Regional Medical Death Certification Workshop Report: Tonga

5-7 December 2018

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Summary

Complete and accurate medical certification of causes of death (MCCD) are important because it provides the medico-legal management of individual cases of death and provides high quality data on underlying cause of death (COD) in the form of standardised, comparable, cause-specific, population-based mortality statistics that can be reported by time and place. It also enables the analysis of mortality trends which can assess the impact of public health interventions in a country or region; and inform the development of intervention approaches to disease/injury control priorities and allocation of resources both at national and international levels.

The purpose of this report is two-fold:

1. To document the activities and content of the recent MCCD Training workshop undertaken in Tonga in December 2018
2. To provide recommendations for a way forward for this training and its related activities for the future

The report documents 'key messages' *for* the participants, as well as the 'issues' surrounding death certification practices and processes *from* the participants along with their recommendations.

The key recommendations for future trainings focus on

- potential Pacific trainers for in-country and between-countries trainings;
- Development of a user-friendly training package (short version) that covers the main MCCD topics but that can be run in half a day, to cater to the busy schedule of doctors.
- Undertaking a mapping exercise to document and keep tab of people/countries trained, evidence of in-country training, health information system reporting of deaths as a proxy indicator of death certification quality, laws and policies related to death certification and gaps that can be addressed to improve processes and death certification reporting, and protect the doctors. Providing this level of detail from countries will help not only the countries but development partners as well on strategies to deal with do-able, country-specific, or regional level issues that improve mortality data and reporting for the region.
- For the future, SPC and donor partners to consider putting together a recommendation paper to a Pacific 'Heads-of-Health' meeting to institutionalise MCCD training into national training programmes of the Pacific countries.

Introduction

Complete and accurate medical certification of causes of death (MCCD) are important because it provides the medico-legal management of individual cases of death; [1] it provides high quality data on underlying cause of death (COD) in the form of standardised, comparable, cause-specific, population-based mortality statistics that can be reported by time and place; [1, 2] and it enables the analysis of mortality trends which can assess the impact of public health interventions in a country or region; and inform the development of intervention approaches to disease/injury control priorities and allocation of resources both at national and international levels. [2, 3]

Death certificates (DCs) are completed by doctors. How well a doctor diagnoses the train of clinical events that led to a person's death depends on a number of factors including the level of training received on how to correctly certify a cause of death that is in line with the international classification of diseases (ICD) guidelines.

To ensure that medical doctors are able to certify correctly according to ICD guidelines and standards, basic training in MCCD as well as an appreciation of the importance and significance of accurate COD information are essential.[4]

In the Pacific, a multi-country study on seven Pacific countries found variable levels of completeness of mortality data, with low quality cause-of death data.[3] Recognising that the quality and availability of statistics in the Pacific is less than adequate,[5] a Ten Year Pacific Statistics Strategy (TYPSS) was formulated by the Secretariat of the Pacific Community (SPC) with the support of the Brisbane Accord Group (BAG) partners to address this data gap in the Pacific.[5, 6]

As part of ongoing activities to improve mortality statistics in the Pacific, several death certification training workshops have been undertaken in Fiji (2010-2011) to final year medical students and doctors in all sub divisions; similar in-country trainings were also undertaken in Tonga (2011), and Kiribati (2014). Trainers for death certification were public health doctors based at College of Medicine, Fiji National University, who had been trained at the University of Queensland Health Information Systems Knowledge Hub (HIS Hub). In recent years, SPC as the regional secretariat for BAG, has conducted further trainings in Samoa, Tuvalu, and Fiji.

This report describes the scope of activities undertaken at the MCCD regional workshop that was held in Tonga, including the content and method of training, the discussion of regional medical certification activities, issues, and solutions; and it ends with recommendations for a sustainable way forward for this important training for the Pacific.

Objectives

A three-day, regional MCCD training for doctors was undertaken in in Tonga, from 5-7 December 2018. The objectives of the course were:

1. To highlight the importance and significance of MCCD information as a source of data on underlying cause of death for the Pacific islands
2. To explain the international standards for MCCD, and how the underlying cause of death is determined
3. To discuss common issues/errors encountered in completed death certificates and solutions
4. To discuss issues surrounding sensitive information and solutions
5. To document the outcomes of this training, in particular, messages, issues and participant feedback
6. To make recommendations for future trainings, resources available, and the type of regional support required.

