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Dr. Sarimawar Djaja graduated from Medical Faculty of Atma Jaya Catholic University in 1981, and School of Public Health , University of Indonesia in 1997. Since 1983 she has been Research coordinator at the Indonesian National Institute of Health Research and Development, Ministry of Health conducting mortality studies on the national health survey; Research coordinator in the Indonesian Mortality Registration System Strengthening Project sponsored by AUSAID, WHO, since 2005 and guest lecture at the Medical Faculty of Atma Jaya Catholic University and Medical Record and Health Information IEU University since 2007.

Abstract

Trial of Medical Certificate of Cause of Death (MCCD) to Improve the Quality of Recording and Reporting Hospital Mortality Data in Jakarta, Indonesia, Year 2007

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Mortality statistics are essential to provide basic information on the status of a population's health. In Indonesia, recording and reporting of mortality data are still a serious problem, partly due to the absence of standardization of the Medical Certificate of Cause of Death (MCCD) for deaths that occur in hospital and those that occur at home.

In 2005, NIHRD collaborated with the World Health Organization (WHO) and School of Population Health; University of Queensland (UQ) to develop a MCCD, based on the WHO recommended format of the MCCD described in the International Statistical Classification of Diseases and Health Related Problems, 10th Revision (ICD-10), for use in Jakarta province. The application of the new format of MCCD was to be carried out by hospitals in accordance with the Decree of Head of Health Office Jakarta Province No.3942/2006. This MCCD has been trialed at two hospitals for deaths that occurred at these health facilities for the year 2007. In the year 2007 *Sint Carolus* hospital reported 791 deaths, and *Pasar Rebo* hospital reported 321 deaths.

The 10 leading underlying causes of death (UCOD) reported at *Sint Carolus* were cerebral vascular diseases (I61-I64, I67, I68) 15.7%, carcinoma malignant (C11-C95) 10.1%, diabetes mellitus with complication (E10-E11, E14) 8%, other heart diseases (I27, I44, I46, I48-I51) 7.2%, pneumonia (J18) 6.6%, ischemic heart diseases (I21, I23-I25) 5.9%, remainder of diseases of the respiratory system (J81, J90, J94, J96.9) 5.1%, septicemia (A41.9) 4.6%, certain conditions originating in the perinatal period (P00-P96) 3.7%, and hypertensive heart diseases (I11-I12) 3.3%. However, these included a number of non-specific causes of death (COD) that should not have been entered on the MCCD such as cardiac arrest (I46.9), respiratory failure (J96.9). The 10 leading UCOD at *Pasar Rebo* hospital showed tuberculosis (A15, A16, A19) 14.6%, cerebral vascular diseases (I61, I64) 11.2%, ischemic heart disease (I21, I25) 10.9%, hypertensive heart diseases (I11) 5.3%, transport accident (V99) 4.7%, renal failure (N18) 4.4%, dengue hemorrhagic fever (A91) 4%, other heart diseases (I27, I48, I50-I51) 4.0%, pneumonia (J18) 4.0%, septicemia (A41.9) 3.7%. At *Pasar Rebo* hospital there were again a number of non-specific COD such as pneumonia (J18) and respiratory failure (J96.9).

To improve the quality of hospital mortality data, all doctors should be educated in the correct use of the MCCD and be informed and provided with resources regarding non-specific COD that should not be documented as the UCOD e.g. senility, vital organ failure, unspecified diabetes mellitus, injury with no explanation of the external cause, asphyxia, prematurity. The advantage of doctors mastering the WHO format of the MCCD is that they can include more patho-physiological detail of the clinical sequence of events that lead to the death of their patient. Combined with ICD-10 mortality

coding training to interpret and code the UCOD should result in a reduction in the number of UCOD attributed to non-specific causes. The province health office should provide training and resources to hospital medical officers who complete MCCDs, to further strengthen the reporting system and make it manageable at province level.

