

Saving Mothers: 4th Comprehensive Report 2005-2007

NCCEMD



Terms of reference for NCCEMD (1997-2007)

- Make **recommendations** based on analysis of the reported maternal deaths such that **their implementation would result in a reduction in the maternal deaths**
- Recommendations must be phrased in such a manner that their **implementation can be measured** and reported on in subsequent reports
- Recommendations must be **within the health care resources** of the country

Confidential enquiries into maternal deaths (CEMD) can be defined as: a **systematic multidisciplinary anonymous investigation of all or a representative sample of maternal deaths** occurring at an area, region (state) or national level **which identifies:**

- numbers
- causes
- avoidable or remediable factors associated

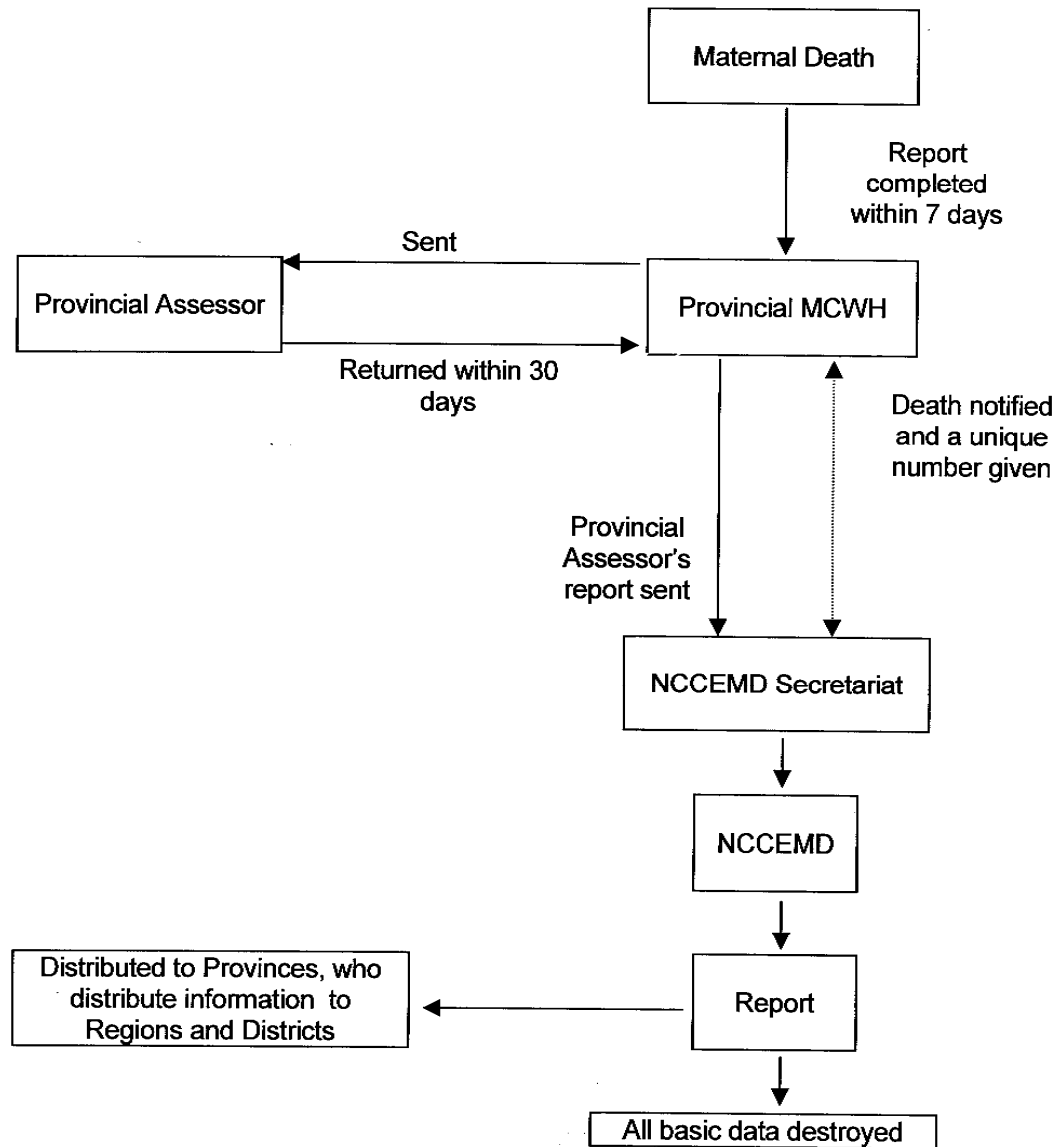
Through the **lessons learnt** from each woman's death, and through **aggregating the data**, confidential enquiries provide:

