

Evaluating an Online Training Protocol to Improve Cause of Death Reporting in North Carolina

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Collaborative Team Members

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Importance of Mortality Statistics

Death certificate data are used to:

- Detect trends and identify community needs
- Inform public health programs
- Assist in funding and resource allocation



Barriers to Death Certificate Accuracy

- Paper based death certification system
- Low volume certifiers
- Decedents with little contact with the healthcare system
- Multiple possible causes of death
- Lack of training





Help



Improving Cause of Death Reporting

Importance of Cause of Death Reporting

Completing the Cause of Death Section

Electronic Certificates

Medical Examiner/Coroner Cases

Improving Cause of Death Quiz

Additional Resources



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Narration Text





Cause of Death Reporting Assessment - Question 1 of 5

Improving Cause of Death Reporting

Line (a)
Immediate Cause (Final disease or condition resulting in death)

Line (b)
Due to or as a consequence of

Line (c)
Due to or as a consequence of

Line (d)
Due to or as a consequence of

Part II
Other Conditions



Submit

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Z-Score Variables

- Item 1: % of natural deaths at decedent's residence, age 18-64
- Item 2: % COD I46.9: Cardiac Arrest
- Item 3: % COD I51.9: Unspecified Heart Disease
- Item 4: % COD Pending or Unknown
- Item 5: % COD Ill-Defined Cause of Death
- Item 6: % COD T50.9: Other and unspecified drugs
- Item 7: % Manner of Death Pending or Unknown
- Item 8: % of deaths that were non-residents of county of death
- Item 9: % of deaths with single COD entry on item 23 Part I line a
- Item 10: % of deaths certified by non MD/DO
- Item 11: Avg time (days) between date of death Item 6 and date certified Item 33c
- Item 12: % cases declined by medical examiner item 28b



Rank of 15 Worst Performing Counties

Rank	Yr 2015		Yr 2016		Yr 2017	
	County	Sum of z-scores	County	Sum of z-scores	County	Sum of z-scores
1	Camden	-10.13	Tyrrell	-7.47	Camden	-8.68
2	Gates	-8.50	Bertie	-7.33	Chowan	-6.66
3	Pamlico	-7.45	Perquimans	-7.02	Halifax	-5.42
4	Haywood	-6.22	Camden	-6.91	Beaufort	-5.36
5	Perquimans	-5.55	Hertford	-6.71	Perquimans	-5.18
6	Craven	-5.29	Ashe	-5.72	Bladen	-4.96
7	Beaufort	-5.17	Edgecombe	-5.44	Hertford	-4.85
8	Edgecombe	-4.69	Currituck	-5.39	Alleghany	-4.65
9	McDowell	-4.53	Pamlico	-5.35	Washington	-4.31
10	Lenoir	-4.39	Washington	-5.15	Richmond	-3.97
11	Polk	-4.38	Greene	-4.77	Cumberland	-3.94
12	Graham	-4.29	Craven	-4.76	Hoke	-3.75
13	Burke	-3.94	Avery	-4.72	Lenoir	-3.52
14	Madison	-3.79	Beaufort	-4.72	Harnett	-3.47
15	Alleghany	-3.73	Cumberland	-4.67	Wilson	-3.37

Demographics

- 211 potential certifiers were invited to respond
- 10 participants responded
 - 5 Beaufort county, 4 Lenoir county, 1 Green county participant(s)
 - 5 NPs, 3 MDs, 2 DOs
 - Primarily low volume certifiers



Kirkpatrick Model of Evaluation

- Level One: Reaction
 - Was the training clear, relevant, and engaging?
- Level Two: Learning
 - Did participants absorb knowledge and are they committed to applying what they learned?
- Level Three: Behavior
 - Did participants apply training principles?
- Level Four: Results
 - Was there a significant change in target outcomes as a result of the training?



Survey One: Reaction

- Was the training module engaging and clear both in format and content?
- Is the training relevant to professional activities?
- Can the material be applied in a practical manner?



Survey One Results

- All participants reported they were likely to recommend program to colleagues
- High commitment to application
- Feedback:
 - Reported that training was not relevant to their professional activities
 - Reported lack of training in residency
 - Requested NC specific training and specific training for complex cases e.g. elderly or at-home deaths



Survey 2: Learning

- Has the training module assisted in professional activities?
- What specific components of the module were most helpful?
- Are there additional resources that would be beneficial?
- What improvements could be made to the educational activity?



Survey 2 Preliminary Results

- Most participants reported that they are successfully applying knowledge gained from the training module
- Most agreed it was a worthwhile activity
- Feedback:
 - Reiterated the need for EDRS and specific training for complex cases
 - Suggested a link for training be readily available for those filling out death certificates



Next Steps: Behavior Evaluation

- Participants signed death certificates in target counties can be identified and evaluated
 - Logical cause of death progression
 - Specific primary cause of death code



Next Steps: Results Evaluation

- Target improvement metric: total z-score for target counties in 2018
 - Death certificate data is finalized September of following year
- Unlikely to see significant change
 - Small sample size
 - Confounding variables



Challenges Encountered

- Small sample size
- Difficulty identifying potential certifiers
- Technical errors
- Outdated email addresses
- Lack of response detail



Lessons Learned

- Targeting training to residents and students may be a more effective method of dissemination
 - Difficult to recruit practicing physicians and NPs
- Future training materials could be improved by detailed explorations of complex cases and more suggestions for additional resources



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- The online training module evaluated in this study can be found at:

https://www.cdc.gov/nchs/training/improving_cause_of_death_reporting/