Trial of MCCD to Improve the Quality of R&R Hospitals Mortality Data in Jakarta, Indonesia, Year 2007

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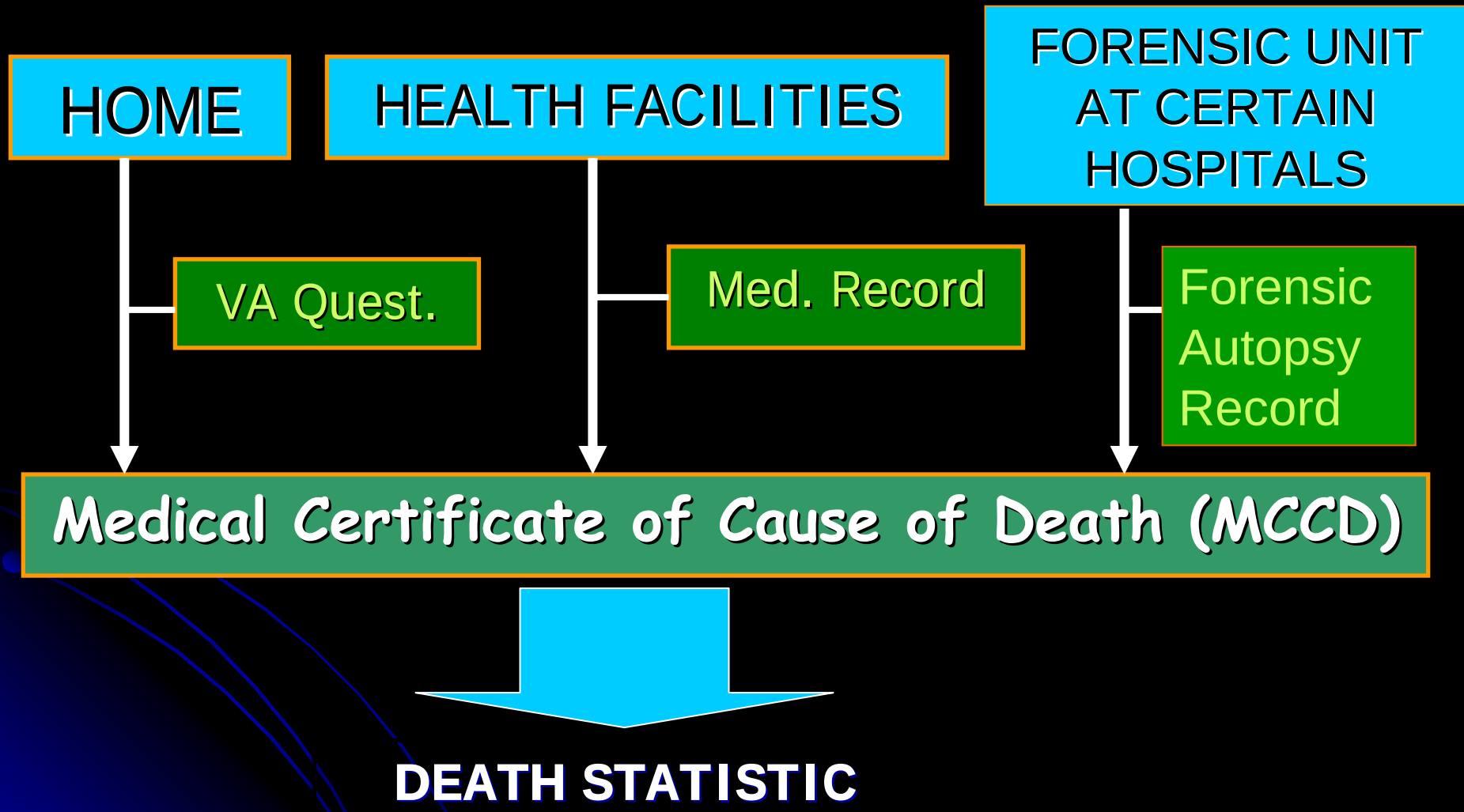
Introduction