Participants

The participants for this regional training were largely medical doctors from the Cook Islands (2), Fiji (1), Kiribati (1), Samoa (2), Solomon Islands (4), Tonga (8), Tuvalu (2), and Vanuatu (3). The Tongan health information senior staff (2) also attended some of the sessions. Refer to Appendix 1 for the full participant list.

The training

Content

The three-day training covered the following topics relevant to medical death certification, issues and related topics and some solutions. For a detailed timetable, refer to Appendix 2.

Day 1

1. The importance of cause of death data
2. Factors that affect the quality of cause of death data
3. Overview of the medical certificate of death and underlying cause of death
4. Common errors in medical certification & local examples
5. Certifying external causes
6. Certifying maternal deaths

Day 2

7. Certifying child deaths

8. Certifying perinatal deaths
9. Case studies and practice
10. Dealing with medical uncertainty
11. The role of the review committee
12. Social and organisational influences on reporting of cause of death

Day 3

13. Overview of medical-legal cases
14. Local reporting requirements and processes
15. Giving evidence in legal proceedings
16. Dealing with social influences
17. Data and privacy of cause of death information
18. Challenges and potential solution for Institutionalisation of certification training into national medical training programmes
19. Conclusion and summary.

Method and activities

The training was conducted as a mixture of didactic teaching (30 minutes) and group exercises (1.0-1.5 hours). Learning aids included PowerPoint presentations, medical case vignettes accessed at the SPC site (sdd.spc.int) for group exercises, and blank sheets for group feedback. Role playing was also included to demonstrate steps for handling 'dead on arrival' cases. The participants were spread out in 5 tables and a nominated member from each group was expected to present to the wider class on their findings. In some of the activities, the participants were required to sit in their country groups and report on country-specific issues.

Facilitators

The trainers were a mixed group of doctors in the clinical and public health fields from Fiji and Samoa, coders, and health information experts from development partners based in Fiji and Australia. The mixed group served two purposes: i) to provide the doctors with an idea of how death certification records were processed and reported for health planning; ii) to provide health information staff a snapshot of the challenges that doctors face with medical death certification.

The training facilitators included:

- The Pacific team: Dr. Ilisapeci Kubuabola (Fiji National University), Dr. Dina Tuitama (Samoa Ministry of Health), Dr. Iris Wainiqolo (Training Consultant, Fiji);

- Development partners: Ms Lauren Moran (Australian Bureau of Statistics), Ms Emma Torrrens (Australian Bureau of Statistics); Ms. Sue Walker (Queensland University of Technology); Ms. Katri Kontio (World Health Organization); Mr. Romain Santon (Vital Strategies) and Dr. Pulane Tlebere (United Nations Population Fund)
- The secretariat, SPC represented by Ms. Gloria Mathenge and Mr. David Abbott.

Prior to the workshop, the team held a series of email and teleconference meetings to discuss the training agenda, training format, session presentations; and after the training, a debrief session was organised by the secretariat to discuss the overall training, outputs and sustainability.

Outcomes

Overall view on the training

Every training is different because it often depended on the level of experience of the doctors in attendance. The regional training in Nadi, Fiji (November 2017) was mostly attended by young doctors who were at the front lines and they provided a snapshot of the challenges encountered at that level. In this training, more senior doctors (clinical and public health doctors) were in attendance and while similar issues highlighted by the young doctors in the 2017 Nadi training were reiterated, the new perspectives emphasized at this meeting by the senior doctors were in relation to policies, processes, issues of the health system and medico-legal cases in the courts (the process and expectations on the doctor).

The discussions emphasized the need for doctors to know more than just managing patients; to know laws and policies that govern practice and the responsibilities of the medical officer. Where processes were not clear, it was imperative that they sought clarification and standardization of the relevant death certification procedures within the hospital, in the outer islands/rural areas and when working in partnership with Police and the Courts.

Overall the training was robust especially with inputs from the clinical and public health perspectives discussing issues related to hospital and community deaths and their challenges.

The next section details the:

i) ‘main messages’ for the participants for each day; and
ii) ‘key issues and matters’ that arose from the related group discussions that followed each teaching.

It ends with a list of recommendations that the participants put together to improve MCCD for their countries and for the Pacific.

