



ONLINE TRAINING TOOL TO IMPROVE CAUSE OF DEATH CERTIFICATION

Dr Tiana Schultz

SAMRC, Burden of Disease Research Unit, Cape Town

Co-authors: Prof D Bradshaw, Dr P Groenewald, Dr J Joubert,
Dr S Snyman

HPCSA Conference: Regulating health professionals in the 21st century,
Emperors Palace, Johannesburg, 18-20 Aug 2019



MORTALITY

“Mortality data is the indication of numbers
(**people**) of death by **place**, **time** and **cause**.”

– World Health Organisation

DIFFERENT PUBLIC HEALTH RESPONSE FOR UNDERLYING CAUSE OF DEATH

A - 34 year old male

HIV positive, lives in informal settlement, dies of disseminated Tuberculosis

B - 34 year old male

Builder, lives in informal settlement, shot and killed while walking home from work. **Gang related shooting**

SA Death Notification Form (DNF) / DHA - 1663

G.1 FOR DEATHS OCCURRING AFTER ONE WEEK OF BIRTH

Instructions: Section G.1 is to be completed for all deaths that occurred after one week of birth

77. CAUSES OF DEATH

Part 1 Enter the disease, injuries or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. **List only one cause on each line**

Approximate interval between onset and death (Days / Months / Years)

IMMEDIATE CAUSE (final disease or condition resulting in death)

a) Immediate cause
Due to (or as a consequence of)

Sequentially list conditions, if any, leading to immediate cause

b) Intermediate cause
Due to (or as a consequence of)

Enter UNDERLYING CAUSE last (Disease or injury that initiated events resulting in death)

c) Intermediate cause
Due to (or as a consequence of)

d) Underlying cause

Part 2 Other significant conditions contributing to death but not resulting in underlying cause given in Part 1

