

ICD mortality coding training workshop

1-10 March 2023, Nadi, Fiji

REPORT

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ABBREVIATIONS

BAG	Brisbane Accord Group
CRVS	Civil Registration and Vital Statistics
COD	Cause of Death
D4H	Data for Health
ICD	International Classification of Diseases
ICD-10	International Statistical Classification of Diseases & Related Health Problems, 10 th Revision
ICD-11	International Statistical Classification of Diseases & Related Health Problems, 11 th Revision
MCCD	Medical Certificate of Cause of Death
PICTs	Pacific Island Countries and Territories
SPC	The Pacific Community
UCOD	Underlying Cause of Death
WHO	World Health Organization

SUMMARY

The Pacific Community (SPC) conducted training and capacity building workshops for Pacific Island Countries and Territories (PICTs) on medical certification of cause of death (MCCD) and ICD mortality coding from 27th February to 10th March 2023, in Nadi, Fiji. These workshops were implemented under the *Pacific Islands Regional Programme on Strengthening the Availability and Quality of Causes of Death Data* (Pacific CoD Programme) supported by funding from the Bloomberg Philanthropies Data for Health Initiative. This project builds on the support for Civil Registration and Vital Statistics (CRVS) systems strengthening that Brisbane Accord Group (BAG) partners have provided to PICTs since 2010. Working with previously trained individuals, the aim is to build a pool of trained professionals who would lead capacity strengthening efforts in the region through peer-to-peer training and support.

Training and capacity building on ICD mortality coding including on ICD-11 was provided to 16 clinical coders from nine PICTs on 1-10 March 2023.

- Participants were trained in how to code using the coding conventions and rules as well as in applying mortality rules of re-selection to correctly identify the final underlying cause of death in the MCCD. They completed exercises using case scenarios from ICD-coding work and answer books.
- The training included hands-on training in using the ICD-11 Browser, ICD-11 Coding Tool, the Pacific Centre in the ICD-Field Implementation Tool (ICD-FIT) platform, and automated mortality coding tool (DORIS) to select underlying cause of death for individual MCCDs as well as for processing batches of MCCDs
- Participants and facilitators held group discussion and feedback sessions, to identify challenges to weak coding capacities and address regional and country needs and preferences for technical support in ICD coding. These sessions were guided by the feedback that participants gave on questionnaires sent in advance of the workshop.
- Participants were guided through options for regional mortality coding support including possible support models for a centralised regional coding centre.

Key follow up actions for technical partners are:

- Continue to provide support to individual PICTs in accordance with mutually identified support requirements, including in the use of relevant resources including ICD-11 tools, automated ICD mortality coding tools and advocacy materials
- Advance the proposal of a regional coding support centre and implement centralised coding support at initial scale, where needed, with possibility to expand offering in the longer term.
- Establish and formalise the Pacific Medical Coders Network, to provide a coordination mechanism for relevant government agency stakeholders and technical implementation partners to further strengthen regional ICD coding, including the establishment of the regional coding support centre, and ICD-11 implementation and transition
- Develop a register of coders (and countries) that have undergone SPC-coordinated trainings or other previous trainings.
- Develop online community forum for coders.

It is recommended that all ICD mortality coders working in PICTs be given formal training in ICD mortality coding including training on use of automated mortality coding tools and that they be given training in Medical Terminology early to better understand the medical terms and concepts of ICD. Conducting ICD mortality coding audits to evaluate the quality of ICD mortality coding by the coders working in these PICTs and provision of periodic refresher training to update their knowledge on new updates on ICD coding is also recommended.

INTRODUCTION AND BACKGROUND

Accurate data on deaths and cause-of-death are essential for the monitoring of important demographic and health indicators, including tracking progress against key health priorities of the Pacific region. In particular, premature mortality due to NCDs, and transport accidents among others is a growing concern. Yet the availability and quality of cause-of-death data remain fundamental challenges for most countries in the Pacific Island region. Key sources of these challenges relate to: 1) sub-optimal and incomplete death registration; 2) inaccurate, delayed, or inadequate medical certification and ICD coding of causes of death, and 3) limited capacities in the analysis and interpretation of mortality and cause-of-death data for statistics production. Regarding coding, there are critical challenges in retaining qualified staff (especially in the smaller island countries) and in ensuring country officials have the required specialised technical knowledge. There have been increased recognition of these challenges at meetings from Pacific Heads of Health and Pacific Heads of Planning and Statistics, and increased calls from these meetings for countries to be supported in strengthening capacities in these areas.

