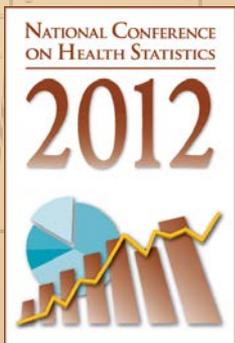


Physician Certification of Cause of Death and Improvements in Vital Statistics in Jordan

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Importance of Cause of Death

- To understand the nature and magnitude of health problems
- For planning, implementation and evaluation of public health programs
- Medical (i.e., physician) certification of cause of death is the ideal

WHO standard death certificate

INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF CAUSE OF DEATH

Cause of death		Approximate interval between onset and death
I Disease or condition directly leading to death*	(a) .....	.....
	due to (or as a consequence of)	
	<i>Antecedent causes</i>	
	(b) .....	.....
Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last	due to (or as a consequence of)	
	(c) .....	.....
	due to (or as a consequence of)	
	(d) .....	.....
<hr/>		
II Other significant conditions contributing to the death, but not related to the disease or condition causing it	.....	.....

<i>*This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.</i>		

Challenges with Physician Certification

- Lack of understanding importance of proper COD certification
- Lack of training how to properly certify
 - Mechanisms of dying (e.g., cardiac arrest)
 - Ill-defined conditions
 - Terminal conditions (e.g., heart/renal failure, sepsis, pneumonia) with multiple etiologies reported as the underlying cause
 - Incorrect causal sequences

Challenges with Physician Certification (Bad)

CAUSE OF DEATH (See instructions and examples)

Approximate interval:
Onset to death

32. **PART I.** Enter the chain of events--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)

a. Cardiac/pulmonary arrest, advance dementia

Due to (or as a consequence of):

Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE

b. Diphtheria, aortic stenosis, CVA, CAD

Due to (or as a consequence of):

(disease or injury that initiated the events resulting in death) LAST

c. Pacemaker

Due to (or as a consequence of):

d. _____

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I.

33. WAS AN AUTOPSY PERFORMED?

• *Yes • *No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? • *Yes • *No

Challenges with Physician Certification (Good)

CAUSE OF DEATH (See instructions and examples)		Approximate interval: Onset to death
<p>32. PART I. Enter the <u>chain of events</u>--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.</p>		
<p>IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)</p>	<p>a. <u>Hepatic encephalopathy</u> Due to (or as a consequence of):</p>	<u>15 days</u>
<p>Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST</p>	<p>b. <u>Cirrhosis of liver</u> Due to (or as a consequence of):</p>	<u>5 years</u>
	<p>c. <u>Chronic alcoholism</u> Due to (or as a consequence of):</p>	<u>years</u>
	<p>d. _____</p>	
<p>PART II. Enter other <u>significant conditions contributing to death</u> but not resulting in the underlying cause given in PART I.</p>	<p>33. WAS AN AUTOPSY PERFORMED? • *Yes • *No</p>	
<p>Bleeding esophageal varices, pneumonia</p>	<p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? • *Yes • *No</p>	

Kingdom of Jordan

- 3 visits 2001-2006
- Major recommendations
 - Changes to law and regulations governing vital registration and statistics
 - New death notification form with COD section in WHO format
 - Physician training in COD certification
 - Coder training
 - Annual report on mortality statistics

Old death notification form

Direct cause of death

Minutes دقائق	Hours ساعات	Time of Death وقت الوفاة	..... / ..... / .....	Date of Death تاريخ الوفاة
.....			.....	Date of Death in written تاريخ الوفاة (بالحروف)
.....			.....	Direct cause of Death سبب الوفاة المباشر
.....			.....	Indirect cause of death سبب الوفاة غير المباشر
.....			.....	Medical Supervisors اسم الجهة المشرفة على الوفاة
.....			..... / ..... / .....	Date التاريخ
Signature / Stamp الخاتم / التوقيع				

Indirect cause of death

New death notification form

Part 1 – 4 lines

المدة بين بداية السبب والوفاة	الرمز	أسباب الوفاة	
.....	أ..... ب نتج عن:..... ج نتج عن:..... د نتج عن:.....	<p>* الجزء الأول: 1- السبب المباشر للوفاة 2- الأحوال المرضية التي أدت إلى السبب المباشر للوفاة</p>
.....	<p>* الجزء الثاني : - الأمراض أو الحالات التي ساعدت في حدوث الوفاة ولا صلة لها بالمرض الأصلي المذكور في الجزء الأول</p>

Part 2

Other changes

- Death notification form completed in duplicate
 - Original to Civil Office for registration
 - Copy to Information Directorate (Ministry of Health (for coding))
- Physician training
 - All physicians were required to attend training on how to properly complete the new form



Jordan Applied Epidemiology Project & MOH Information Directorate

Cause of Death Workshop



Learning Objectives

When you have completed this workshop you will be able to:

- ✓ Explain the importance of a complete and accurate mortality reporting system
 - ✓ Describe the legal requirements for reporting deaths
 - ✓ Describe the process flow of the Death Notification Form
 - ✓ Describe the duties of the focal point
 - ✓ Accurately complete the medical portion of the death notification form
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Class Outline

- Overview
- Lesson 1: Benefits of accurate reporting
- Lesson 2: Legal requirements & process flow
- Lesson 3: Completing the Death Notification Form

Impact of New Form and Training

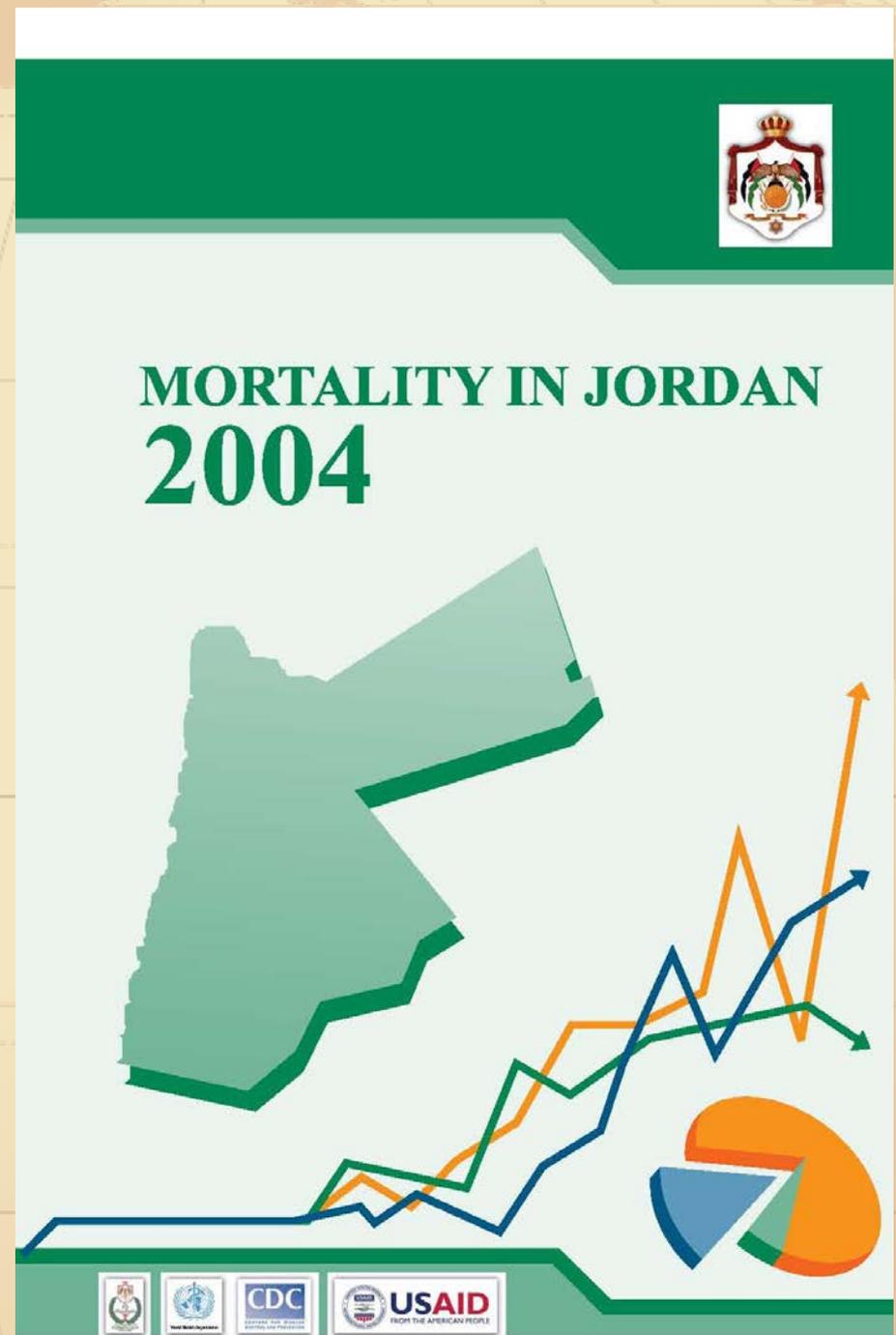
- Quality of cause-of-death information improved dramatically
- Mechanisms of dying (e.g., cardiac arrest) and ill-defined conditions dropped from 40-50% to 6%

Cause of death coding

- Development of organizational infrastructure
- Coders (4) hired and located in the Directorate of Information, Studies and Research in the Ministry of Health
- Coder training in ICD-10

Mortality Statistics Report

- First report including cause-of-death statistics published in 2007 (based on 2004 data)
- Based on 12,000/17,000 registered deaths