Contributing conditions

78. If a female, was she pregnant at the time of death or up to 42 days prior to death? ()

82.1 Yes

82.2 No

79. Method used to ascertain the cause of death (tick all that apply):

79.1 Autopsy 79.2 Post mortem examination

79.3 Opinion of attending medical practitioner

79.4 Opinion of attending medical professional

79.5 Opinion of registered professional nurse

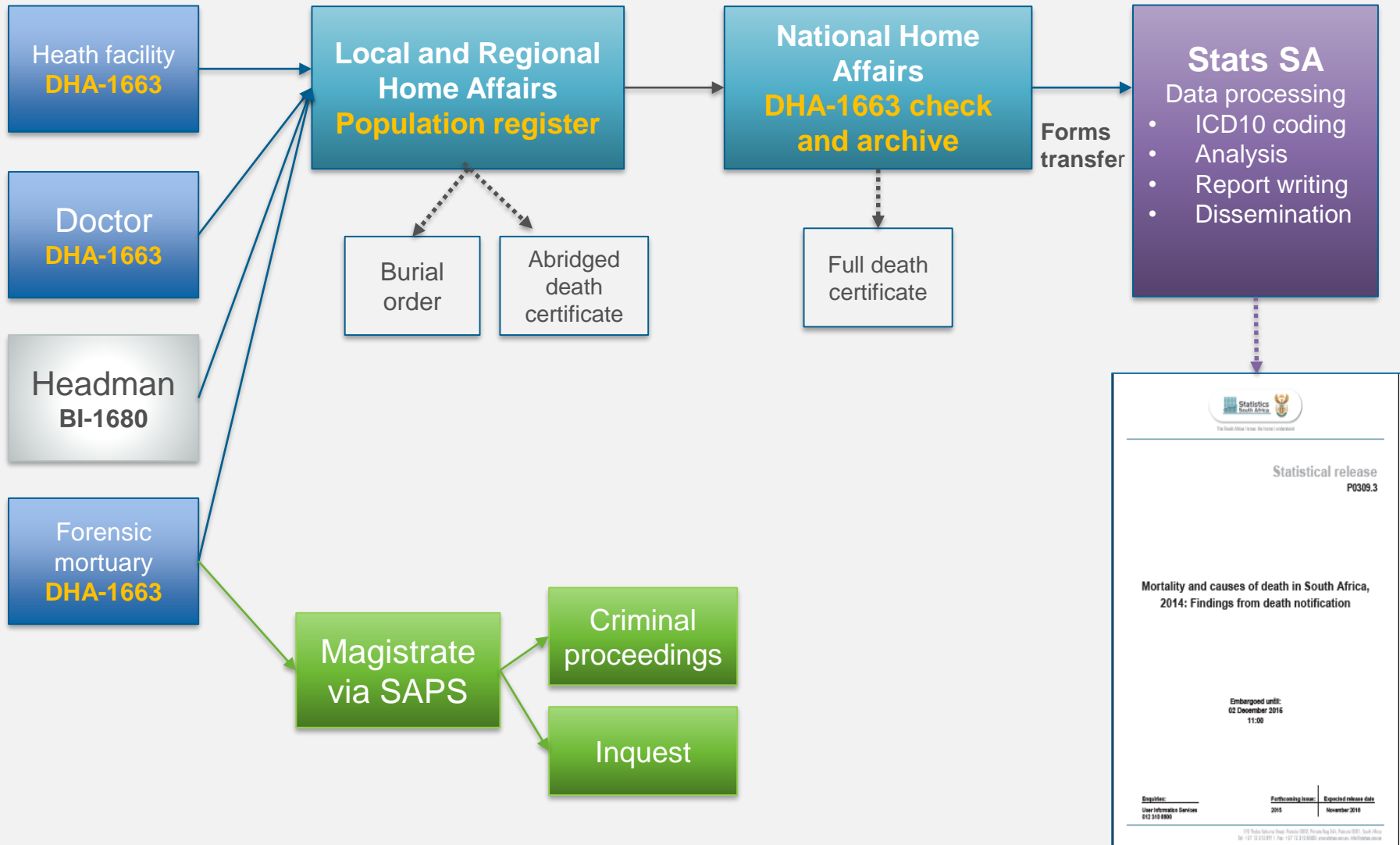
79.6 Interview of family member

79.7 Other (specify) _____

G.2 FOR STILL BIRTHS AND DEATHS OCCURRING WITHIN ONE WEEK OF BIRTH (PERINATAL DEATHS)

Instructions: Section G.2 is to be completed for all still births and deaths that occurred within one week of birth (perinatal deaths)

DEATH REGISTRATION AND DATA FLOW





QUALITY OF SA CAUSE OF DEATH DATA

Civil registration and vital statistics system(CRVS): The registration of deaths in South Africa has increased since 1994 from **50%** to more than **90%** for adults.

Need for improvement: Accurate underlying cause of death certification by clinicians

FIVE CATEGORY CLASSIFICATION OF ALL UNUSABLE CODES IN SA, 2014

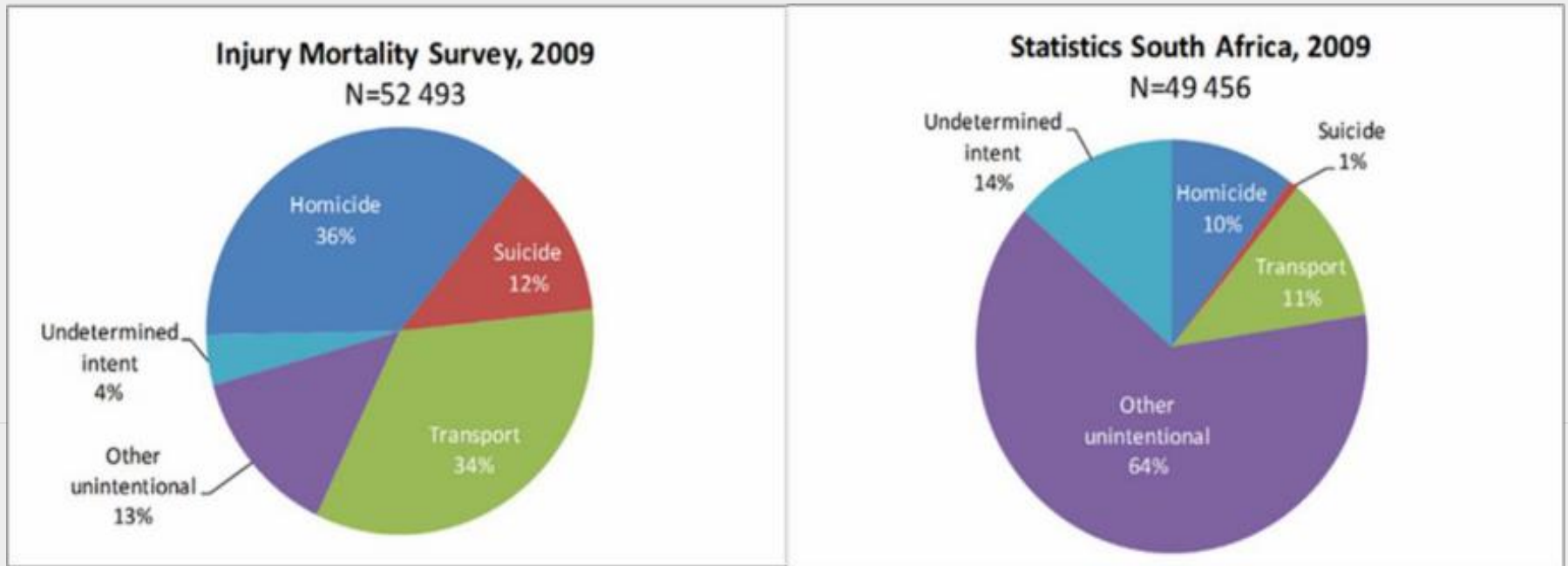
Unusable codes classification		Nr of deaths with unusable codes	% of total causes
Category 1	Symptoms, signs and ill-defined conditions	58,342	12.3
Category 2	Impossible as underlying cause of death	5,282	1.1
Category 3	Intermediate cause of death	47,544	10.0
Category 4	Immediate cause of death	4,560	1.0
Category 5	Insufficiently specified causes within ICD chapters	92,853	19.6
Total unusable and insufficiently specified causes		208,581	44.1