Pacific Island countries and territories (PICTs) have made commitments to monitor and achieve health and development goals, such as the Healthy Islands Monitoring Framework and Sustainable Development Goals for 2030 (including Goal 3 on premature mortality, Goal 17 on data availability and statistics); accurate data on deaths and cause-of-death are essential for tracking of at least eight of the 132 Pacific sustainable development indicators¹. PICTs have also made commitments to strengthen progress towards the goals of the Regional Action Framework (RAF) for Civil Registration and Vital Statistics in Asia and the Pacific in line with the Asia and Pacific Civil Registration and Vital Statistics Decade (2015–2024)².

In line with these commitments, the Brisbane Accord Group (BAG) has strengthened its support to countries in improving reporting, quality and analysis of cause-of-death data. The primary aim is to build a pool of highly skilled Pacific Island professionals who would lead capacity strengthening efforts in the region particularly on medical certification and coding of causes of death through south-south or peer-to-peer training-of-trainers support. Since 2020, the Bloomberg Philanthropies Data for Health Initiative (D4H) has provided technical and financial assistance to the SPC. To better identify and address country-specific needs, SPC has conducted periodic assessments of gaps in training and capacities in MCCD and ICD mortality coding among PICTs as well as assessments of country preferences for different types of technical support.

With D4H support, BAG partners including the Australian Bureau of Statistics (ABS), the Queensland University of Technology (QUT), World Health Organization (WHO) and SPC developed an initial proposal for a regional centre for mortality coding; published a regional training curriculum for MCCD and a regional training curriculum for ICD mortality coding³; conducted a quality review of cause-of-death data in Fiji, Tuvalu, Nauru, and Republic of Marshall Islands to strengthen cause-of-death certification practices and ICD mortality coding systems; and provided ad-hoc regional and in-country training.

Building on this momentum along with continued D4H support, the *Pacific Islands Regional Programme on Strengthening the Availability and Quality of Causes of Death Data programme* (Pacific CoD programme) was instituted. The project recognises the need for a systematic approach and framework for BAG and other partners to: i) continue providing support to countries and the region to improve the reporting,

¹ The 132 Pacific sustainable development indicators selected to monitor development in the region were endorsed as part of the Pacific Roadmap for Sustainable Development http://www.spc.int/DigitalLibrary/Doc/SDD/Sustainable_Development_Goals_SDGs/SDGs_in_the_Pacific_Booklet_2018.pdf

² Details on the Regional Action Framework (RAF) on CRVS in Asia and the Pacific here: <https://getinthepicture.org/crvs-decade/regional-action-framework>

³ See Curriculum on medical certification of cause-of-death for Pacific Island countries and territories <https://purl.org/spc/digilib/doc/vmfzk> and Curriculum for coding of causes of death for Pacific Island countries and territories <https://purl.org/spc/digilib/doc/qbrzh>. Published by the Brisbane Accord Group. 2021

quality and analysis of cause-of-death data, in particular through strengthening cause-of-death certification and coding practices; and ii) develop institutional capacity for medical certification of cause-of-death and mortality coding to ensure sustainability of skill development and translation into long term improvements in mortality and cause-of-death data availability and quality.

For the initial programme phase, SPC established technical staff to lead and coordinate further capacity-building activities in medical certification and coding of causes of death. SPC conducted a regional workshop for training and training-of-trainers on MCCD on 27-28 February 2023 in Nadi Fiji, with physicians from nine PICTs. Integral components of the workshop were skills development of master trainers and the development of action plans for designing local MCCD training-of-trainers programs. A regional training workshop on ICD mortality coding was also conducted on 1-10 March 2023 in Nadi Fiji, with clinical coders from these same countries. Besides providing technical training, this workshop presented countries with options for strengthening mortality coding including the use of automated mortality coding tools and centralised coding support at a regional centre.

This report presents a review of the ICD mortality coding workshop held in March: its objectives, profile of participants, design, key outcomes, follow up actions, and recommendations. A separate report, *Report on Medical Certification of Cause-of-death (MCCD) training-of-trainers workshop, 27-28 February, Nadi (Fiji)*, is available.

