be used in the training.
- Participants are requested to read the supplied pre-reading material (incl. course book) before arriving at the course.

7. Course material

Name	Type	Topic	Source
Data analysis and report writing for Civil Registration and Vital Statistics training workbook	Guideline	All	http://purl.org/spc/digilib/doc/on8xw
Vital Statistics reporting template	Template	All	http://purl.org/spc/digilib/doc/re6un
UNSW - NCD Tools	Excel Tool	Birth and fertility analysis; Mortality analysis	https://bit.ly/3vzXHXu
Companion Guide for Producing a Vital Statistics Report	Guidelines	All	https://bit.ly/2RrKiIS
Vital Statistics Report Template	Template	All	https://bit.ly/2RrKiIS
Workbook	Excel Tool	All	https://bit.ly/2RrKiIS

8. Important reference documents/material

Name	Type	Topic	Source
Principles and Recommendations for a Vital Statistics System	Guidelines	All	https://bit.ly/3tl0W3E
Analysing mortality levels and causes-of-death (ANACoD)	Tool	Causes of death	https://www.who.int/standards/classifications/services/analysing-mortality-levels-and-causes-of-death
International Classification of Diseases	Guidelines	Causes of death	https://www.who.int/classifications/classification-of-diseases
WorldPop	Data	Data quality	https://bit.ly/3h3v4hs
World Population Prospect	Data	Data quality	https://bit.ly/3vEQVzP
Population figures for Pacific countries disaggregated by age and sex (denominators)	Data	Data quality + denominator data	https://syr.us/lk5
Guide to calculating national life tables Explanation of the methodology used to create the national life tables.	Guidelines	Causes of death	https://bit.ly/33cmrJh

9. Expected output

At the end of the course, each participating country will be expected to have an initial draft of a vital statistics report, including basic tabulations, key demographic indicators and descriptive summaries of the tables, indicators, data sources and data imitations. After the course, BAG members will continue to provide technical support to countries in the development and completion of the reports.

10. Appendices (to be provided upon request)

1. Vital statistics reporting template
2. Draft Invitation letter