Key messages & issues

DAY 1: Key messages	DAY 1: Key issues/matters discussed
Doctors must follow the international standards for MCCD, where the underlying cause of death is determined.	Coders were not comfortable to verify death certificates with certifying doctor; Doctors must be prepared to clarify issues raised by coders and not be offended.
Common errors seen in death certificates include: - Missing demographic information (e.g. age, sex) - Incorrect sequence of events resulting in death - Multiple causes on a single line in Part 1 - Recording of mode of death (e.g. cardio-respiratory arrest) rather than cause of death - Recording symptoms (e.g. fever, headache), non-specific descriptors (e.g. viral illness, sudden death, old age) or risk factors (e.g. smoking) - Not enough detail (e.g. Diabetes, hepatitis, cancer, abscess, 'external causes') - Recording 'rule out' or 'suspected case of' - Missing 'time' information in Part I - Illegible handwriting - Use of non-standard abbreviations in a DC unknown to the coder	Doctors identified some of the common factors that affect death certification (DC) completion: - Sensitive case reporting because of stigma especially in our small communities - Young inexperienced doctors having to write out a DC for a deceased with multiple co-morbidities - Delayed certification of death: For example, Tonga does not need a DC to bury their dead; however, some families do late requests for a DC (months or years later) and the doctor is not familiar with the case. - Missing patient folder or patient notes - Dead-on-arrival (DOA) cases with no past medical history & where there is no pathologist to determine cause of death; this is especially the case for doctors working in the outer islands

Identify common factors that affect the quality of a death certificate completion in each country for training and data quality purposes.	- Lack of support services (e.g. lab, pathologist) to help certifying doctor complete a DC - Junior doctors following the senior doctors in the way they certify deaths - Culture where post mortems are refused so that underlying cause of death remains unknown - Pressure from families of the dead or from important government officials - Dealing with Police cases <u>Deaths due to sensitive conditions</u> (e.g. HIV/AIDS, suicide) *– the issue was in regards to the issuance of the same death certificate as evidence for other purposes before burial (e.g. release of funds). Could a similar form without the details of the underlying cause of death be issued for burial purposes?* In some of the countries like Fiji, an underlying cause related to HIV/AIDS (e.g. immunocompromised) can be recorded because the Ministry keeps a register of diagnosed cases of HIV/AIDS and the senior mortality coder is one of few people who has privy to this register. *In some of the countries (e.g. Tonga, Vanuatu, Kiribati, Tuvalu), this is not an issue because you don't need a DC for burial of the dead.*
<u>External causes of death</u> Injuries are poorly certified causes of death in the Pacific islands. Most end up as 'injury-non specified'. In certifying an external cause of death, describe as much detail as possible such as:	*For deaths due to injuries are Police cases and the process of certification and who is responsible is sometimes not clear as Police may not get back to the doctor.*

- The injury itself (e.g. basal skull fracture) - How the injury occurred (e.g. pedestrian hit by motor vehicle) - Manner of death (e.g. accidental)	
<u>Maternal mortality</u> Maternal mortality is poorly measured in most Pacific island countries and territories; the only way to monitor trends is through complete and accurate reporting of causes of death If a woman dies during pregnancy or within 42 days of the termination of the pregnancy, the fact that she was pregnant MUST be indicated on the DC, even if the direct cause of death is not related to the pregnancy, childbirth or puerperium.	*Country DCs that do not provide the level of details that would prompt a doctor to decide on whether the death of a woman is a maternal or pregnancy-related death risk being missed or misclassified.* There was some confusion (among the facilitators) around the current death certification practice used under the ICD-10AM and the new ICD-MM (maternal mortality). This was probably not the forum for this discussion, however, the facilitators agreed that while these issues are being ironed out by WHO, that for the purpose of training, the important message to emphasize was that doctors certifying the death of a woman must verify and record if the woman was pregnant, or was within 42 days of termination of pregnancy at the time of death, irrespective of cause.
DAY 2: Key messages	**DAY 2: Key issues/matters discussed**
<u>Institutionalization of MCCD training</u> MCCD training needs to be institutionalised in-country if mortality data recording and reporting is to improve. There are several possible ways to institutionalise this programme: - As part of medical school training - As part of intern induction programme - As part of continuing medical education (CME) programme for doctors The World Health Organization (WHO) has an online, self-paced training module for death certification. This can be accessed through	*Not all countries have MCCD training for their doctors. With regional support, how can this training be tailored and delivered in-country?* Countries examples where training is delivered: - Fiji – MCCD training started in 2010 at the Fiji National University Medical College and this was later incorporated as a MOH deliverable for intern induction. The mortality coders ran the training at every quarter in each sub division, as a 2-hour session covering the basics (why it's important, common errors in Fiji DCs, overview of MCCD and underlying cause of death, specific conditions, with exercises)

