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Leadership & Quality
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Let's close the gap

Medical Certification of cause of
death :do doctors know the rules?

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Presentation Outline

- Background: ***What is the problem?***
- Study purpose: ***What did we do?***
- Study methodology: ***How we did it?***
- Data analysis:
- Discussion of Results: ***What we found?***
- Conclusion and Significance: ***What does it mean?***
- Limitations
- Acknowledgements



Introduction

- National mortality data forms an important part of the country's burden of disease profile and fulfils important functions¹
- The national mortality report, compiled by StatsSA, relies on prompt and accurate completion of DHA 1663-B (BI/DNF)¹
- But,
- Most studies that audit the DHA 1663-B worldwide, consistently find errors with the way the forms were completed^{2,3,4}
- Also, % ill-defined causes of death is consistently > 10% recommended by the WHO⁵ and concerns with misclassification of deaths (Unnatural, HIV)^{2,4}

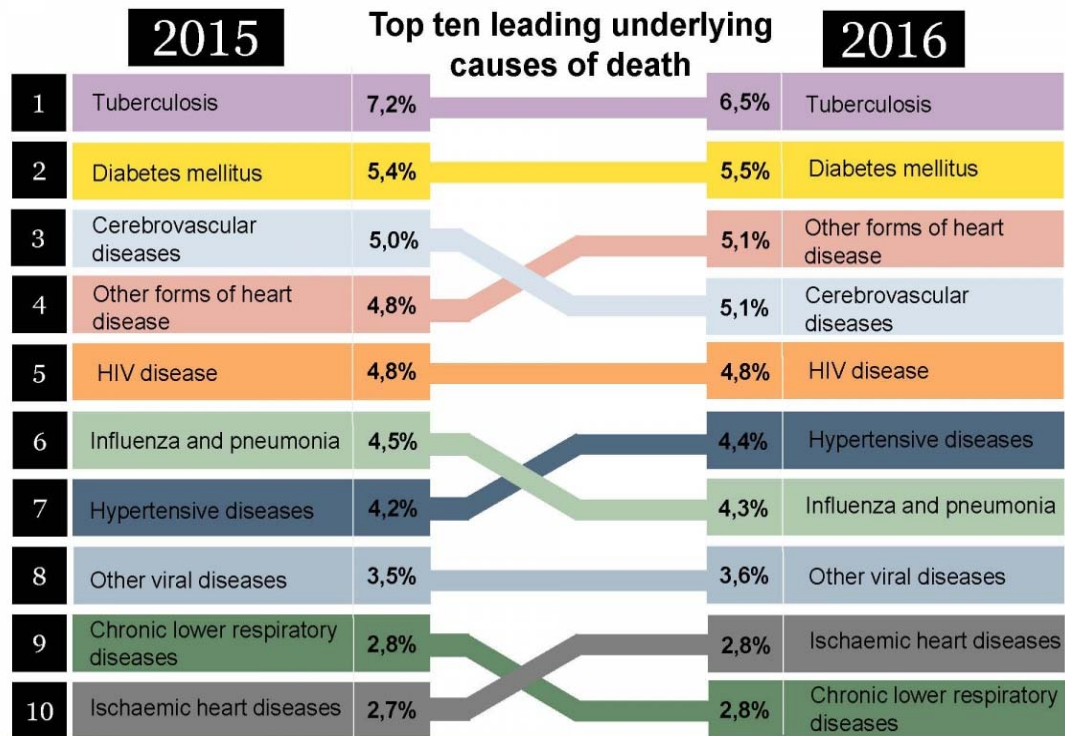


Summary of the ICD Rules

1. Logical sequence in Part 1 (condition below causes the one above)
2. Avoid mechanisms and ill-defined causes
3. One condition per line
4. UCoD initiated everything and is targeted for prevention
5. Avoid abbreviations or euphemisms (ISS, RVD)
6. All the other contributing conditions in Part 2 in priority
7. Coder's principle: Code what you see

Part 1. Enter the disease, injuries or complications that caused the death		Approximate interval between onset and death (days, months, years)	For office use only
Immediate cause of death	a) _____ Due to (or as a consequence of)		
	b) _____ Due to (or as a consequence of)		
Underlying cause (disease or injury that initiated events leading to death)	c) _____ Due to (or as a consequence of)		
	d) _____		
Part 2. Other significant conditions contributing to death			

DHA 1663-B >>>Mortality data





Study Purpose

Aim

To investigate factors influencing the level of knowledge of doctors on the medical certification of cause of death in Limpopo Province.