- Benefit of mortality statistic
- Condition R & R mortality data in Indonesia
- Effort of Ministry of Home Affairs: new guideline
- Indonesia Mortality Registration System Strengthening Project 2006-2007
- Develop MCCD based on WHO
- Data sources of MCCD
- MCCD has been trailed at 2 hospitals

  (1 private and 1 government)

Source Of Information



Form-A

GOVERNMENT OF DKI JAKARTA PROVINCE
PROVINCIAL HEALTH OFFICE

CONFIDENTIAL

MEDICAL CERTIFICATION OF CAUSE OF DEATH

Month/Year of Death: ☐☐/☐☐ Hospital/PHC: ..... Hospital/PHC Code: ☐☐☐☐☐☐☐

No. of Death Records: ☐☐☐ No. of Medical Record: ☐☐☐☐☐☐☐☐☐

I. Identity of The Corpse

1. Full name : ..... **(BLOCK LETTER)**
2. No. of Population (NIK) : ..... No. of Family Card :.....
3. Sex : 1. Male 2. Female
4. Place/ Date of Birth : ....., .../...../.....(Day/Month/Year)
5. Religion : .....
6. Address : Street ..... No.....RT/RW.....
   Village ..... Sub-district.....
   City/District ..... Postal Code.....Telephone.....
7. Population State in Jakarta : 1. Resident 2. Non resident
8. Date of Death : ...../...../..... (Day/ Month/ Year)
9. Age at the time of death :.....Day ....Month ....Year ***(Fill in with the appropriate of age)*** Still birth (.....) ***(Fill in with √ sign)***
10. Place of Death : 1. Hospital, *length of stay .....days, ... hours* 4. Address of stay
    2. Primary Health Care 5.Others **(including DoA)**
    3. Maternity hospital

II. Special Report for Death Case at Home or Others (including Death on Arrival)

1. State of the Corpse : 1. Not yet buried/ not yet cremated
   2. Has been buried/ has been cremated: ...../...../.....(Day/Month/Year)
2. Name of Corpse Investigator : .....
3. Time of Corpse Investigator :..... ...../ ...../ ..... (Day/Month/Year)

III. Cause of Death

1. Diagnose Based On ***(Can be more than one)*** : 1. Medical Records 2. External Corpse Investigation 3. Forensic Autopsy
   4. Medical Autopsy 5. Verbal Autopsy 6. Others .....

2. Group of Cause of Death ***(Circle one)***:

DISEASES/DISORDERS

1. **Very infectious diseases*)**
2. **Infectious diseases**
3. **Non-infectious diseases**
4. **Maternal complication (pregnancy/delivery/post-partum)**
5. **Perinatal disorders (0-6 days)**
6. **Symptoms, signs & abnormal clinical findings, NEC**

INJURY**) caused by**

7. **Traffic accident**
8. **Occupational accident**
9. **Other accident**

Jakarta, ... /..... / 20.....

Receiver, Certifying doctor,

Name: _____ *Name:* _____

Relation with the deceased *Position/ insitutution stamp*

*) *Corpse needs special handling*

**)*If the cause of death by injury, the MCCD is filled after the standard procedure completely done*

The Characteristic of MCCD

- Consist of 3 pages with different colors
- The first page: simple, for the family of the deceased's
- The 2nd and 3rd page: more detail,
  the cause of death based on ICD-10 format, used for mortality statistic

First Page (White color)

Consists of 3 sections

I. Identity of the deceased

II. Special information for death case at home/ DOA

III. Cause of death: basis of diagnosis, groups of cause of death

Group of Cause of Death i.e. :

Diseases/Disorders	Injury**
1. Special diseases*	7. Transport accident
2. Infectious disease	8. Occupational accident
3. Non-infectious disease	9. Others injury (e.g. intentional self harm, assault)
4. Maternal complication	
5. Perinatal disorders	
6. Symptoms, signs and other conditions	

