

CoMMiC Report
Committee on Morbidity & Mortality in
Children Under 5 Years

Neil McKerrow

Terms of Reference

- ◇ Register all deaths
 - Public & Private sector
 - Within & outside health sector
- ◇ Identify cause of death
 - Primary & secondary
 - Direct & indirect
- ◇ Make recommendations
 - Based on findings
 - To reduce morbidity & mortality

Interpretation of ToR

- ◇ Notification
 - Quantitative assessment
 - ◇ Define magnitude of childhood deaths
 - ◇ Define context of childhood deaths
- ◇ Investigation
 - Qualitative assessment
 - ◇ Describe pathological cause of death
 - ◇ Describe contributing factors
- ◇ Recommendations
 - Systems & practices

What did we find?

Year	IMR	U5MR	Source
1998	45.0	61.0	SADHS 1998
2000	59.1	94.7	MRC Burden of Disease Study
2003	42.5	57.6	SADHS 2003
2005	53.6	72.1	Stats SA mid-year estimate
2006	48.0	73.0	ASSA 2003
2007	46.1	70.9	ASSA 2003

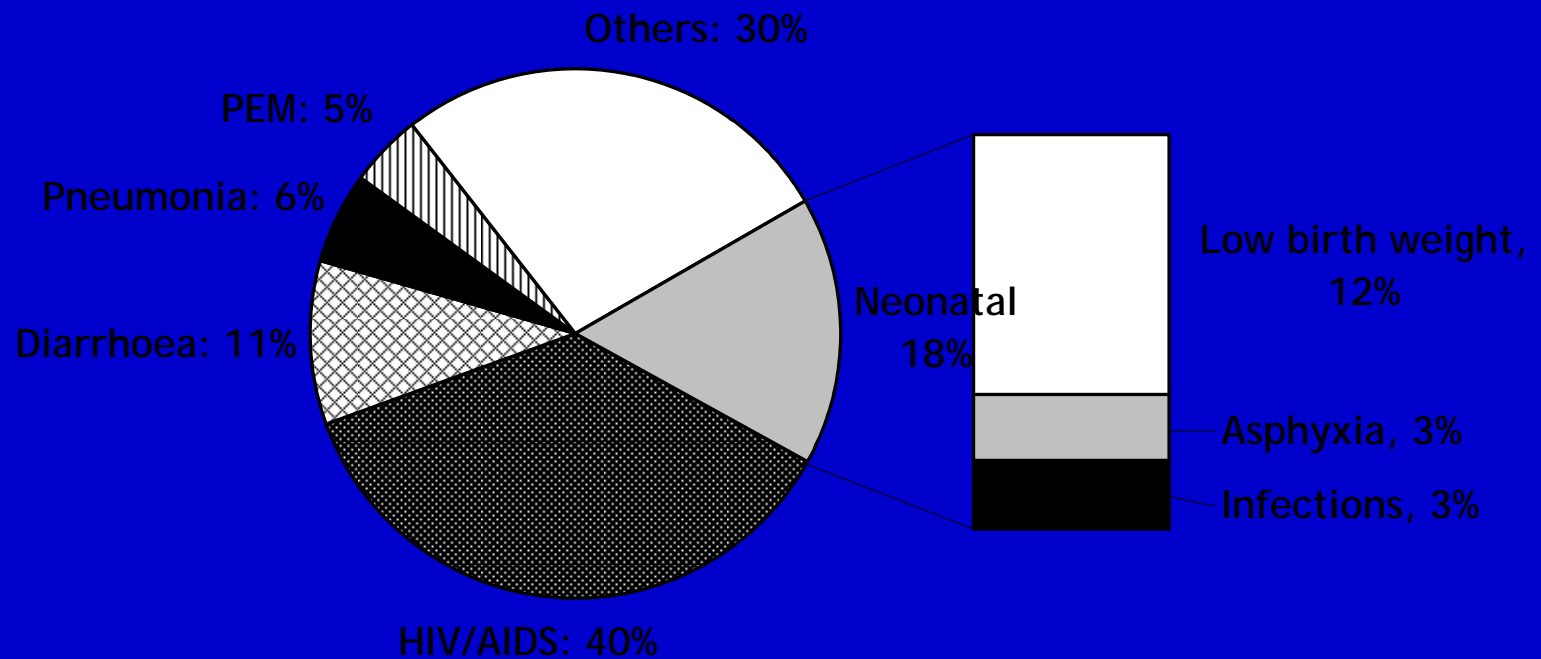
Estimated Provincial IMR, 1998 - 2007

Year	EC	FS	GP	KZN	LP	MP	NC	NW	WC	RSA
1998	61.2	53.0	36.3	52.1	37.2	47.3	41.8	42.0	30.0	45.0
2000	70.9	61.8	44.4	68.4	51.6	58.9	46.4	55.2	31.7	59.1
2003	68.3	48.1	33.5	30.4	34.1	40.5	28.7	61.9	43.5	42.5
2005										53.6
2006	62.0	58.0	37.0	62.0	37.0	53.0	34.0	44.0	26.0	48.0
2007	60.3	56.0	35.3	60.0	36.2	50.8	33.4	42.6	25.3	46.1

Estimated Provincial U5MR, 1998 - 2007

Year	EC	FS	GP	KZN	LP	MP	NC	NW	WC	RSA
1998	80.5	72.0	45.3	74.5	52.3	63.7	55.5	56.0	39.0	61.0
2000	105.0	99.0	74.6	116.4	80.7	99.8	68.1	88.5	46.3	94.7
2003	79.1	68.2	42.6	33.2	43.9	52.2	39.1	76.3	56.5	57.6
2005										72.1
2006	91.0	89.0	61.0	97.0	57.0	82.0	51.0	69.0	39.0	73.0
2007	89.2	85.5	58.1	93.2	54.9	78.8	50.4	67.1	38.8	70.9

Cause of U5 death



Burden of Disease Study 2002

Cause of U5 death

◇ Direct cause

- Gastroenteritis
- Acute respiratory tract infection
- Septicaemia
- TB

◇ Indirect cause

- Malnutrition – underlies 60% of U5 deaths
- HIV – underlies at least 50% of U5 deaths

Modifiable factors

	Care-giver and family	Administrators	Clinical Personnel