the Pacific Open Learning Health Net (POLHN) at https://polhn.org/courses/cause-of-death	- Samoa – MCCD training is part of induction programme for new doctors. University of Samoa was approached to run this training but this has not been successful yet. - Solomon Islands – MCCD training is included in intern induction programme or as a CME during department attachment - Tonga – MCCD training is included in the week-long induction programme before internship starts or during the public health rotation, or as a CME training - Kiribati – training is included during the internship orientation. It is a four-day training. - Tuvalu and Vanuatu to consider inclusion of this training for doctors in their respective countries.
Child deaths Child deaths are recorded in the same death certificate as adults following same principles for underlying cause of death For external causes of death (e.g. injury, neglect, assault), call the Police! For dehydration, infection, cancers, also provide additional details, as for adult certification.	The child abuse cases are sensitive cases to handle in the communities. One of the doctors, a paediatrician shared how the involvement of Police in a suspected child abuse case had the family coming after him. *In small communities like the Pacific, doctors need to be protected and supported in such situations.*
Perinatal Deaths Know the lower limit of the perinatal period for your country. WHO definition covers the period from 28 completed weeks of gestation up to 7 days after birth. Countries with advanced support may start at 22 completed weeks gestation. The DC for a perinatal death does not ask for an underlying cause of death. Instead it asks for: - Main cause in the foetus (stillbirth) or infant (live birth), and	Some countries no longer use the perinatal DC (e.g. Fiji) as the general DC allows for the recording of perinatal deaths. Other countries still use a perinatal DC (e.g. Samoa).

- Main cause in the mother - Other causes in the foetus/infant or maternal diseases/conditions affecting the foetus/infant The aim is to highlight issues relating to the mother and baby that can be intervened with. DON'T FORGET that for perinatal deaths, you have to fill out: 1. A birth notification, and a 2. DC for perinatal death A doctor can use a general DC to record a perinatal death, where there is no specific perinatal DC.	
<u>Medical uncertainty</u> There is always an element of uncertainty in diagnosing the underlying cause of death of a person. It is OK to state "Probable" to indicate uncertainty in the diagnosis. AVOID terms like, 'suspected, rule out, possible' as this will be coded as, 'ill-defined'. Verbal autopsy is a tool that can be used to gather information on causes of death, where very little information is known about the deceased. This is especially for DOA cases.	What is the country practice for DOA cases? - Where cause-of-death is unclear, the case is referred to the Police or to the Pathologist - *In some of the countries that lack a pathologist or lab services, this remains problematic (e.g. Kiribati, Tuvalu).*
<u>Mortality review/audit</u> The purpose of this committee is threefold – • To evaluate cases where the sequence of events is unclear and come to a better understanding of what happened in these events through peer contributions and review • To identify what steps could have been taken to potentially avoid the death occurring and modify procedures and health programs accordingly • To provide an opportunity for ongoing CME and assist doctors to stay up to date.	Most of the Pacific countries have some form of mortality review committee that meet at department or hospital level, at 1-3 month intervals, to carry out the 3 purposes noted here. The meetings are held regularly in some of the countries, while in others, this may not be the case. For some countries, this is run as a CME for doctors only (e.g. Cook Islands). *Some of the issues that the doctors discussed included:*

