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Mortality data quality evaluation

Framework for assessing quality

GENERALIZABILITY

- ◆ Coverage
- ◆ Completeness

RELIABILITY

- ◆ Consistency (epidemiological)
- ◆ Consistency (temporal)

Framework for assessing quality (cont.)

VALIDITY

- ◆ Content validity
- ◆ Ill-defined codes
- ◆ Age-sex plausibility

POLICY RELEVANCE

- ◆ Timeliness
- ◆ Geographical disaggregation

Coverage and completeness

◆ Coverage

- ◆ Geographical areas — e.g. Eastern Turkey not covered
- ◆ Administrative — Iran — 18 / 31 provinces in 2001
- ◆ Socio economic — Botswana — only urban areas
- ◆ Racial — till recently in Africa, only white population



◆ Completeness

- ◆ Refers to assessment of missed deaths in covered areas
- ◆ E.g. in urban Botswana, unregistered infant / elderly deaths

- ◆ During national estimation, corrections required for both partial coverage as well as incomplete registration in covered areas

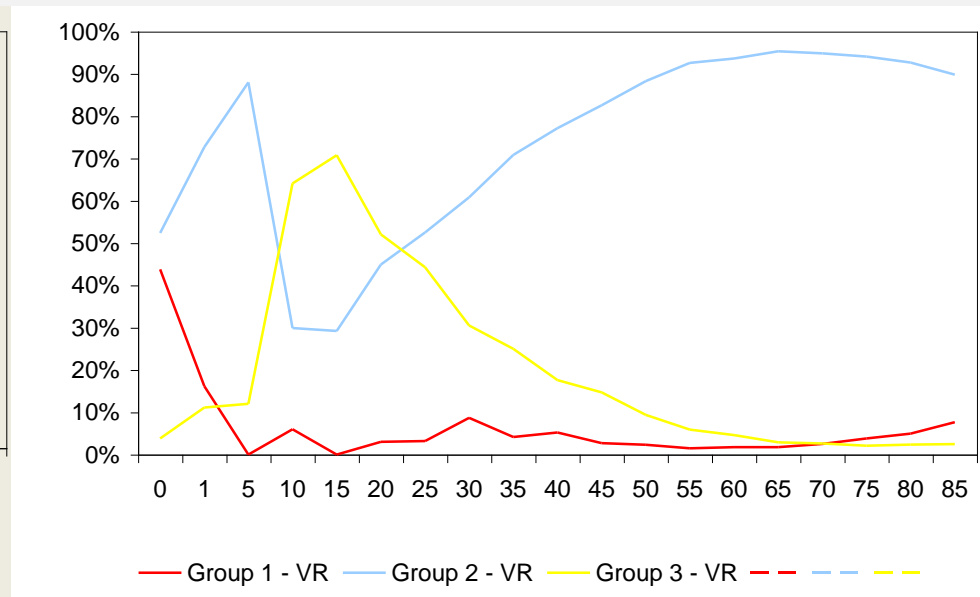
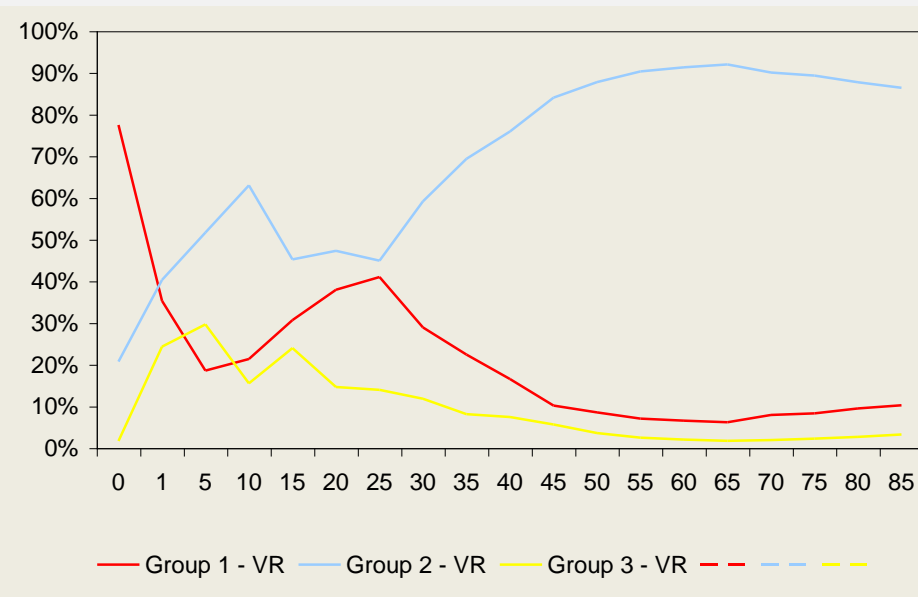
Levels and causes of mortality