Objectives

1. To describe the baseline characteristics of the doctors in Limpopo Province
2. To determine the level of knowledge of doctors on medical certification of cause of death
3. To determine factors associated with adequate knowledge on medical certification of cause of death



Study methodology

- A cross-sectional descriptive study.
- Conducted among public sector doctors across all the 5 districts in Limpopo Province
- Doctors were recruited from 12 hospitals and requested to complete a self-administered questionnaire adapted from the FPD on-line course⁶ and training material from the WHO⁸ and Stats SA¹
- The questionnaire had 79 question grouped into 9 knowledge areas
- Adequate knowledge was regarded as a score of $\geq 60\%$ ⁷



Questionnaire: Knowledge areas, Variables and Outcome

<i>Knowledge areas</i>	Predictor Variables	Outcome variable
<i>Rules</i>	Age	Level of knowledge Categorised into: adequate ($\geq 60\%$) and inadequate ($< 60\%$)
<i>CoD natural</i>	Rank	
<i>Identify Unnatural</i>	Years of work experience	
<i>UCoD</i>	Clinical discipline	
<i>Immed</i>	Previous training	
<i>Immed vs UCod</i>	CPD attendance	
<i>Purpose</i>	Awareness of guidelines	
<i>Unnatural: Process</i>	The level of comfort in completing the DNF	
<i>Ethics</i>	Expressed need for training	

Data analysis

Descriptive Stats

Summarise
baseline
characteristics

1. Mean \pm sd,
2. Median + IQR
(Continuous)
3. Proportions
(Categorical)

Associations

Student T-test
(unpaired) for
differences in means

Chi-square test for
associations between
categorical variables

Level of significance

$p < 0.05$

Data captured on Ms Excel and analysed using STATA v14

**Ethics: Turfloop Research Ethics Committee approval
(TREC/253/2017:PG)**



Results and Discussion



Baseline characteristics

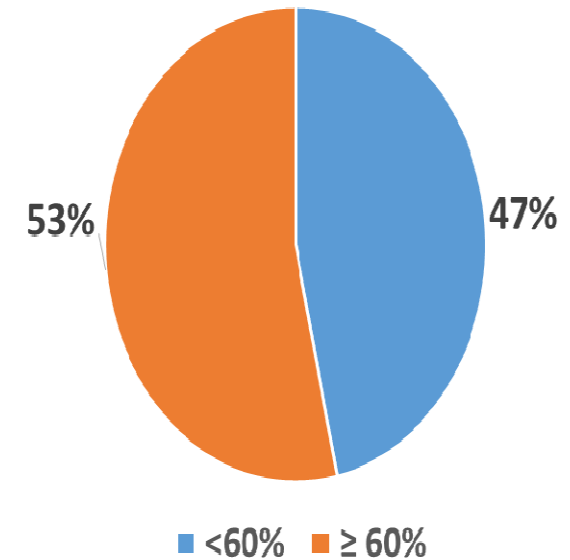
Variables	Frequency N (%)
Participants (Drs)	301
Females	152 (50.5)
Age: Median (IQR)	29 (12)
Interns, COSMO, MO Grd1	193 (64)
Specialists	40 (13)
Tertiary hospitals	146 (49%)
Clinical experience (< 5 years)	174 (60)
CPD attendance	52 (18)
Need for training	260(86)

Mean Scores

➤ Overall : **59.80%** (± 11.95)