Use the opportunity of a mortality review/audit to double check a death certificate and ensure that the correct sequence has been written out.	- *Identification of health system problems that are not resolved because there is no clear pathway on how to remedy these issues.* - *Tuvalu used to run mortality review meetings every 3 months, but this stopped in 2016.* - *Samoa reviews all hospital deaths and death certificates are filled only by senior registrars and consultants, to minimise on inaccuracies for underlying cause of death.*
DAY 3: Key messages	**DAY 3: Key issues/matters discussed**
<u>Medico-legal cases</u> Every patient admitted to a health facility is a potential medico-legal case; therefore doctors must take the time to write their clinical notes clearly, legibly, with no slangs/abbreviations/twinking, and, as soon as practicable to minimise recall issues. Deaths that trigger the medico-legal process include: • Assaults (probable/possible) • Suicide • Child neglect/abuse • External causes with unclear intent • Unexplained/unexpected deaths • Cases where there is concern for negligence/dispute about treatment For any suspicious case, DOCUMENT your observations carefully and clearly. Junior doctors writing a Police report should consult with senior staff (e.g. Consultant) to make sure that the report is satisfactory, and	Each of the country groups presented the process that they follow for medico-legal. During the discussions, some of the issues that became apparent include: • *Suspicious cases, the doctor in Kiribati and Tuvalu does not complete a DC to safeguard themselves, as no support services to verify their suspicion.* • *A DC is not required in order to bury the deceased in Kiribati, Solomon Islands (rural areas), Tonga (deaths in the community), Tuvalu, and Vanuatu (rural).* • *Suspicious deaths in the Cook Islands are sent to the main hospital but this is an expensive exercise as it costs $20,000 to bring a forensic pathologist from New Zealand for such a case. For deaths in the outer islands, the issue with cost weighs on the decisions of the certifying doctor.* • *Tonga holds tribunals (court judge, police, hospital administration) for suspicious cases but tribunal decisions don't always come back to doctors so that a DC can remain incomplete. Likewise, for Police*

signed off by both the doctor and consultant. This is a safety net for doctors. "Being busy" does not stand in the court of law Doctors need to know the laws/policies for health, medico-legal requirements, and their responsibilities. Refer to: www.paclii.org (Pacific Islands Legal Information Institute)	*cases, the outcome does not always come back to the certifying doctor so that the case remains undetermined/unknown.* • *Need for a policy to make clear the process between the doctor and the legal services (eg. Police, tribunal) in-country to ensure that deaths certificates are completed* • *Doctors unclear of medico-legal processes outside of the hospital.* • *Families refusing a post mortem because of culture (e.g. Tonga) means that the DC is incomplete and cause of death is undetermined and therefore not counted.*
<u>Engaging with legal proceedings:</u> - Dress professionally - Stick to your notes, take time to consult your notes, and stay consistent with what you say - When cross-examined by the prosecuting lawyer, talk to the judge and jury, NOT the lawyer!	Useful to call a pre-trial conference to meet with the prosecuting and defence teams and explain the case in question with them so that the facts are clear. At the time of trial, it is easier to go over the case, with the doctor stating the facts of the case.
<u>Organizational/social influences on reporting and death certification</u> There will always be social and organizational influences to death certification and reporting. When uncomfortable, hesitant or pressured, talk to senior doctors (e.g. Consultant) to protect yourself.	Factors identified by doctors that can influence or cause hesitation with medical DC reporting: • Sensitive conditions (HIV/AIDS, suicide, abuse of child/adult) • Influential families/social status of the deceased coming into play to short-cut or bypass or influence processes (e.g. Sensitive cases). • Time delay between death and request for DC often problematic (discussed in Day 1)

	• Family pressure to change what is reported on a DC so that the family can claim insurance for the dead; this can cause bad relations socially. • Cases of 'missing at sea' with very little evidence of death, doctors are not obliged to issue a DC • DOA cases in the outer islands - cost of taking a body to the main hospital and cost of forensic pathologist.

Recommendations of participants for MCCD training:

Training:

- Include MCCD training in CME, intern induction programmes
- Standardise the training programme
- Have short courses on MCCD
- Review POHLN courses for death certification
- Involve coders/medical records staff in such trainings
- More legal guidance in training
- Re-look some vignettes in the training and make them a bit clearer.

Audits:

- Doctors to find out about in-country death certification legislation/policy (e.g. process, doctor's responsibilities)
- Review in-country MCCD format and formats and see if it is in line with the international standard of reporting
- Audit in-country DCs to identify common certification errors and document certification processes
- Strengthen audits/reviews of deaths in hospitals

Policies

- Standard operating procedure (SOP) about death certification – build accountability within process so that the most senior doctor should have full responsibility on what is completed in death certificates (e.g. Samoa, only consultants and senior registrars can complete a death certificate);
- To have a written process in place on the process of registering vital events such as death in the outer islands/communities
- Have a National Mortality Technical Working Group to move things forward (i.e. address issues relating to proper death certification and processes)

- To have clear policies on how to handle DOAs, missing persons, medical misadventure

Reporting

- When writing a MCCD, don't forget 'non-obstetric causes' of maternal deaths
- Participants to an MCCD training should write a report for their Ministry.
- Training facilitators to share training report with participants

Regional support:

- Possibility of sending a recommendation paper through the Heads of Health meeting to institutionalise MCCD training into national training programmes of Pacific countries. Regional policy for death certification
- Regional policy for death certification
- Participants and facilitators to share contacts

Recommendations

Potential trainers to target for the next round of training

Every participant that attends a regional MCCD workshop is a potential trainer for their country or for the region. The aim should be to build a pool of Pacific trainers (clinicians, coders) who are capable of running these trainings in their own countries and for the Pacific region.