* Special disease: corpse need special treatment

** If the cause of death due to injury, the MCCD was filled after the standard procedure has done

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PROVINCIAL HEALTH OFFICE

Form-A

CONFIDENTIAL

MEDICALCERTIFICATION OF CAUSE OF DEATH

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No. of Death Records: ☐☐☐ No. of Medical Record: ☐☐☐☐☐☐☐☐☐☐

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1. Full name : ..... **(BLOCK LETTER)**
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4. Place/ Date of Birth : ....., .../...../.....(Day/Month/Year)
5. Religion : .....
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   Village ..... Sub-district.....
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8. Date of Death : ...../...../..... (Day/ Month/ Year)
9. Age of the time of death : .....Day .....Month .....Year ***(Fill in with the appropriate of age)*** Still birth (.....) ***(Fill in with √ sign)***
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9. **Symptoms, signs & abnormal clinical findings, NEC**

INJURY**) caused by**

7. **Traffic accident**
8. **Occupational accident**
9. **Other accident**

Jakarta, .../...../ 20.....
Certifying doctor,

Receiver,

Name:
Relation with the deceased

Name:
Position/insitutution stamp

3. Cause of Death Based on ICD -10

		Approximate interval between onset and death				ICD-10 Code Filled in by coder
		Year	Month	Day	Hour	
Death 7 (seven) days of age and up						
I. *Disease/condition directly leading to death*	a)					
Antecedent causes	b)					
	c)					
Underlying cause of death	d)					
II. *Other significant condition* : *contributing to the death but not related to the disease or condition causing it*	.....					
Death 0 – 6 (six) days of age including still birth						
a. *Main disease/condition in fetus/infant*	:					
b. *Other diseases/conditions in fetus/infant*	:					
c. *Main maternal disease/condition affecting fetus/infant:*	.....					
d. *Other maternal diseases/conditions affecting fetus/infant*	:					

Jakarta, .../...../ 20....
Diagnosing doctor,

**) Corpse needs special handling*
***) If the cause of death by injury, the MCCD is filled after the standard procedure completely done*

Name
Position/ institution stamp

Second and Third Page

3. Cause of Death

* For death 7 days of age and up

Ia

b

c

d

II.