Objectives

- Provide training on ICD mortality coding including on ICD-11
- Discuss and identify regional and individual country needs for support in technical areas to strengthen cause of death data
- Provide guidance and orientation on options for mortality coding: including automated mortality coding tools and possible support models for regional centralised coding

Participants

The training workshop was held at Novotel Hotel, Nadi, Fiji Islands. Sixteen coders from nine PICTs (Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Palau, Samoa, Solomon Islands, Tonga, Tuvalu) attended the training sessions. The names, workplaces and contact details of the participants are given in the Appendix 1. Five participants had received no prior training in ICD coding, while most others received training of 1-2 weeks duration within the last 5-10 years.

Workshop design

Trainer

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Training content

The training course covered the coding of mortality data to facilitate the application of ICD to describe cause(s) of death reported on MCCDs. Training in chapter-specific coding and application of mortality rules of re-selection to identify the Underlying Cause of Death (UCOD) was carried out. Work and Answer books used for the training were originally developed by Sue Walker and Maryann Wood, from the National Centre for Classification in Health (NCCH), School of Public Health, Queensland University of Technology (QUT), Brisbane, Australia.

The course outline is presented below:

1. Introduction ICD, why code?, coded data uses, ICD structure and conventions
2. Using ICD volumes and decision tables
3. How to code with ICD (in comparison with ICD-10 and ICD-11), chapter by chapter – lectures, training software and work books, coding exercises from ICD-FIT platform
4. Proper application of latest WHO mortality coding rules to identify the UCOD in MCCDs
5. Proposed models for SPC regional coding centre
6. Country level ICD -11 implementation plans
7. Group work on country level ICD -11 implementation plans
8. Participant presentations about coding in participants' hospitals, coding issues and problems open forum, future coding activity plans

The list of ICD chapters that were included for training;

Module I	Introduction to ICD Structure and Principles of Classification
Module II	Basic Coding Guidelines
Chapter 1	Certain Infectious and Parasitic Diseases
Chapter 2	Neoplasms
Chapter 3	Diseases of the Blood & Blood-forming Organs
Chapter 4	Diseases of the immune system
Chapter 5	Endocrine, Nutritional and Metabolic Diseases
Chapter 6	Mental, behavioural, or neurodevelopmental disorders
Chapter 7	Sleep-wake disorders
Chapter 8	Diseases of the Nervous System
Chapter 9	Diseases of the visual system (Eye and Adnexa)
Chapter 10	Diseases of the Ear and Mastoid Process
Chapter 11	Diseases of the Circulatory System
Chapter 12	Diseases of the Respiratory System
Chapter 13	Diseases of the Digestive System
Chapter 14	Diseases of the Skin
Chapter 15	Diseases of the Musculoskeletal System and Connective Tissue
Chapter 16	Diseases of the Genitourinary System
Chapter 17	Conditions related to sexual health
Chapter 18	Pregnancy, Childbirth, and the Puerperium
Chapter 19	Certain Conditions Originating in the perinatal Period
Chapter 20	Developmental anomalies
Chapter 21	Symptoms, Signs & Abnormal Clinical & Laboratory Findings, NEC
Chapter 22	Injury poisoning and certain other consequences of external Causes

Chapter 23	External causes of morbidity or mortality
Module III	Mortality coding rules of re-selection and correct application of rules

Due to the limited availability of time for the training, only selected modules were covered, and only a selected number of practice exercises were done in each of these modules.

The training agenda is given in Appendix 2.

Training format & materials

Participants were required to bring to the workshop:

- Laptop with materials downloaded from link <https://sdd.spc.int/events/2023/03/regional-training-workshops-icd-mortality-coding> . Relevant resources are provided in Appendix 3.
- Completed needs assessment questionnaire/survey. Blank copy is provided in Appendix 4. Prior to the workshop, participants were asked to complete a questionnaire to assess gaps in training and capacities for ICD coding, and preferred approaches to ICD coding training and support. The feedback provided was used to guide the group discussion sessions.

The standard international curriculum for coding education developed by the World Health Organization-Family of International Classifications Network Education Committee (WHO-FIC-EC) was modified for nine-day workshop.

Training materials included electronic and paper-based resources and participants received work and answer books in ICD.