- ◆ Consistency between level of mortality and cause distribution
 - ◆ High child – ↑ infectious – ARI, malaria, diarrhoea, etc (Group 1)
 - ◆ Low child – higher proportion of neonatal, congenital (Group 2)
 - ◆ High adult – ↑ infectious diseases, injuries (Group 1 and 3)
 - ◆ Low adult – ↑ ↑ cardiovascular, cancers, dementia / Alzheimers etc (Gp 2)

Swedish females 1951 and 1998

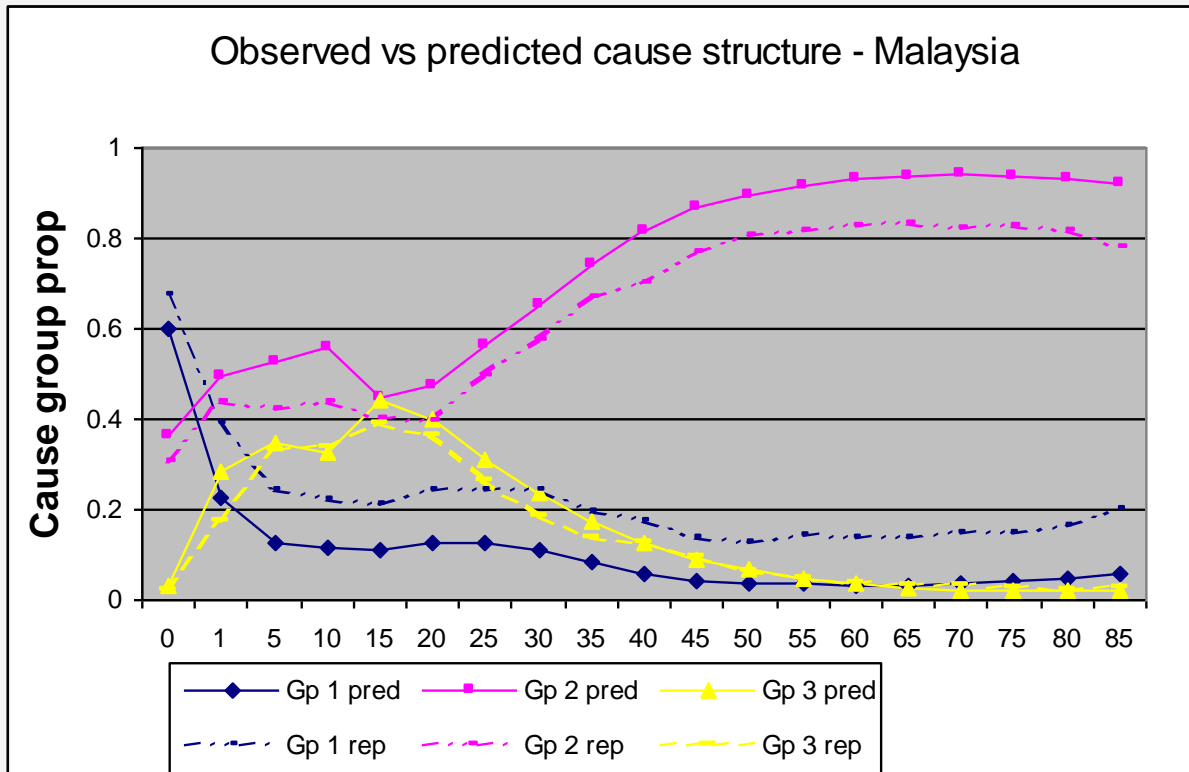
1951
Life exp = 65

1998
Life exp = 78



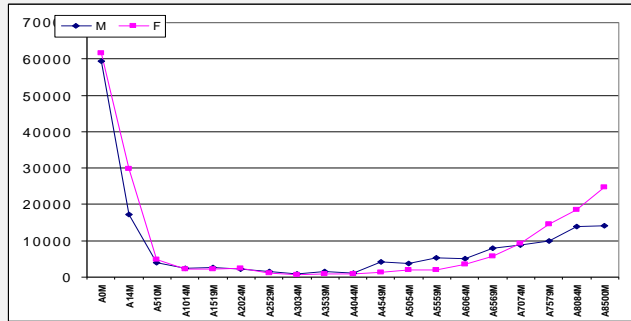
Malaysia

Cause structure suggestive of higher mortality level than reported

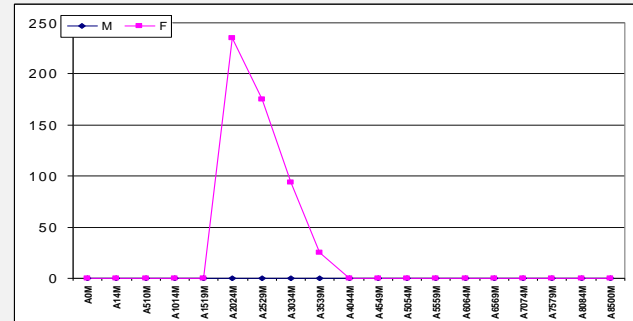


Age distribution by cause – China