Home	<ul style="list-style-type: none"> • Delay in seeking care • Caregiver not realizing the severity of illness • Inappropriate nutrition • Home treatment with negative effect 		
PHC		<ul style="list-style-type: none"> • Lack of transport between home, clinic and hospital • Communication problems: staff-to-caregiver and staff-to-staff • Lack of access to the clinic and limited clinic opening times 	<ul style="list-style-type: none"> • IMCI not used for assessment • IMCI not used in case management • Delay in referring FTT • Insufficient assessment of FTT • Insufficient fluid management for diarrhoeal disease • No TB contact treatment
Admission and Emergency care		<ul style="list-style-type: none"> • Lack of high care beds and paediatric intensive care unit (ICU) facilities • Lack of senior doctors • Poor doctor-to-doctor communication, (e.g., no handover of critically ill patients) 	<ul style="list-style-type: none"> • Appropriate antibiotics not prescribed • Appropriate investigations not done • History taking incomplete • Physical examination incomplete • Assessment of shock/ dehydration insufficient
Ward		<ul style="list-style-type: none"> • Lack of professional nurses • Lack of high care beds/ICU facilities • Lack of senior doctors 	<ul style="list-style-type: none"> • Insufficient case assessment/ management at previous admission or visit • Appropriate investigations not done • IV fluids incorrectly prescribed • Inappropriate antibiotic and/or TB treatment prescribed • Respiratory rate/O₂ saturation not monitored

What did we learn?

- ◇ How little we really know
- ◇ Deaths
 - Large number (~60,000 pa)
 - Wide geographic distribution
 - High proportion outside health sector
- ◇ Data
 - Fragmented notification system
 - Poor or absent datasets

CoMMiC principles

- ◇ Adopt & adapt global best practices
- ◇ Strengthen existing systems
 - Vital registration & DHIS
- ◇ Avoid
 - Duplication (PNMMC)
 - Undermining existing processes (NCCEMD)
- ◇ Progressive realization
 - Health information systems
 - Child Health programmes
 - Child Health systems & care

What do we suggest?

