

Ashley Marler¹, Cara Logan¹, Stella Self², CMG Schammel^{1,3}, Michael Ward^{1,3}, James Fulcher^{1,3}, Grace Dukes^{1,3}

¹University of South Carolina School of Medicine Greenville, Greenville SC

²Department of Epidemiology, Arnold School of Public Health, University of South Carolina, Greenville SC

³Pathology Associates, Greenville SC

Introduction

The purpose of death certification extends beyond functioning as a legal document. The cause-of-death (COD) statement affects epidemiology, funding research, public health policies and initiatives, and ultimately impacts the prevention of disease processes; **however, the frequency of inconsistencies and errors remain high.**

Background from Literature Review

- **In hospital-studies, error occurrence in death certificates ranges from 17.7 - 96%.**
- Common mistakes included :
 - Omitting other significant conditions
 - Missed COD diagnoses
 - Nonspecific COD - including listing cardiopulmonary arrest or multisystem organ failure
- The **US Standard of Death** was created by the CDC in 2003, lists formatting guidelines for death certificates.
- Mistakes in death certification has been attributed to **lack of educational initiatives.**



Link to CDC's US Standard of Death Certification

Common mistakes evaluated in our survey are completed by physicians within the Cause of Death section, despite listed requirements within this document for the national standard for death certificates

Aims

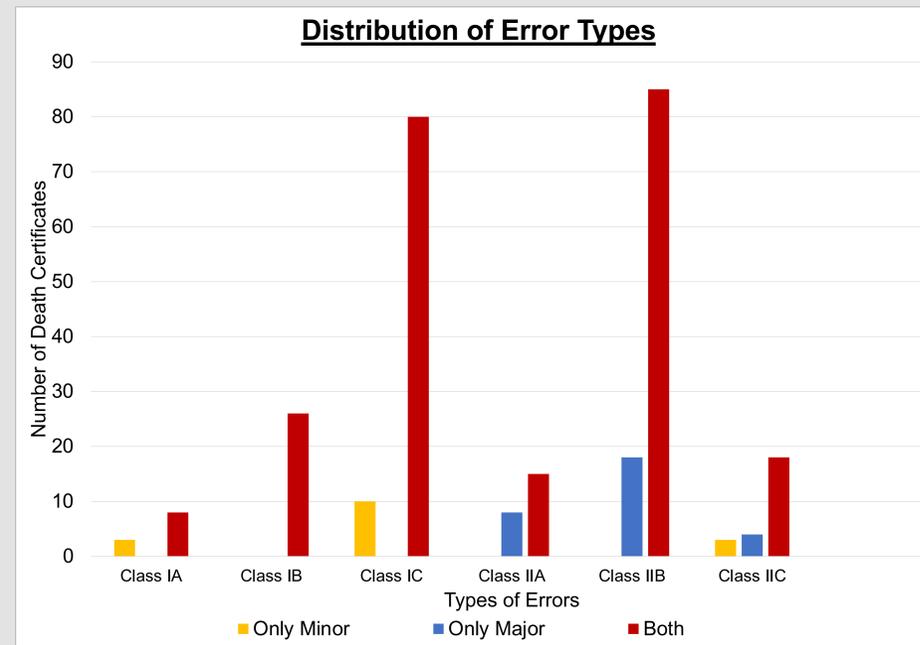
Identify common errors in death certificates and factors that contribute to the high frequency of errors

Classification of Errors

These errors are defined by the CDC. The following figure shows who they would present on death certificates:

	MINOR			MAJOR		
	Class IA – Multiple Causes on Line A	Class IB – Typographic Errors	Class IC – Omitted Intervals	Class IIA – Nonspecific Cause of Death	Class IIB – Omitted Other Significant Conditions	Class IIC - Illogical Sequence of Events
Part I. Chain of Events	<p>Sepsis due to pneumonia (Days)</p> <p>In-dwelling catheter (Days)</p> <p>Left hemiparesis (6 months)</p> <p>Old cerebrovascular accident (2 years)</p>	<p>Pulmonary embolism (1 hour)</p> <p>AMI (7 days)</p> <p>Chronic ischemic heart disease (8 years)</p>	<p>Acute myocardial infarction (∅)</p> <p>Arteriosclerotic heart disease (∅)</p>	<p>Asystole (∅)</p>	<p>Congestive heart failure (7 years)</p> <p>Coronary heart disease (25 years)</p>	<p>Metastatic neuroendocrine cancer (Unknown)</p> <p>Sepsis pneumonia (Days)</p> <p>Left pleural effusion (Days)</p>
Part II. Other Significant Conditions	Hypertension, obesity	Non-insulin-dependent diabetes mellitus, obesity, hypertension, congestive heart failure	Carcinoma of the lung, congestive heart failure	Congestive heart failure, hypertension	∅	COPD

Results



Conclusions

Our findings were consistent with previous studies.

- Inaccuracies within our data set show there is a **high prevalence of major errors** (n=114, 91.9%) which can impact interpretation of COD and the accuracy of death certification.
- In addition, most death certificates contained **both and major errors** (n=92, 74.2%) which indicating a need to correct both error types.

Recommendations

Based off the widespread distribution of errors, moving forward we aim to make an **educational intervention initiative** distributed by:

- An iPhone or Android application
- Online learning module
- Hospital badge cheatsheet