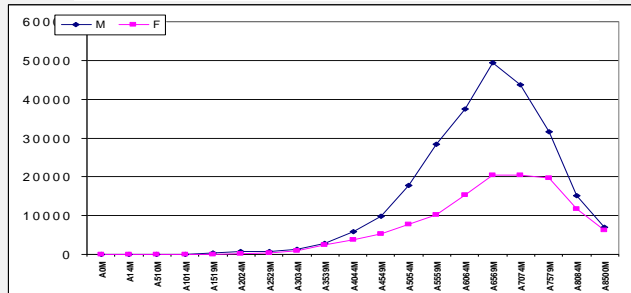
Lower respiratory infections



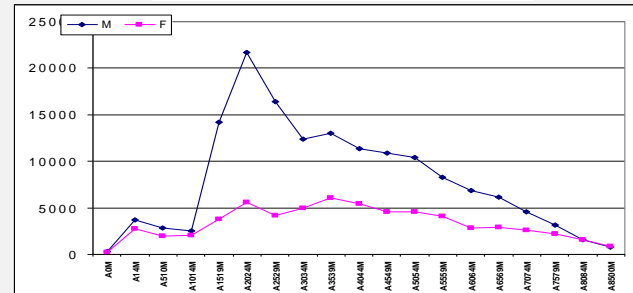
Hypertensive disorders of pregnancy



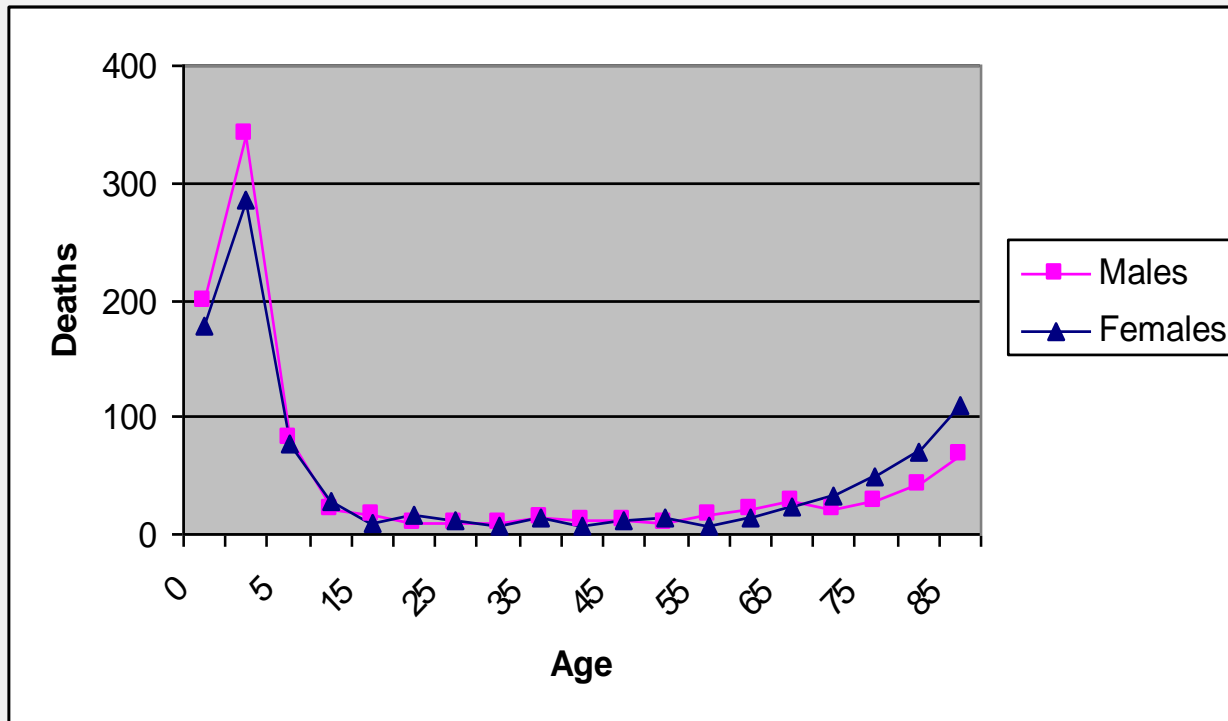
Lung cancer



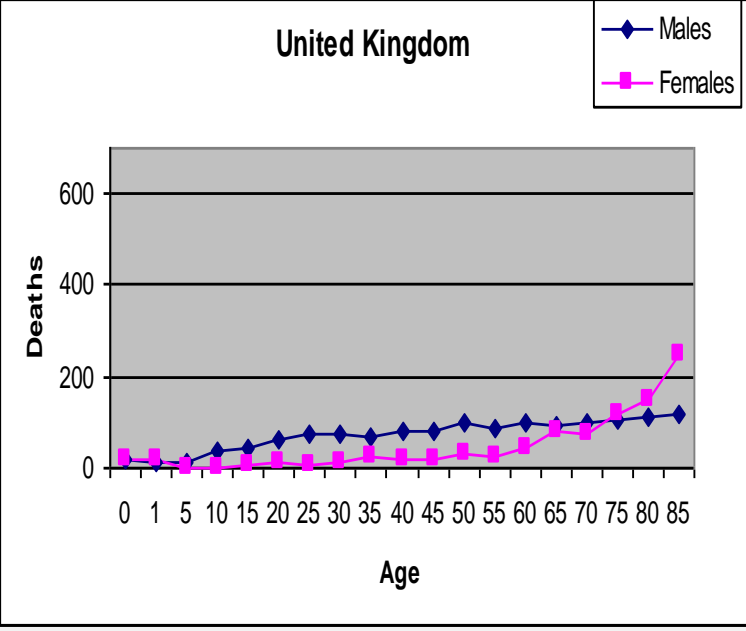
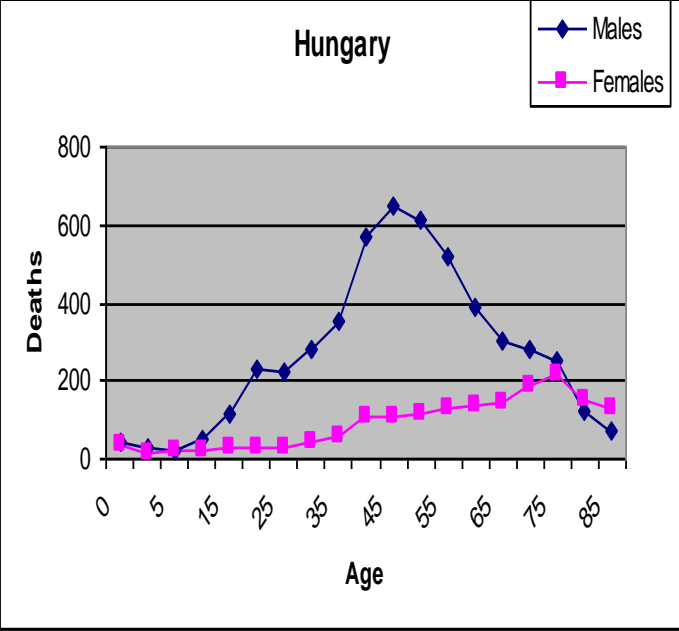
Motor vehicle accidents