The workshop included a mixture of:

- Lectures / Lecture discussions
- Practical exercises from workbook and with the use of ICD-11 coding tool together with International Classification of Diseases-Field Implementation Tool (ICD-FIT) platform
- Introduction to ICD-11 automated mortality coding tool (DORIS tool) on selection of UCOD for individual MCCDs and for batch processing
- End course coding assessment following completion of the training.
- Group discussions and feedback
- Group presentations

Participants were awarded a certificate of participation at the end of the course.

Outcomes

Highlights

An end of course coding examination was conducted to evaluate the coding competencies of the participants following the training. The results obtained by the participants were outstanding. It is noted that 8 participants out of 16 who underwent training had no prior ICD coding training. Moreover, ICD-11 training was new to all the participants.

The average mark obtained by the participants was 83.4%.

Most of the participants showed an aptitude for body systems coding and demonstrated skills in this task. The ones who found this type of coding most difficult were those who had no medical science or medical terminology knowledge and therefore lacked the capacity to understand the diagnoses and cause(s) of death they were being asked to code. Without such understanding, coding can be difficult particularly as the language of much of the ICD is very formal and often not used by doctors in recording clinical notes. This requires the coder to interpret the documentation to locate the appropriate codes to use. It is therefore recommended that a full course in Medical Terminology education be sourced, either locally or

through the next health information consultant. There are some good self-paced textbooks available for teaching Medical Terminology. However, it is believed that the selected PICTs participants would learn better in a classroom situation.

Few participants found mortality coding to be difficult, most likely because it was new to them and due to the lack of medical knowledge on the part of the participants. However, towards the end of the mortality training module majority of the participants were conversant with the mortality coding rules and its applications.

All participants understood and appreciated the potential benefits of ICD-11 coding compared with ICD-10 coding and found the ICD-11 coding tools easy to use. They learnt how to use the automated mortality coding tool (Digital Open Rule Integrated cause of death Selection tool – DORIS). All participants were able to access the WHO ICD-FIT platform to practice ICD-11 coding exercises; they viewed having the Pacific Center in the ICD-FIT enhanced their learning and would highly benefit coders in the region.

An overview of the proposal for a regional coding support centre was presented, including its rationale, potential benefits, and the required processes and actions underpinning its operation. The critical role of manual human coders was emphasised. Most participants were interested in this off-island coding support, according to their responses to the questionnaires before the workshop. It was understood that consultations and discussions with all relevant country Ministry of Health and HIS stakeholders were also necessary and were being planned.

Key issues discussed

Group discussion sessions were conducted, guided by the feedback participants gave on questionnaires on needs and preferences for technical support.

Country participants indicated ICD mortality coding training gaps and needs

Country*	Which revision and edition year of the ICD is used in your country?	Is there training on ICD mortality coding provided to coders?			
		NO	YES		
			How regular is this training?	Is this ad-hoc training provided by partners to coders?	Are online training courses available to coders?
Cook Islands	ICD-10	No			
Fiji	ICD-10	No			
	ICD 10 2010 10th edition		Only 1 training in 2017	Yes	I don't know
FSM	ICD-10		Not often	Yes	I don't know
	ICD-10, 2005	No		Don't know	No
Kiribati	ICD 10 2010 10th edition		Only did it in 2018	Yes by Nandalal and funded by WHO	Yes, but don't have time to do it since we're busy with daily responsibilities, but we prefer to do it as part of training
	ICD 10 2010 10th edition		Only did in 2013 & 2018	Yes by Sue Warker & Dr Nandalal, funded by WHO	
Palau	ICD-10	No			
Solomon Islands	ICD-10, 2008		2018, 2019	Yes	No
	ICD-10, 2008		Don't know	Yes	No
Tonga	ICD-10				
Tuvalu	ICD-10, 2016	No			

*No response from Samoa

Country participants indicated their preferred support for ICD-coding strengthening

Country	Certified online short courses	Automated coding tools	Staff attachment program for coders	Regional coding centre/ off-island automated coding support	Periodic quality review of coded data - how frequently?
Cook Islands	Yes	Yes	Yes	Yes	Quarterly
	Yes	Yes	Yes	Yes	Quarterly
Fiji	Yes	Yes	Yes	Yes	Twice a year
	Yes	Yes	Yes	Yes	Yes
FSM	I don't know	I don't know	I don't know	I don't know	I don't know
	Yes	Yes	Yes	Yes	Yes
Kiribati	Yes	Yes	Yes	Yes	Yes, Quarterly and Annually
	Yes	Yes	Yes	Yes	Yes, Quarterly and Annually
Palau	Yes	Yes	Yes	Yes	Quarterly
Samoa	Yes	Yes	Yes	No	No
Solomon Islands	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes
Tonga	Yes	Yes	Yes	Yes	Twice a year
	Yes	Yes	Yes	Yes	Twice a year
Tuvalu	Yes	Yes	Yes	Yes	Yes, Quarterly

Country participants revealed common challenges to producing quality CoD data in their country.