- ◇ Improve information systems to support
 - Registration of deaths
 - Review of quality of care
- ◇ Strengthen existing child survival programmes
 - In communities
 - At the PHC level
 - In our hospitals
 - Involve private health sector

Recommendation – Quantitative data

- ◇ Strengthen existing health information systems
 - Modify death notification & death report forms
 - Modify RtHC to support community death report
 - Introduce standardized admission register
 - ◇ Improve quality of DHIS data
 - ◇ Support mortality audits
 - Review death notification process

Data needed

- ◇ The place of death:
 - Sector– public, private or community.
 - Site of death disaggregated to the facility level.
- ◇ Date of death to provide insight into seasonal variations in mortality.
- ◇ Demographic details of the children.
- ◇ Underlying health status with particular reference to:
 - Nutritional status:
 - ◇ Requires weight, height and mid upper arm circumference.
 - ◇ Interpretation of growth based on:
 - IMCI category for community deaths ie growing well not growing well or severe malnutrition.
 - WHO classification for facility deaths ie stunted, wasted or stunted and wasted.
 - HIV status:
 - ◇ Classified as exposed, suspected, infected, uninfected or unknown.
 - TB status:
 - ◇ Classified as exposed, infected, diseased or unknown.
- ◇ 1^o and 2^o causes of death.

Death notification

- ◇ Health District
- ◇ Growth parameters Height ___ cm;
 Weight __, _kg,
 Mid arm circumference (MAC) __, _cm
- ◇ Nutritional status Normal Stunted Wasted Stunted and wasted
- ◇ HIV status Exposed/Suspected/Infected/Uninfected/Unknown
- ◇ TB status Exposed /Infected/Diseased/Nil/Unknown

Death Report

- ◇ Health District
- ◇ Growth parameters Height ___ cm;
Weight __, __kg,
Mid arm circumference (MAC) __, __cm
- ◇ Nutritional status Normal Stunted Wasted Stunted and wasted
- ◇ HIV status Exposed/Suspected/Infected/Uninfected/Unknown
- ◇ TB status Exposed /Infected/Diseased/Nil/Unknown
- ◇ Cause of death Diarrhoea/Respiratory problem/Trauma/TB/Other

Road to Health Card

- ◇ Modify in order to
 - Facilitate completion of Death Report
 - Essential amendments
 - ◇ Interpretation of the nutritional status
 - OWFA, Normal, UWFA, and severe malnutrition.
 - ◇ HIV status
 - ◇ TB status – ongoing

Ward register

- ◇ Introduce Standardized:
 - Children's Ward Admission Register
 - Nursery Admission Register
 - Supports
 - ◇ DHIS
 - ◇ Vital registration
 - ◇ Child PIP / PPIP
 - Facilitates
 - ◇ Patient database
 - ◇ Monitoring referral patterns
 - ◇ Comprehensive care