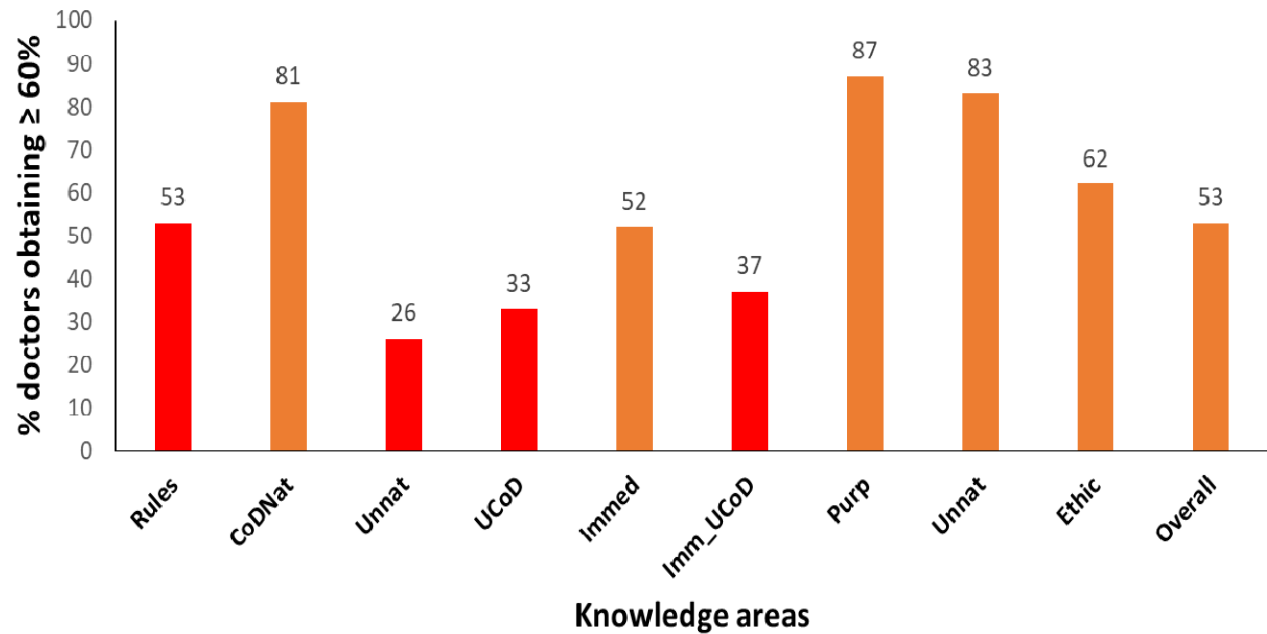
Mean scores (t test)

	Average	95% CI	P value
Adequate knowledge	68.8% (± 11.95)	67.8 - 69.8	< 0.001
Inadequate knowledge	49.4% (± 6.7)	48.2 - 50.6	