Cook Islands	Knowledge of how to use the ICD coding books. Training to work with the clinical staff who provide the death certificates. Lack of updating the information in our electronic system i.e. coding/classifications. Staff capacity to do the work for coding, not only in deaths but in other areas i.e. disease classifications, NCDs and so forth. Deaths which occur on our outer islands may not have a trained doctor to diagnose cause of death
	Lack of training, being able to have forum where can receive support from other coders or mentors. Regular meetings with doctors to ensure consistency in notes are taken and cause of death. Monthly or fortnightly auditing of death certificates and coding to ensure issues are raised when found.
Fiji	The use of abbreviations, Doctors handwriting. Late submission of MCCD forms. Incomplete MCCD. Incorrect information written in the MCCD. Quality checks or auditing of mortality data.
	<ol style="list-style-type: none"> 1. Incorrect sequencing of events that leads to death by the clinician 2. Incomplete death certificate 3. Unclear causes of death eg. Use of abbreviations, and etc 4. Delay submission of MCDC for analysis 5. Lone mortality coder doing data entry at national level (Centralised data collection/entry) 6. Audit of mortality data
FSM	Lack of knowledge and skills on medical terminology, and ICD-10 coding on mortality. Need to have a yearly training for all the coders in FSM. As such, it will improve quality of Clinical Coding to ICD-10.

Kiribati	1. Different ideas of stating cause of death with doctors and coders 2. Need time for Auditing for Cause of Death and coding for we've never done it before. 3. Cant read poor handwriting from doctors.
Palau	1. Doctors are not trained in medical certification of cause of death. 2. We don't have certified mortality coders in our jurisdiction. 3. No access to trained or experts in mortality coding to assist with certain cases.
Samoa	Manually codes, Training for coders in ICD 11, Doris--Electronic cause of death certificate, need more resources like network connection(computer/software), Guidelines for coders and technical methods to improve, medical terminology used by Doctors/GP, Time issued of DC, Coroners/Post Mortem
Solomon Islands	1. Difficulty in understanding medical terminology by Doctors. 2. Staff attachment with countries have best coding system. 3. Refresher training for coders. 4. Refresher trainings for Doctors for mortality terminology 5. Update on latest coding for covid-19, since we use 2008 version
	1. Writing illegibility 2. Difficulty to understand medical terminology. Need regular refresher training for coders in ICD -10 and medical terminology
Tonga	Lack of knowledge and skills on medical terminology, and ICD-10 coding on mortality. Need to have a yearly training for all the coders in FSM. As such, it will improve quality of Clinical Coding to ICD-10
	Lack of training, being able to have forum where can receive support from other coders or mentors. Regular meetings with doctors to ensure consistency in notes are taken and cause of death. Monthly or fortnightly auditing of death certificates and coding to ensure issues are raised when found.
Tuvalu	Need more training to our medical doctors, nurses(out islands) and coder. Refresher training for at least yearly basis for coders etc..... Need support to our coders and clinician to assist on our Mortality coding.

ICD-11 implementation and transition plans:

- Most participants felt it was preferable for senior government officials of their respective countries to initiate and coordinate the development of a national ICD-11 implementation plan with relevant stakeholders including clinical coders.
- Participants were interested and agreed on the formation of a Pacific Medical Coders Group/ Network as a first step towards guiding ICD-11 adoption and implementation strategies and developing national ICD-11 implementation plans. Such a network would act as a collective voice of coders, and provide a mechanism for networking, support, information sharing, professional development, and training for coders. The Group could elect and include members who serve as the ICD-11 focal point for each country.

Country participants shared common recommendations and suggestions to improve quality CoD data in their country. All participants were interested in having an online forum for Pacific mortality coders. to share information, Q&A, etc. among peers. There was high interest in having support provided through email exchange with coding expert to discuss uncertain cases, and short information videos. Several participants expressed a desire for regular refresher training workshops, with most suggesting on an annual basis.