Ward register

Paediatric Ward Admissions & Discharge Register v.3.3.8										Department of Paediatrics & Child Health Pietermaritzburg Metropolitan Hospitals Complex Pietermaritzburg, 3200 SOUTH AFRICA Tel: 033 8973264 Fax: 033 8973402							
Year:	Month:	Ward:	Ward ID:	Hospital:	District:	Province:				HEALTH SOUTH AFRICA		Pietermaritzburg Metropolitan Hospitals Complex Pietermaritzburg, 3200 SOUTH AFRICA Tel: 033 8973264 Fax: 033 8973402					
A. This section to be completed by Ward Clerk and/or Nursing Staff										B. This section to be completed by Doctor				C. This section to be completed by Ward Clerk and/or Nursing Staff			
Seq. No.	Date & Time of Admission	Child	Caregiver	Transfer in from?	Referred from?	Date of Birth Sex Age Category	Nutritional Status	Main Reasons for Admission	Discharge Diagnoses & Procedures	ICD-10 & SAMA Codes	HIV Status (confirmed)	TB Status	Outcome of Admission	Outcome Date & Time	Discharge Summary completed		
	YYYY-MM-DD	Folder No. Telephone		POPD Clinic Casualty Self	Clinic Self	YYYY-MM-DD	Weight (kg)		Diagnoses	ICD-10	HIV	TB	Discharged	YYYY-MM-DD	Yes		
	HH:MM	Surname, Name Address	Surname, Name Address	Gateway Private Spec.Clinic Other Hosp	Private Other Hosp	M F 0 - <28 days	Classification OWFA		1		Negative	No TB	Other Ward	HH:MM	No		
Weekday				Other Ward Specify:	Specify:	≥28 days - <1yr	Normal		2		Exposed	Exposed	Specify:	Follow-up Plan	N/A		
Weekend						≥1yr - <5yrs	UWFA		3		Infected	Infected	Abandoned	TCB on date:	Child PIP completed		
Public Holiday						≥5yrs - <13yrs	Severe malnutrition		4	Procedures	SAMA	ART	Unknown	Other Hospital Specify:	To Facility / Service: Yes		
						≥13yrs - <18yrs		Disability	1		Yes				No		
								Yes No	2		No				N/A		
	YYYY-MM-DD	Folder No. Telephone		POPD Clinic Casualty Self	Clinic Self	YYYY-MM-DD	Weight (kg)		Diagnoses	ICD-10	HIV	TB	Discharged	YYYY-MM-DD	Yes		
	HH:MM	Surname, Name Address	Surname, Name Address	Gateway Private Spec.Clinic Other Hosp	Private Other Hosp	M F 0 - <28 days	Classification OWFA		1		Negative	No TB	Other Ward	HH:MM	No		
Weekday				Other Ward Specify:	Specify:	≥28 days - <1yr	Normal		2		Exposed	Exposed	Specify:	Follow-up Plan	N/A		
Weekend						≥1yr - <5yrs	UWFA		3		Infected	Infected	Abandoned	TCB on date:	Child PIP completed		
Public Holiday						≥5yrs - <13yrs	Severe malnutrition		4	Procedures	SAMA	ART	Unknown	Other Hospital Specify:	To Facility / Service: Yes		
						≥13yrs - <18yrs		Disability	1		Yes				No		
								Yes No	2		No				N/A		
	YYYY-MM-DD	Folder No. Telephone		POPD Clinic Casualty Self	Clinic Self	YYYY-MM-DD	Weight (kg)		Diagnoses	ICD-10	HIV	TB	Discharged	YYYY-MM-DD	Yes		
	HH:MM	Surname, Name Address	Surname, Name Address	Gateway Private Spec.Clinic Other Hosp	Private Other Hosp	M F 0 - <28 days	Classification OWFA		1		Negative	No TB	Other Ward	HH:MM	No		
Weekday				Other Ward Specify:	Specify:	≥28 days - <1yr	Normal		2		Exposed	Exposed	Specify:	Follow-up Plan	N/A		
Weekend						≥1yr - <5yrs	UWFA		3		Infected	Infected	Abandoned	TCB on date:	Child PIP completed		
Public Holiday						≥5yrs - <13yrs	Severe malnutrition		4	Procedures	SAMA	ART	Unknown	Other Hospital Specify:	To Facility / Service: Yes		
						≥13yrs - <18yrs		Disability	1		Yes				No		
								Yes No	2		No				N/A		
	YYYY-MM-DD	Folder No. Telephone		POPD Clinic Casualty Self	Clinic Self	YYYY-MM-DD	Weight (kg)		Diagnoses	ICD-10	HIV	TB	Discharged	YYYY-MM-DD	Yes		
	HH:MM	Surname, Name Address	Surname, Name Address	Gateway Private Spec.Clinic Other Hosp	Private Other Hosp	M F 0 - <28 days	Classification OWFA		1		Negative	No TB	Other Ward	HH:MM	No		
Weekday				Other Ward Specify:	Specify:	≥28 days - <1yr	Normal		2		Exposed	Exposed	Specify:	Follow-up Plan	N/A		
Weekend						≥1yr - <5yrs	UWFA		3		Infected	Infected	Abandoned	TCB on date:	Child PIP completed		
Public Holiday						≥5yrs - <13yrs	Severe malnutrition		4	Procedures	SAMA	ART	Unknown	Other Hospital Specify:	To Facility / Service: Yes		
						≥13yrs - <18yrs		Disability	1		Yes				No		
								Yes No	2		No				N/A		