At this training, the attendance of senior clinicians from each of the countries provided invaluable inputs about the need for policies to clarify on certain processes relating to MCCD activities in the hospital, in the outer islands/rural areas, and in partnership with Police and the legal system. The pathologists in Tonga were invaluable for their first-hand experiences on court cases: what to expect, what to do and what not do. Their input would be welcomed for future trainings.

Missing from this training were mortality coders *from the Pacific* to provide their perspectives on how they process death certificates and where doctors can help them. They too would be invaluable for the next regional or in-country trainings.

Preparation of a training package

Long version

The regional training such as this one conducted in Tonga should remain a train-the-trainers MCCD workshop where potential doctors and coders undergo the full training as outlined in the timetable (Appendix 2). From a sustainability perspective, the current training materials can be improved by preparing session-by-session guides to accompany the PowerPoint slides and a Word document that provides instructions around each session, the details of which are discussed below for the short version of the package.

Short version

From past experiences with MCCD training for doctors in Fiji, time was always an issue. The Ministry of Health was willing to release doctors to attend the training when it ran for half a day (9.00am-1.00pm). At the recent training in Tonga, doctors from other Pacific countries voiced the same sentiments about time constraints and the need for a shorter training package.

At least for Fiji, a short training package was a four-hour training session, and the topics that were covered included:

1. Cause of death data – why is it important and how is it used?
2. Factors that affect the quality of cause-of-death data

3. Overview of the medical certificate of death and underlying cause of death
4. Common errors in medical death certification with in-country examples
5. Recording specific conditions (e.g. external causes, cancers, pregnancy, infections…)
6. Case vignettes, group presentations/discussions, end-of-training feedback

For the future, a similar 'short' training package (taken from the 'long version' of the package) is suggested using already available teaching materials gathered from the regional trainings. This MCCD training package should be prepared in a user-friendly way to assist doctors/coders who have been trained at the regional train-the-trainers workshops to run their own in-country trainings. Similar to the WHO TEACH-VIP training package format,[7] each session could have a:

1) Word document that outlines the purpose of the session, what it hopes to gain, session notes (these are notes for each PowerPoint slide), Group exercise, readings/references (see Appendix 3), and
2) PowerPoint presentation

Country trainers should be encouraged to use local data and examples as much as possible (e.g. local examples of common errors on DCs, local policies/laws on death certification, etc.), and to encourage participation from peers in the hospital (e.g. paediatrician, Obstetrician, pathologist) and partners (police, lawyers, coroner), as it can also create the platform to discuss some of the issues on processes that are not clear to the doctors/partners (e.g. police, court) and may encourage the writing of policies around these processes. There is potential to clarify a lot of the issues raised in this training but at country level, using the MCCD training as the platform.

Like any training material, this package once put together, would need to be evaluated for relevance, ease of use, impact and updated from time to time.

Mapping exercise

Conduct a mapping exercise (if not already done) to collect information on:

a) Training
   - Number of doctors/coders (and countries) that have undergone the SPC-coordinated MCCD regional trainings
   - Evidence of MCCD training conducted in these countries, including formats (e.g. as CME, intern induction), frequency (e.g. once a year), and number trained.
   - Map challenges to training in countries where no further MCCD training has been undertaken in-country and develop a support strategy that can utilise available resources (e.g. training package) and trainers from other Pacific countries to assist.

b) Health Information System reporting

- The 'top causes of death' reported for countries (available in Ministry of Health reports or hospital health information section) is a reasonable proxy indicator that provides an indication to the level of accuracy on cause-of-death data recorded for a country (e.g.
- DC format if in line with the international standards and gaps that would require support for improvement
- Number of doctors/coders familiar with undertaking DC audits to determine and report on commonest errors in death certification, that provides evidence for training.

c) Laws and policies related to death certification
   - Existing laws and policy frameworks related to death certification and health system improvements (some identified by doctors at this training) that could potentially improve the recording of deaths for countries, and protect doctors (esp. dealing with sensitive or Police cases)

d) Existing research or reports related to death certification that have documented issues for the Pacific (e.g. Carter publications)[3, 8, 9] that can provide background information to help us (as a region or country) gauge the level of progress achieved, persistent challenges (resources, system) and plan for the way forward.