Follow up actions

1. Establish and formalise Pacific Medical Coders Group / Network

The purpose of the Network would be to drive the implementation of regional coding support (particularly the coding support centre, where desired), highlight ICD-11 implementation issues and provide recommendations; and highlight both CRVS and HIS issues and provide recommendations.

An established official Pacific Coders Network provides entry points for SPC and WHO to access and develop the Medical Coding Space. It would also enable WHO to enhance specific technical support to PICTs. Recommendations from the Group would be reported or forwarded to SPC, PHIN, and WHO. Terms of references for the Pacific Medical Coders Network needs to be drafted.

2. Develop register of coders (and countries) that have undergone SPC-coordinated trainings or other previous trainings.

Participants would be informed about the purpose and potential benefits of the register. I.e. they would be considered to participate in future regional training workshops and their participation as a facilitator or trainer would be requested. Participants would be expected to ensure their contact details with SPC are up-to-date and that they "log" their training history.

3. Develop online community forum for coders.

Such forums would allow participants to exchange ideas and provide cross-country and cross-regional peer-to-peer support. Once set up, the community forum would need dedicated person(s) to manage and maintain the group, however it may be an effective way to advance other follow up actions and recommendations such as the 1) Creation of a register of previously trained individuals; 2) Promotion of the Pacific Centre in the WHO ICD-FIT platform; 3) Establishment of The Pacific Medical Coders Group/Network; and 4) Mentorship of coding e.g. establishing staff attachments programs

4. Advance the proposal of a regional coding support centre and implement centralised coding support at initial scale, where needed, with possibility to expand offering in the longer term.

Each country needs to be consulted on the proposed support models for operating the regional coding centre. Relevant structures (considering the legal and data privacy requirements) would need to be finalised and data sharing agreements between SPC and participating countries developed and formalized. These would be reviewed and endorsed by countries through the Pacific Heads of Health and Pacific Heads of Planning and Statistics platforms. The partnership arrangements between SPC and relevant BAG partners (including ABS, FNU and WHO) would also need to be refined.

Recommendations

1. All ICD coders working in PICTs should be given formal training in ICD mortality coding including training on use of automated mortality coding tools.
2. It is also recommended that coders also be given a training in Medical Terminology early to better understand the medical terms and concepts of ICD.
3. ICD mortality coding audits should be conducted to evaluate the quality of ICD mortality by the coders working in these PICTs to identify errors in coding. They should be given periodic refresher training to correct their errors as well as to update their knowledge on new updates to ICD.
4. Raise awareness of the Pacific Centre in the ICD-FIT platform to coders in the region as an accessible tool for practicing ICD-11 coding.

Lessons learned for future workshops

- Have a C shape seating arrangement rather than a U shape.
- Make sure the most capable or experienced participants can attend the workshop
- Consider implementing workshops or provision of training activities or support at sub-regional levels: Melanesia, Micronesia, Polynesia

Overall, running MCCD and ICD training workshops back-to-back worked well. It was a good idea to clearly separate the administration, organisation and coordination of both workshops (e.g. separate invitation letters, event pages). In future sub-regional trainings, an overlapping day with attendance from doctors,

coders, and HIS managers should be considered. This overlapping "multi-stakeholders" day would primarily comprise dialogue and discussion of common issues and proposing solutions, rather than focused on providing technical training. Attendance by highly trained doctors and coders may make this overlapping day more effective and productive.