Main Reasons for Admission: record condition, symptoms, sign; TB Status: No TB, Exposed (TB contact present), Infected (FPD+ve), TB Disease (Diagn, CXR, AFB, Culture), Unknown; Discharge Diagnosis (IDD-10): record up to 4 diagnoses & ICD-10 codes; Follow-up Plan: Date To Come Back (TOB) and facility / service for follow-up

Child death review process

Notification

Facility death:

BI 1663 completed in triplicate by

- o Health Facility
- o Private doctor
- o Mortuary

1st copy

Facility information officer (FIO):

- o Registers death

Original

Community death:

BI 1680 completed in triplicate by Headman

Original & 1st copy

Regional DHA Office:

- o Registers death
- o Burial order
- o Abridged death certificate

1st copy

District information officer (DIO):

- o Consolidates district facility data
- o Collects BI 1680, DHA
- o Registers community deaths

National DHA Office:

- o Full death certificate

Provincial Mortality Review Team:

- o Consolidate provincial data
- o Validate provincial data
- o Prepare annual provincial report

NDoH & CoMMiC:

- o Consolidate national data
- o Validate national & provincial data
- o Prepare annual report

Statistics South Africa:

- o ICD10 coding
- o Cause of death statistics

Roles & responsibilities

- ◇ Facility level
 - Medical manager facilitate process & response
 - Medical officers notify deaths & do audits
 - Mortuary staff forward notification to FIO
 - FIO register deaths

- ◇ District office
 - Mortality clerk consolidate facility data
 - registers com & pvt deaths
 - collates all district data

Roles & responsibilities

◇ Province

– Provincial mortality review team

- ◇ Facilitate registration, audit & review process
- ◇ Monitor & validate provincial data
- ◇ Oversee interpretation of data
- ◇ Produce consolidated provincial report
- ◇ Facilitate feedback & response to data
- ◇ Facilitate implementation of recommendations

◇ National

– CoMMiC established ToR

Recommendation – Quality of care

- ◇ Investigate contributing factors
 - Introduce mortality audit in all health facilities
 - ◇ Child PIP
 - ◇ Alternative if already in use
- ◇ Triennial survey & audit of community deaths
 - PBT
 - VA & SA

Child death review process

Investigations & recommendations

Facility Medical Manager:

- Facilitate monthly mortality audits
- Prepare 6 monthly mortality report



Provincial Mortality Review Committee:

- Facilitate monthly mortality audits
- Collect facility mortality audit reports
- Prepare annual consolidated provincial report
- Identify provincial response
- Facilitate implementation of annual provincial & national recommendations



Committee on Morbidity & Mortality in Children Under 5 Years:

- Collect provincial registration and audit data
- Prepare annual consolidated national report
- Identify national response
- Prepare annual report & recommendations
- Monitor implementation of national recommendations

Recommendation – Clinical care

- ◇ Strengthen existing child survival programmes
 - CHW programme & HHCC IMCI
 - EPI (Rotavirus & pneumococcal vaccines)
 - PMTCT
 - INP & WHO 10 steps
- ◇ Strengthen Primary health care
 - Household & community component of IMCI
 - IMCI
 - Standard Treatment Guidelines for GPs (EDL)
- ◇ Strengthen emergency treatment & referrals
 - ETAT
 - Suitable neonatal & paediatric emergency transport system

Conclusion

- ◇ Initial focus on HIS
- ◇ Support improved death notification systems
 - New documents
 - ◇ Children's Ward Admission Register
 - New notification process
 - ◇ Facility, district & provincial level
 - ◇ Staff, infrastructure & systems
- ◇ Support mortality reviews
 - Child PIP
- ◇ Oversee implementation of recommendations