** For 0-6 days of age incl. still birth

a. Main condition of the baby

b. Others

c. Main condition of the mothers

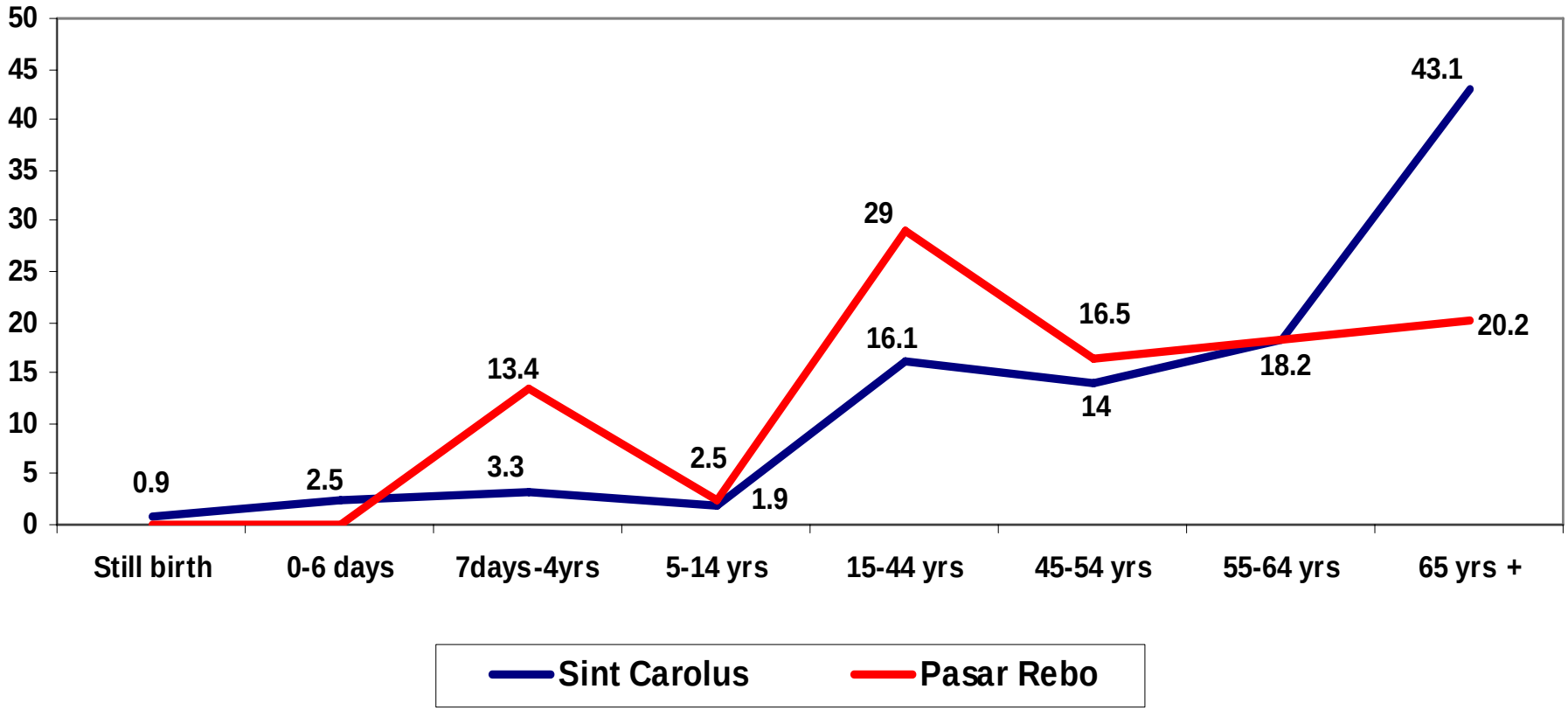
d. Others

Methodology

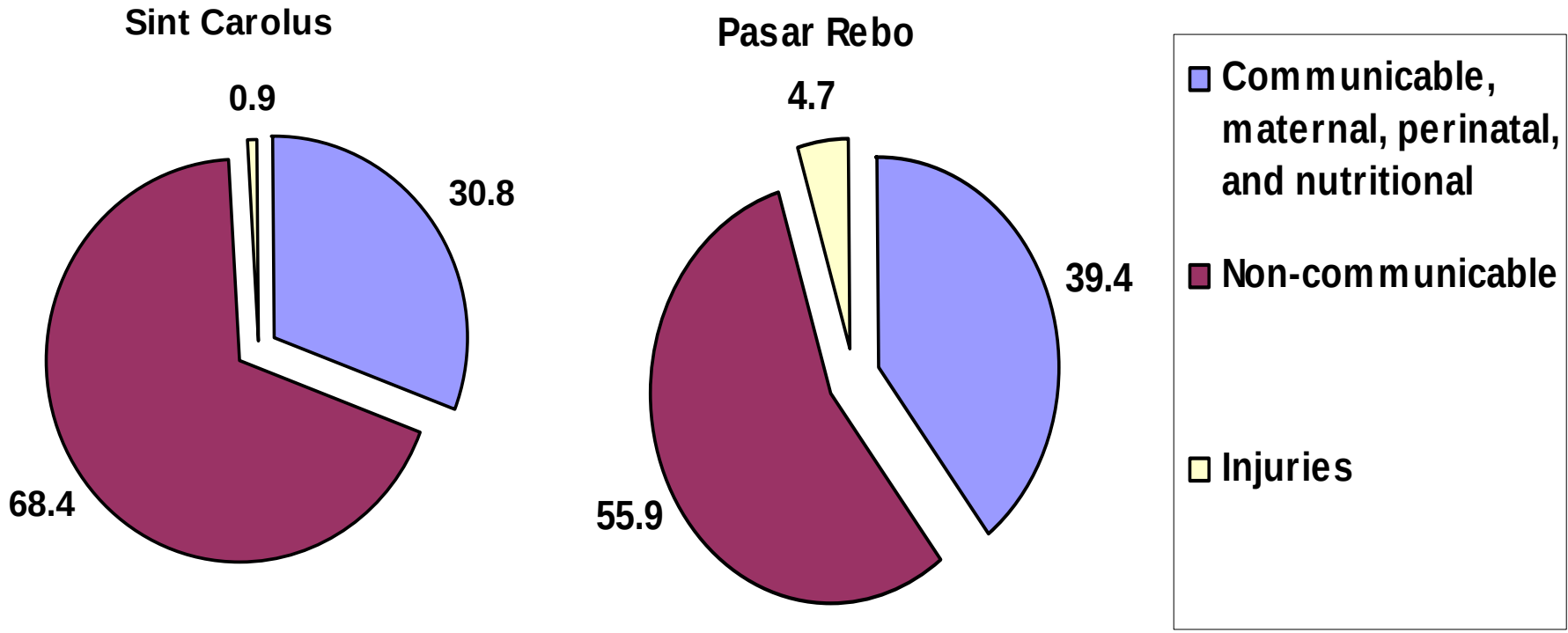
- The samples: all deaths from 2 hospitals
- Head of wards & MD has been educated
- Three sections at MCCD:
  1. Identity of the corpse
  2. Special information incl. DOA
  3. Diagnose based on Group of COD
- Doctors fill in the diagnoses section of COD and sign the MCCD