APPENDICES

Appendix 1: List of participants

Cook Islands

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Appendix 2: Agenda

Day 1 Wednesday 1 March 2023	
Time	Topic
08:00-08:30	Registration
08:30-08:45	Welcome and opening remarks- Statistics for Development Division, SPC Introduction of workshop participants & facilitators
08:45-09:00	Course overview, De-freezing
09:00-09:20	Basic Coding Guidelines
09:20-09:50	Introduction to ICD-11 and Principles of Classification
09:50-10:30	Group Photo and Morning tea break
10:30-11:30	ICD-11 browser and coding tool
11:30-12:30	Introduction to Tabular List
12:30-13:30	Lunch Break
13:30-14:15	Introduction to Alphabetic Index
14:15-15:00	[ICD-11 Chapter 20 Developmental abnormalities] (ICD-10 Chapter XVII- Congenital malformations and Chromosomal abnormalities)
15:00-15:30	Afternoon tea Break
15:30-16:30	[ICD-11 Chapter 05- Endocrine, Nutritional and Metabolic Diseases] (Chapter 4 in ICD-10)
Evening	Cocktail event
Day 2 Thursday 2 March 2023	
Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 2
08:35-10:00	ICD-11 Chapter 2 – Neoplasms (Chapter 2 in ICD-10)
10:00-10:30	Morning tea break
10:30-11:30	ICD-11 Chapter 12 - Diseases of the Respiratory system (Chapter 10 in ICD-10)
11:30-12:30	ICD-11 Chapter 16 - Diseases of the Genitourinary system (Chapter 14 in ICD-10)
12:30-13:30	Lunch Break
13:30-14:30	ICD-11 Chapter 8 - Diseases of the Nervous System (Chapter 6 in ICD-10)
14:30-15:30	ICD-11 Chapter 18 - Pregnancy Child Birth and Puerperium (Chapter 15 in ICD-10)
15:30-16:00	Afternoon tea Break
16:00-16:30	ICD-11 Chapter 21 - Symptoms, Signs and Abnormal Laboratory findings (Chapter 18 in ICD-10)
Day 3 Friday 3 March 2023	
Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 3
08:35-10:00	ICD-11 Chapter 22 - Injury, poisoning & certain other consequences of external causes (Chapter 19 in ICD-10)
10:00-10:30	Morning tea break
10:30-12:00	ICD-11 Chapter 23 - External causes of morbidity and mortality (Chapter 20 in ICD-10)
12:00-13:00	Lunch Break

13:00-14:00	ICD-11 Chapter 13 - Diseases of the Digestive System (Chapter 11 in ICD-10)
14:00-15:00	ICD-11 Chapter 11 - Diseases of the Circulatory system (Chapter 9 in ICD-10)
15:00-15:30	Afternoon tea Break
15:30-16:30	ICD-11 Chapter 19 - Certain Conditions arising in the Perinatal period (Chapter 16 in ICD-10)

Day 4 Saturday 4 March 2023

Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 4
08:35-10:00	ICD-11 Coding Tool
10:00-10:30	Morning tea break
10:00-12:00	ICD-11 Coding Tool hands on experience
12:00-13:00	Lunch Break
13:00-14:00	ICD-11 Coding Tool hands on experience (Cont'd)
14:00-15:00	ICD-11 Coding Tool hands on experience (Cont'd)
15:00-15:30	Afternoon tea Break
15:30-16:30	ICD-11 Coding Tool hands on experience (Cont'd)

Day 5 Monday 6 March 2023

Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 5
08:35-10:00	Overview of Mortality Coding
10:00-10:30	Morning tea break
10:30-12:00	Mortality Coding Rules & Conventions
12:00-13:00	Lunch Break
13:00-14:00	Mortality Coding Rules & Conventions (cont'd)
14:00-15:00	Mortality Coding Rules & Conventions (cont'd)
15:00-15:30	Afternoon tea Break
15:30-16:30	Mortality Coding Rules & Conventions (cont'd)

Day 6 Tuesday 7 March 2023

Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 6
08:35-10:00	Mortality Coding Exercises for Chapter I and II
10:00-10:30	Morning tea break
10:30-12:00	Mortality Coding Exercises for Chapter III and IV
12:00-13:00	Lunch Break
13:00-14:00	Mortality Coding Exercises for Chapter V and VI
14:00-15:00	Mortality Coding Exercises for Chapters VII and VIII
15:00-15:30	Afternoon tea Break
15:30-16:30	Mortality Coding Exercises for Chapters IX and X