Malnutrition - Philippines

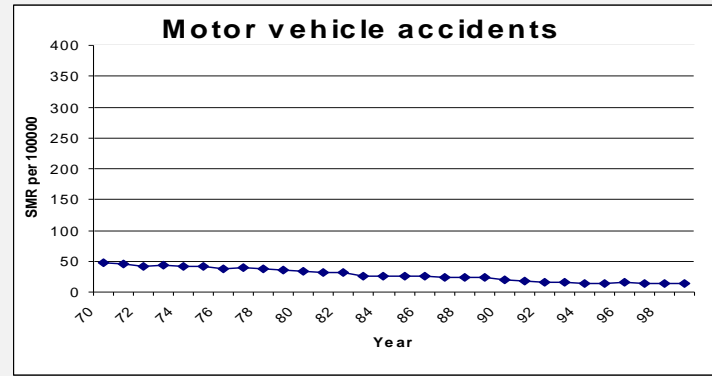
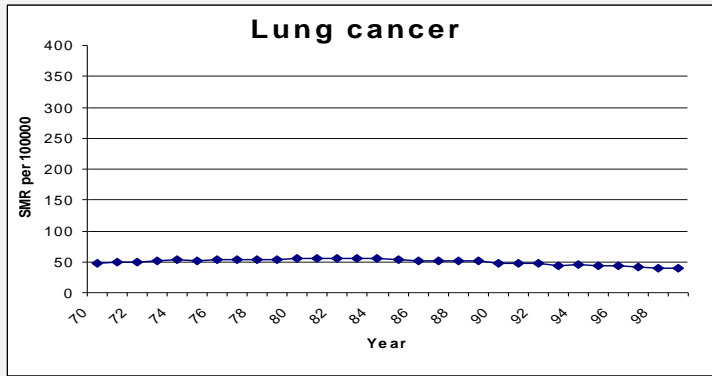
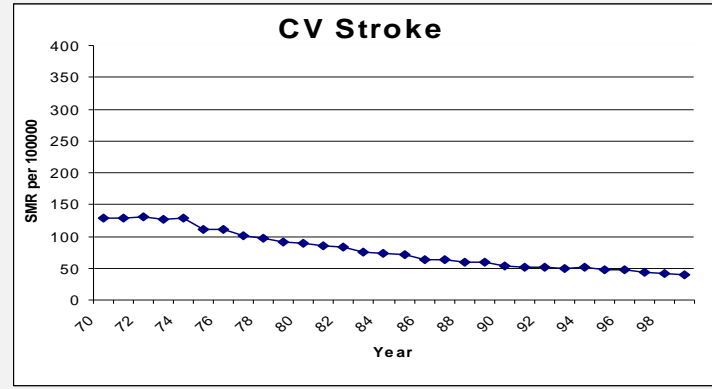
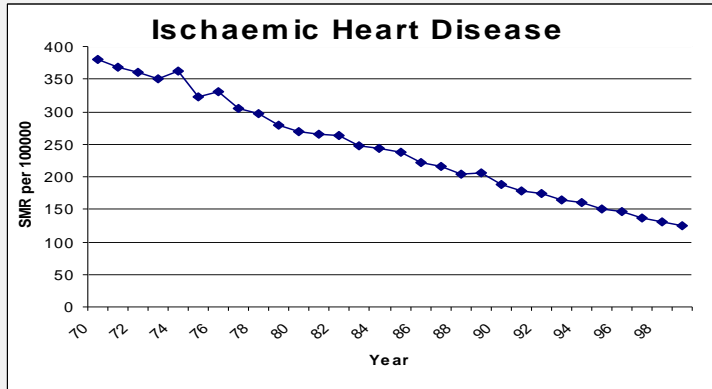