Results and Discussion

St Carolus hospital reported 791 cases, Pasar Rebo hospital reported 321 cases.



Results and Discussion



For tabulation the UCOD we use Mortality Tabulation List 2 and List 4 for infant and child mortality

Table 1. The Pattern of the Underlying Cause of Death Using MCCD from Two Hospitals as Trialed Sample in Jakarta, Year 2007

No.	UCOD	St. Carolus	Pasar Rebo
1	Cerebro vascular diseases	15.7	11.2
2	Carcinoma malignant (including leukemia)	13.1	4.3
3	Diabetes mellitus	8.0	3.4
4	Other heart disease	7.2	4.0
5	Pneumonia	6.6	4.0
6	Ischaemic heart disease	5.9	10.9
7	Remainder disease of respiratory system	5.1	2.8
8	Septicaemia	4.6	3.7
9	Hypertensive diseases	3.3	5.3
10	Diseases of liver	3.3	1.9
11	Perinatal condition	3.4	0.0
12	Tuberculosis	2.9	14.6
13	HIV	2.1	0.9
14	Dengue haemorrhagic fever	1.4	4.0
15	Chronic lower respiratory disease	1.9	3.1
16	Other direct obstetric death	0.1	1.6
17	Traffic accident	0.8	4.7
18	Renal Failure	4.7	4.4
19	All other diseases	4.1	3.4
20	Symptoms and signs, NEC	1.5	1.9

Result and Discussion (cont.)

- St. Carolus MR attached MCCD format based on ICD-10
- Many doctors incorrectly fill in COD in the column of admission
- Non specific of COD was selected as UCOD
- St. Carolus has initiated to re-educate
- To cover doctors who hadn’t been educated
- Concept of UCOD and compulsion to fill in

Suggestion

- All doctors should be educated in the correct use of MCCD

- The province health office should provide:

1. training to coders in hospital,
2. strengthening the RR system
3. making the RR manageable at province level

Acknowledgement

- Aus aid and WHO
- Dr. Chalapati Rao, MPH senior researcher, advisor, partner in IMRSSP
- Sue Walker and Garry Waller
- Prof. Richard Madden
- Others

Thanks you very much

Terima kasih banyak