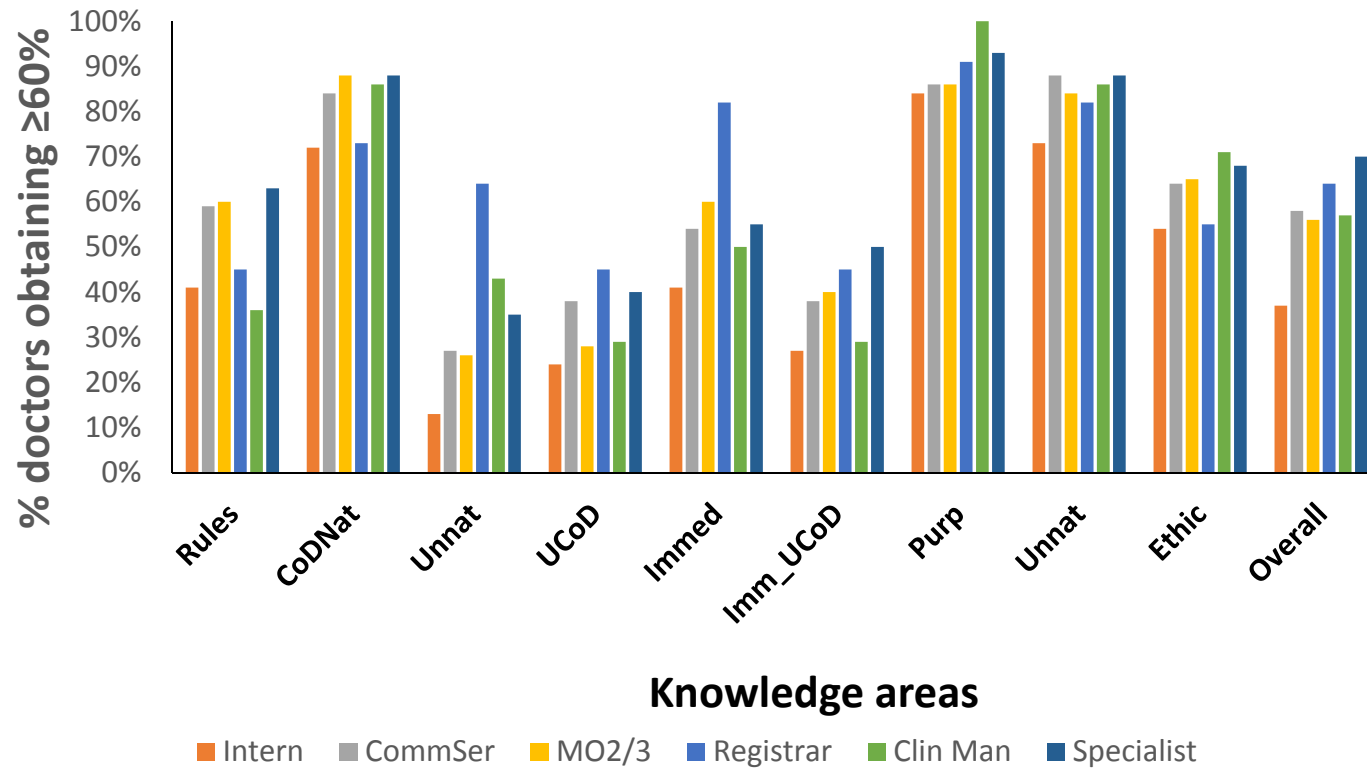


Performance of doctors by knowledge area

- 26% able to identify unnatural deaths
- **33% know what the underlying cause of death is**
- 37% able to differentiate between immediate and underlying causes of death
- **Case scenarios:** 32% correctly identified the UCoD



Performance by rank





Factors influencing the knowledge of doctors (χ^2 test)

Variable	p value
Rank	0.002
Years of clinical experience	0.010
Previous training	<0.001
Awareness of guidelines	0.040
Gender	0.595
Age	0.071
Clinical discipline	0.788
Level of care	0.400
District	0.336

Significance
 $p < 0.05$



Conclusion and Significance

➤ We found:

- Majority of doctors were junior, lacked training, and needed it
- Knowledge gap may signify supervisory challenges
- Knowledge areas of concern (unnatural deaths, underlying cause of death) to be emphasised during training

➤ We know: Literature says interactive workshops are effective in improving the knowledge of doctors on death certification⁹

➤ So what: ***Urgent need for training, supervision, standardised course content and quality checks***

➤ What's new: We have provided empirical evidence for an urgent need for training, what content to emphasise, and a cadre of doctors to be prioritised for training



Limitations

- It was a questionnaire-based study, although the questionnaire was piloted, it needs to be tested in other settings and perhaps strengthened as a national resource
- The cross-sectional design doesn't provide the best evidence
- Although a fair representation Limpopo Province, the findings cannot be generalised to other provinces
- The 60% cut-off for adequate knowledge may be too low: on-line course requires 70% pass to get the certificate



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Thank you!!!

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