LEADING CAUSES OF DEATH 2012


SOUTH AFRICAN NATIONAL BURDEN OF DISEASE STUDY 2012				STATISTICS SOUTH AFRICA 2012			
Rank	Cause of death	Number	% of all deaths	Rank	Cause of death	Number	% of all deaths
1	HIV/AIDS	153661	29.1	1	Ill-defined and unknown causes	65033	13.5
2	Cerebrovascular disease	39830	7.5	2	Tuberculosis	47472	9.9
3	Lower respiratory infections	25977	4.9	3	Influenza and pneumonia	26385	5.5
4	Ischaemic heart disease	24969	4.7	4	Cerebrovascular disease	23994	5.0
5	Tuberculosis	23817	4.5	5	Other forms of heart disease	21612	4.5
6	Diabetes mellitus	18894	3.6	6	Diabetes mellitus	21230	4.4
7	Hypertensive heart disease	18755	3.5	7	HIV/AIDS	18663	3.9
8	Interpersonal violence	18741	3.5	8	Hypertensive diseases	16195	3.4
9	Road injuries	17597	3.3	9	Other viral diseases	15057	3.1
10	Diarrhoeal diseases	16349	3.1	10	Intestinal infections	14948	3.1
Top 10 causes		358590	67.8	Top 10 causes		270589	56.3
Total		528947	100	Total		480476	100

Estimated versus certified and coded leading causes of death in South Africa, 2012

INJURY RELATED DEATHS



Injury cause-of-death profile from the 2009 Injury Mortality Survey^{xi} compared with official reported statistics.



CAUSES FOR POOR QUALITY MEDICAL CERTIFICATION OF CAUSE OF DEATH

- Doctors uninformed on how the information they provide in DNF influence public health policies
- Undergraduate training in medical certification is generally insufficient
- Confidentiality – self sealing form solution
- Access to medical records
- Time constraints

TRAINING IN MEDICAL CERTIFICATION

- Past initiatives by BODRU
 - 2hr session offered in all WC hospitals
 - 2 days “Train the Trainer” workshop in each province for public sector hospitals
- Literature indicates face to face sessions with discussion and feedback improves quality of certification but difficult to offer at scale.*
- Proposed online training tool

Aung E, Rao C, Walker S: **Teaching cause-of-death certification: lessons from international experience.** *Postgrad Med J* 2010, **86**: pp.143-152.



ONLINE TRAINING COURSE

Competency based curricula - 6 phase design

1. Needs assessment
2. Competency framework
3. Milestones and entrustable professional activities
4. Instructional methods and assessment
5. Implementation and monitoring
6. Evaluation



ENTRUSTABLE PROFESSIONAL ACTIVITIES

1. Correctly complete and critique a death certificate according to WHO standards (ICD 10)
2. Actively participate in a mortality and morbidity meeting evaluating death certificates
3. Compassionately, ethically and professionally communicate the cause of death



PLANS

- International standard (WHO ICD-10 guidelines)
- Web based platform
 - Examples based on case scenarios
 - Competency Assessment with Ethics CPD points
- Printable booklet
- Proposed Implementation
 - Undergraduate training
 - Internship
 - Guideline during M&M meetings
 - Individual clinicians

TOOL PROTOTYPE – NYC HEALTH



- Pre-course assessment
- Case study
- Civil registration and vital statistics system
- Definitions and terminology
- Completing a DHA -1663, part 1 and part 2
- Practice case examples
- Post-course assessment



OUR HEARTS BEAT FOR THE NATION



Thank you

REFERENCES AND ACKNOWLEDGEMENTS

World Health Organisation training on cause of death certification

<http://apps.who.int/classifications/apps/icd/icd10training/>

<https://www.who.int/healthinfo/statistics/verbalautopsystandards/en/>

Stats SA

<http://www.statssa.gov.za/>

DHA-1663

<http://www.dha.gov.za/index.php/civic-services/death-certificates>

SAMRC burden of disease unit resources

- Research content
- Graphs and tables
- <http://www.mrc.ac.za/reports/medical-certification>

Aung E, Rao C, Walker S: **Teaching cause-of-death certification: lessons from international experience.** *Postgrad Med J* 2010, **86**: pp.143-152.