The purpose of this mapping is to provide a picture of the policy and practice context for death certification in the Pacific that is relevant to and may influence the strategies for improving processes and the quality of death reporting in the region. It also provides SPC and donor partners with information that will assist them when making decisions about the type of support and delivery strategies to provide (country vs regional) for the Pacific region.

Regional support

For the future, SPC and donor partners to consider putting together a recommendation paper to a Pacific 'Heads-of-Health' meeting to institutionalise MCCD training into national training programmes of the Pacific countries. This formalises and provides the support needed to ensure that MMCD training is a country activity and in the long term, to see an improvement in the mortality statistics for the region.

Appendices

Appendix 1: **MCCD Training participants, Tonga, 5-7 December 2018**

No.	Participants	Country	Organisation/workplace
1	Dr Ni Ni Wynn	Cook Islands	Ministry of Health, Cook Islands
2	Dr. Vakaola Mafi	Cook Islands	Ministry of Health, Cook Islands
3	Dr. Vasitia Cati	Fiji	Lautoka Hospital, Lautoka
4	Dr. Richard Tekobea	Kiribati	Tungaru Central Hospital, Tarawa
5	Dr. Robert Thomsen	Samoa	Ministry of Health, Samoa
6	Dr. Tito Kamu	Samoa	TTM Hospital, Clinical division
7	Dr. Leeanne Panisi	Solomon Islands	Ministry of Health & Medical Services
8	Dr. Divinol Ogaoga	Solomon Islands	Ministry of Health & Medical Services
9	Dr. Chris Dereveke	Solomon Islands	Ministry of Health & Medical Services
10	Dr. Steven Lumasa	Solomon Islands	Ministry of Health & Medical Services
11	Dr Kalo Tavo	Tonga	Ministry of Health
12	Dr. 'Ana Mahe	Tonga	Ministry of Health
13	Dr. Joseph Takai	Tonga	Ministry of Health
14	Dr. Pafilio Tangitau	Tonga	Ministry of Health
15	Dr. Siosaia Faupula	Tonga	Ministry of Health
16	Dr. Davina Akauola	Tonga	Ministry of Health
17	Dr. Seventeen Toumoua	Tonga	Ministry of Health
18	Dr. Eka Buadromo	Tonga	Ministry of Health
19	Mr. Siope Kupu	Tonga	Tonga Health Information Section, MoH
20	Dr. Teeve Valasi	Tuvalu	Ministry of Health
21	Dr. Tuese Falesa	Tuvalu	Ministry of Health
22	Dr. Harry John	Vanuatu	Ministry of Health
23	Dr. Tannia Binihi	Vanuatu	Ministry of Health
24	Dr. Santus Wari	Vanuatu	Ministry of Health

Appendix 2: MCCD Training timetable, Tonga

Day 1

Time	Topic	Facilitator/ presenter
8:00-8:30	Registration and arrival of participants	
8:30-9:00	Opening and welcome remarks - Mr. David Abbott, Statistics for Development Division, SPC	
9:00-9:30	Introduction of workshop participants	All participants
9:30-10:00	Introduction and overview of national CRVS commitments	Gloria Mathenge
10:00 – 10:30	**Coffee break**	
10:30 – 11:15	The importance of COD data and how it is used	Emma Torrens
11:15 – 11:30	Factors that affect the quality of cause of death data	Lauren Moran
11:30 – 12:00	Overview of the medical certificate of death and underlying cause of death	Sue Walker
12:00 – 1:00	**Lunch**	
1:00 – 1:30	Common errors in medical certification & local examples	Dr. Chris Dereveke
1:30 – 2:00	Case studies and examples	All facilitators
2:00 – 2:30	Certifying external causes	Dr. Iris Wainiqolo
2:30 – 3:00	Certifying maternal deaths	Dr. Ilisapeci Kubuabola and Dr. Pulane Tlebere
3:00 – 3:30	**Coffee break**	
3:30 –4:15	Case studies and examples	All facilitators
4:15 –4:30	Review and Wrap up (Day1)	Dr. Dina Tuitama