Death Rates in Jordan by Governorate, 2004

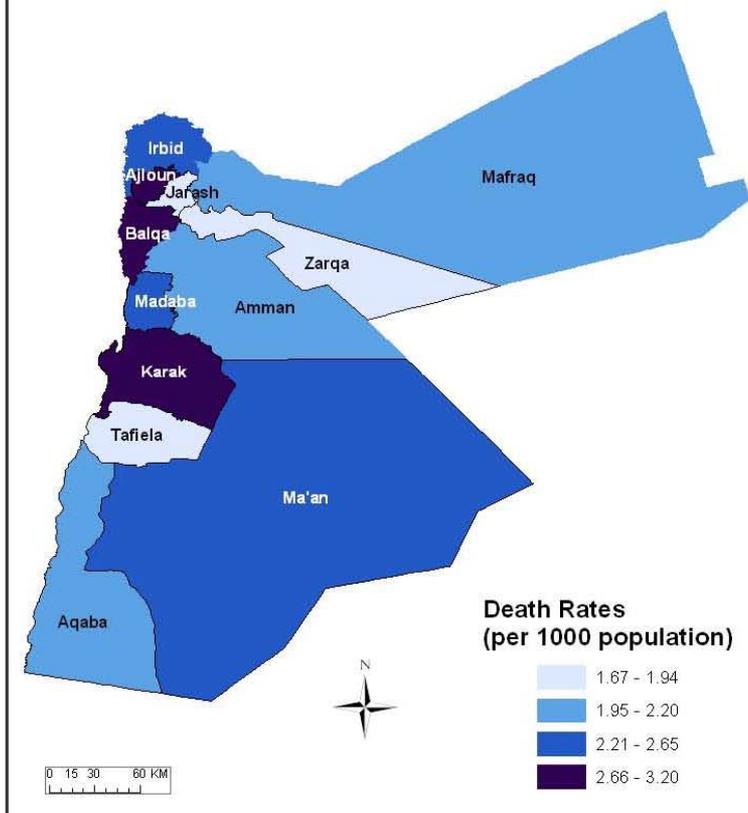


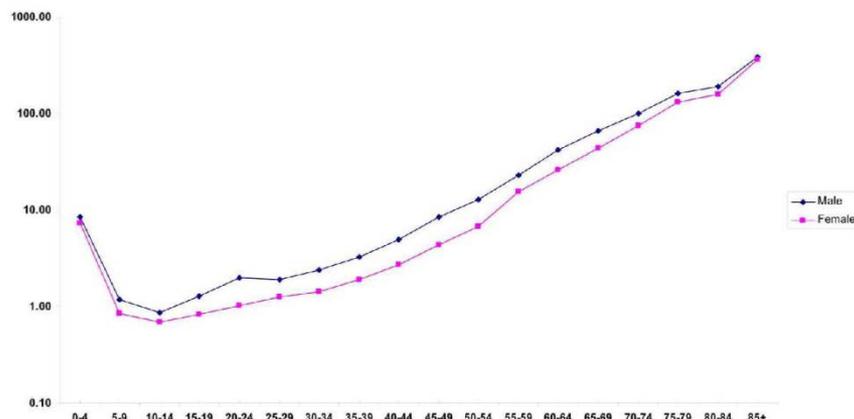
Table 1.

Number of deaths, percent of total deaths, death rates, age-adjusted death rates (WHO standard) for leading causes for the total population in 2004: Jordan. [Death rates per 1,000 population; age-adjusted rates per 1,000 WHO standard population.]

Rank ¹	Cause of death (Based on the International Classification of Diseases, Tenth Revision, 1992)	Number	Percent of total deaths	Rate	Age-adjusted rate
...	All causes	12,223	100.0	2.28	3.91
1	Ischaemic heart diseases (I20-I25)	1,844	15.1	0.34	0.69
2	Malignant neoplasms (C00-C97)	1,602	13.1	0.30	0.54
3	Cerebrovascular diseases (I60-I69)	1,278	10.5	0.24	0.49
4	External causes of mortality (V01-Y89)	1,244	10.2	0.23	0.30
5	Diabetes mellitus (E10-E14)	781	6.4	0.15	0.30
6	Hypertensive diseases (I10-I15)	588	4.8	0.11	0.23
7	Congenital malformations, deformations, and chromosomal abnormalities (Q00-Q99)	537	4.4	0.10	0.09
8	Heart failure (I50)	376	3.1	0.07	0.14
9	Pneumonia (J12-J18)	298	2.4	0.06	0.09
10	Renal failure (N17-N19)	273	2.2	0.05	0.09
...	All other causes (Residual)	3,402	27.8	0.64	

... Category not applicable.
¹ Rank based on number of deaths.

Age specific death rate by age group and sex



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<http://www.cdc.gov/nchs/deaths.htm>

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ON HEALTH STATISTICS

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