Day 7 Wednesday 8 March 2023

Time	Topic
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08:00-08:30	Registration
08:30-08:35	Introduction to Day 7
08:35-10:00	Mortality Coding Exercises for Chapters XI & XII
10:00-10:30	Morning tea break
10:30-12:00	Mortality Coding Exercises for Chapters XIII and XIV
12:00-13:00	Lunch Break
13:00-14:00	Mortality Coding Exercises for Chapters XV and XVI
14:00-15:00	Mortality Coding Exercises for Chapters XVII and XVIII
15:00-15:30	Afternoon tea Break
15:30-16:30	Mortality Coding Exercises for Chapters XIX and XX
Day 8 Thursday 9 March 2023	
Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 8
08:35-10:00	Introduction to ICD-11 automated mortality coding tool (DORIS tool)
10:00-10:30	Morning tea break
10:30-12:00	Introduction to ICD-11 automated mortality coding tool (DORIS tool) cont'd
12:00-13:00	Lunch Break
13:00-14:00	ICD-11 automated mortality coding hands on experience
14:00-15:00	ICD-11 automated mortality coding hands on experience (cont'd.)
15:00-15:30	Afternoon tea Break
15:30-16:30	End Course Coding Assessment and Course Evaluation
Day 9 Friday 10 March 2023	
Time	Topic
08:00-08:30	Registration
08:30-08:35	Introduction to Day 9
08:35-10:00	Proposed models for SPC regional coding centre
10:00-10:30	Morning tea break
10:30-12:00	Country level ICD -11 implementation plans
12:00-13:00	Lunch Break
13:00-15:00	Group work on Country level ICD -11 implementation plans
14:00-15:00	Group work on Country level ICD -11 implementation plans (cont'd)
15:00-15:30	Afternoon tea Break
15:30-16:00	Workshop evaluation, Participant Feedback
	Closing remarks
16:00-16:30	Certificate ceremony

Appendix 3: Relevant resources

Electronic copies of the following resources, tools and technical guides will be uploaded on the Workshop webpage at <https://sdd.spc.int/events/2023/03/regional-training-workshops-icd-mortality-coding>

- [ICD-11: International Classification of Diseases 11th Revision](#). WHO. 2021.
 - [ICD-11 Browser](#)
 - [ICD-11 Coding Tool](#)
 - [ICD-11 Implementation or Transition Guide](#)
 - [ICD-11 Training Package](#)
- [ICD-10 v.2016 Browser](#) and User Guide. WHO
- [ICD-10 v.2019 Browser](#) and User Guide. WHO
- [ICD-10 Interactive Self Learning Tool](#). WHO
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- [Curriculum for coding of causes of death for Pacific Island countries and territories](#). SPC & BAG. 2021
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- Assessing the quality of death certificates: Rapid Assessment tool. Bloomberg Philanthropies Data for Health Initiative. 2020.
- Death Certificate Assessment Tool (Excel version). Bloomberg Philanthropies Data for Health Initiative. 2020
 - Death certificate assessment tool (Excel version): User guide. 2020.
- Manual ICD-10 mortality coding quality assessment tool (Excel). Bloomberg Philanthropies Data for Health Initiative. 2020
 - Manual ICD-10 mortality coding quality assessment tool: User guide. 2020.
- Analysing Mortality and Cause of Death, ANACoD V3 electronic tool. WHO. 2021. updated: August 20, 2022
- ANACONDA 5.0.0.0 electronic tool. The University of Melbourne, Bloomberg Philanthropies Data for Health Initiative. 2020.
- ANACONDA mortality and cause of death assessment report template. 2019.
- [Implementing International Classification of Diseases Mortality Coding in the CRVS System](#). Vital Strategies. 2021

Appendix 4: Questionnaire- Assessment of ICD coding training and capacity needs, and support preferences

Your Name	
Designation	
Country	
Have you received training in ICD mortality coding previously?	
If yes, when did you receive the training ?	
Which revision? ICD-9, ICD-10 or ICD-11?	
Duration of the training?	

ICD coding of cause of death (ICD Mortality coding)	Yes or No
Which revision and edition year of the International Classification of Diseases (ICD) is used?	
Is there training on ICD mortality coding provided to coders?	
If yes, please answer Yes, No or Don't Know to the following:	
How regular is this training?	
Is this ad-hoc training provided by partners to coders?	
Are online training courses available to coders?	
Indicate below your interest for ICD mortality coding support:	
Certified online short courses	
Automated coding tools	
Staff attachment program for coders	
Regional coding centre/ off-island automated coding support	
Periodic quality review of coded data - how frequently?	
Notes (highlight challenges to producing quality cause of death data in your country)	
Notes (recommendations and suggestions)	
For e.g. Create an online forum or social media group for trained Pacific mortality coders. The forums can be for sharing information, resources, Q&A, conversations, etc. among peers. Have email exchange with coding expert to discuss uncertain cases.	