Day 2

Time	Topic	Facilitator/ presenter
8:00 –8:30	Registration	
8:30 –9:00	Recap of case study examples	Sue Walker
9:00 –10:00	Institutionalisation of certification training into national medical training programmes, country practices, regional support options Discussion	Romain Santon & Dr. Ilisapeci Kubuabola
10:00 – 10:30	**Coffee break**	
10:30 –11:00	Certifying child deaths	Dr. Dina Tuitama
11:00 – 11:30	Certifying perinatal deaths	Lauren Moran
11:30 – 12:30	Case studies and examples	All facilitators
12:30 – 1:30	**Lunch**	
1:30 - 2:30	Dealing with medical uncertainty (Including case studies)	Lauren Moran
2:30 - 3:00	The role of the review committee	Dr. Iris Wainiqolo
3:00 – 3:30	**Coffee break**	

3:30 – 4:00	Group work report back	All facilitators
4:00 – 4:30	Review and Wrap up (Day2)	Dr. Iris Wainiqolo

Day 3

Time	Topic	Facilitator/ presenter
8:00 –8:30	Registration	
8:30 –9:00	Welcome and recap of day 2	Dr.Ilisapeci Kubuabola
9:00 –10:00	Overview of medical-legal cases	Dr. Dina Tuitama
10:00 – 10:30	**Coffee break**	
10:30 – 12:00	Engaging with legal proceedings, case studies and practice	All facilitators
12:00 – 1:00	**Lunch**	
1:00 – 2:30	Social and organisational influences on reporting and certification of cause of death (introduction, group discussions and report back)	Emma Torrens
2:30 – 3:00	Country Group work: Planning for improvements in COD reporting and data	All facilitators
3:00 – 3:30	**Coffee break**	
3:30 – 4:00	Feedback on plans for improvement, recommendations for regional support (Introduction, Group work, Report back)	
4:00 – 4:30	Closing remarks	BAG partners
	Conclusion and Wrap up	Gloria Mathenge

Appendix 3: MCCD training package – SAMPLE of Instruction document in Word format

Session 1. Cause of death data – why is it important and how is it used?	Lesson 1 Session time: 30 minutes
Medical Certification of Causes of Death Training	
Overview and importance of cause-of-death data	

Main objective of this session:

To introduce participants to a brief overview of the significance of cause-of-death data and how it is used

Core competencies that participant should attain by the end of the session

Be able to gain an understanding of:

1. the importance of cause-of-death data
2. how cause-of-death data is used at various levels in a country and internationally
3. who completes the death certificate
4. measuring cause-of-death
5. challenges around death certification

Session notes (for each PowerPoint slide)

Slide number	**General topic description**
1	This section provides a general overview on vital statistics, specifically, death registration and why it is important.
2	Question to participants to determine if anyone has used cause-of-death data and for what purpose.

Group exercise

In your groups, discuss these two questions and report back to the wider group.

1. Have you used any information on cause-of-death data in the last few months or in the past year?
2. What sort of information on causes of death were you after and for what purpose(s)?

References

1. Handbook for doctors on of cause of death certification (This resources is developed by the University of Melbourne as part of the Bloomberg Philanthropies Data for Health Initiative and is available at: http://mspgh.unimelb.edu.au/__data/assets/pdf_file/0006/2087430/COD_RT1_Handbook_101604.pdf)

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1. Aung E, Rao C, Walker S. Teaching cause-of-death certification: lessons from international experience. Postgraduate Medical Journal. 2010;86(1013):143-52.

2. Myers Kathryn A, Farquhar Donald RE. Improving the accuracy of death certification. Canadian Medical Association. 1998;158(10):1317-23.

3. Carter KL, Rao C, Lopez AD, Taylor R. Mortality and cause-of-death reporting and analysis systems in seven pacific island countries. BMC Public Health. 2012 2012/06/13/;12:436. English.

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7. World Health Organization. TEACH-VIP 2 - user's manual. Italy: WHO Press; 2012.

8. Carter K, Hufanga S, Rao C, Akauola S, Lopez AD, et al. Causes of death in Tonga: quality of certification and implications for statistics. Population Health Metrics. 2012;10(1):4.

9. Carter K, Tovu V, Tila Langati J, Buttsworth M, Dingley L, et al. Causes of death in Vanuatu. Population Health Metrics. 2016;14(7):10.1186/s12963-016-0074-4.