Other unintentional injuries



Consistency of cause specific mortality over time

Trends in standardized mortality rates : Australia 1970 - 2000



Content validity of COD reporting

- ◆ Description of mechanism for registering COD
 - ◆ Medical certification
 - ◆ In hospital, at home, in absentia
 - ◆ Lay reporting
 - ◆ With medical evidence, based on family report
 - ◆ Verbal autopsy
 - ◆ Interview with relatives of deceased weeks / months later, analysis of symptoms reported to derive cause of death
- ◆ Compilation of statistics according to method for registering COD
- ◆ Assessment of accuracy for each method - validation studies
 - ◆ comparing registered cause with 'true' cause in selection of cases

Use of ill defined categories – global status

	Median	Maximum
Symptoms	4.3	34.1
'Other' Injuries	0.4	6.0
Other cancers	0.8	2.7
Other CVD	5.6	34.7
Total ill defined	12.8	43.0

Other possible poorly defined conditions: septicaemia, renal failure

Misclassification patterns: hospital deaths

Causes of death	Medical record diagnoses																
	HIV/AIDS	Liver cancer	Lung cancer	Other malignant	Diabetes	Hypertens	IHD	Oth heart	Stroke	Pneum	COPD	liver dis	Oth digest	Renal	RTA	All others	Total
Septicaemia	44	2	3	3	53	6	8	3	55	38	16	27	19	47	2	144	470
Ill defined	16	6	7	5	27	16	75	36	25	14	39	10	14	13	9	135	447
Stroke			1		7	1	4	5	203					1	9	31	262
IHD	1		2		26	5	138	9	3	2	3		3	6		16	214
Pneumonia	40		3		9	1	4	2	25	44	21	7	1	10	3	37	207
All other external causes					1	1	2	1	25	1					93	61	185
Genitourinary diseases	1	1		1	37	24	2	3	3	1	1	5	2	58		17	156
Lung cancer		1	85	6					1		4					5	102
Road traffic accidents								1							91	0	92
Liver diseases	2	2			1		2		2			63	2	1		11	86
HIV/AIDS	79											1				3	83
Other malignant neoplasms	1	14	3	24						2				1		34	79
COPD	1		2		2		3	3	2	3	54			2		5	77

Reallocation of ill defined deaths by VA

15-59		60+	
Cause of death	%	Cause of death	%
Ischaemic heart diseases	13.1	Cerebrovascular diseases	15.9
Cerebrovascular diseases	9.7	Symptoms/signs	13.9
HIV	8.5	Chronic lower respiratory diseases	7.7
Other heart diseases	6.8	Ischaemic heart diseases	7.0
Symptoms/signs	6.8	Diabetes mellitus	5.9
Mental and behavioural disorders	4.6	Other heart diseases	4.0
Diabetes mellitus	4.0	Remainder of diseases of the genitourinary system	3.7
Diseases of the liver	4.0	Hypertensive diseases	3.5
Transport accidents	3.7	Malignant neoplasm of liver	2.8
Remainder of nervous system	3.1	Pneumonia	2.7
All other causes	35.7	All other causes	32.9
Total deaths	352	Total deaths	3004

Policy relevance

◆ Geographical disaggregation

- ◆ States/provinces
- ◆ Urban / rural areas

◆ Timeliness

- ◆ Statistics should be available within 2 years of the reference year of data