- evidence of where the main problems in overcoming maternal mortality lie
- an analysis of what can be done in practical terms,
- highlight the key areas requiring recommendations for health sector and community action
- guidelines for improving clinical outcomes.

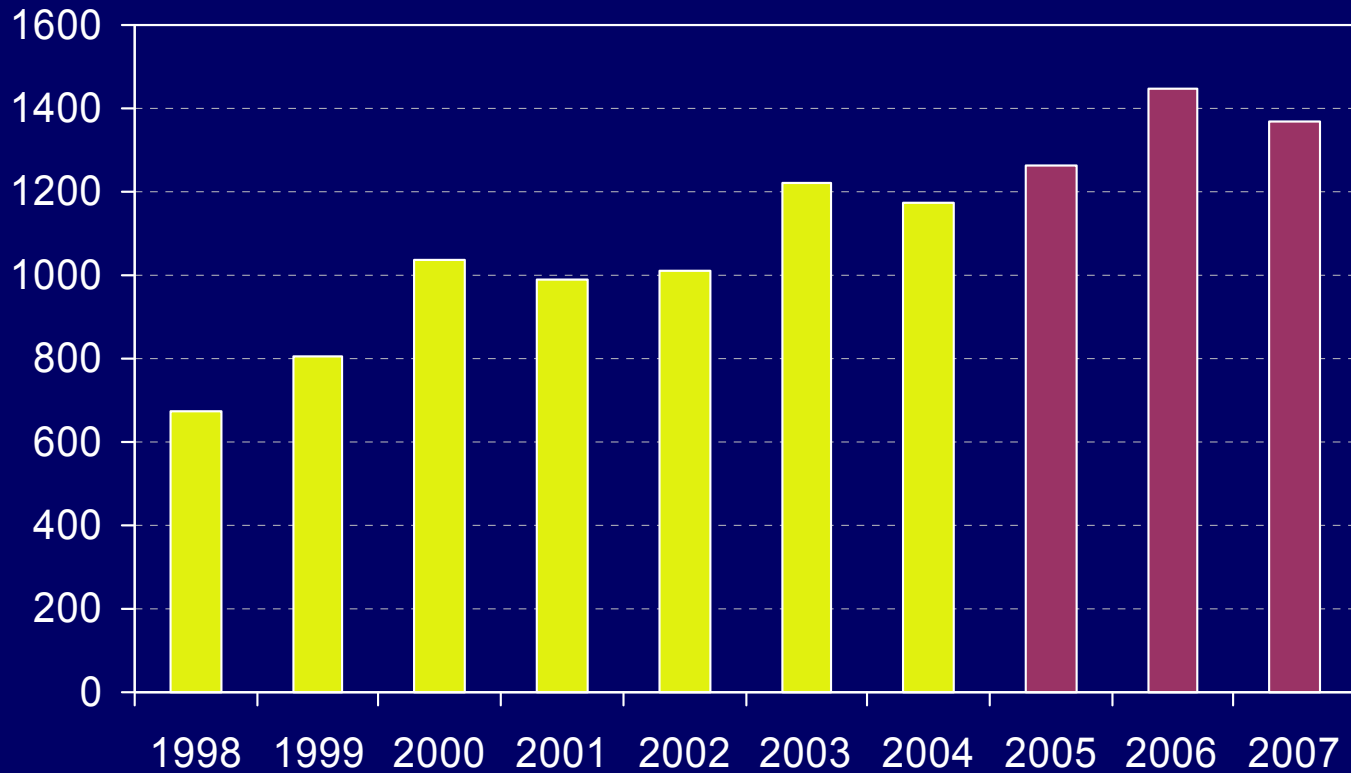
What the CEMD cannot do

- Indicate how many deaths good management prevented
- Give Maternal Mortality Ratio if data incomplete or denominators inaccurate

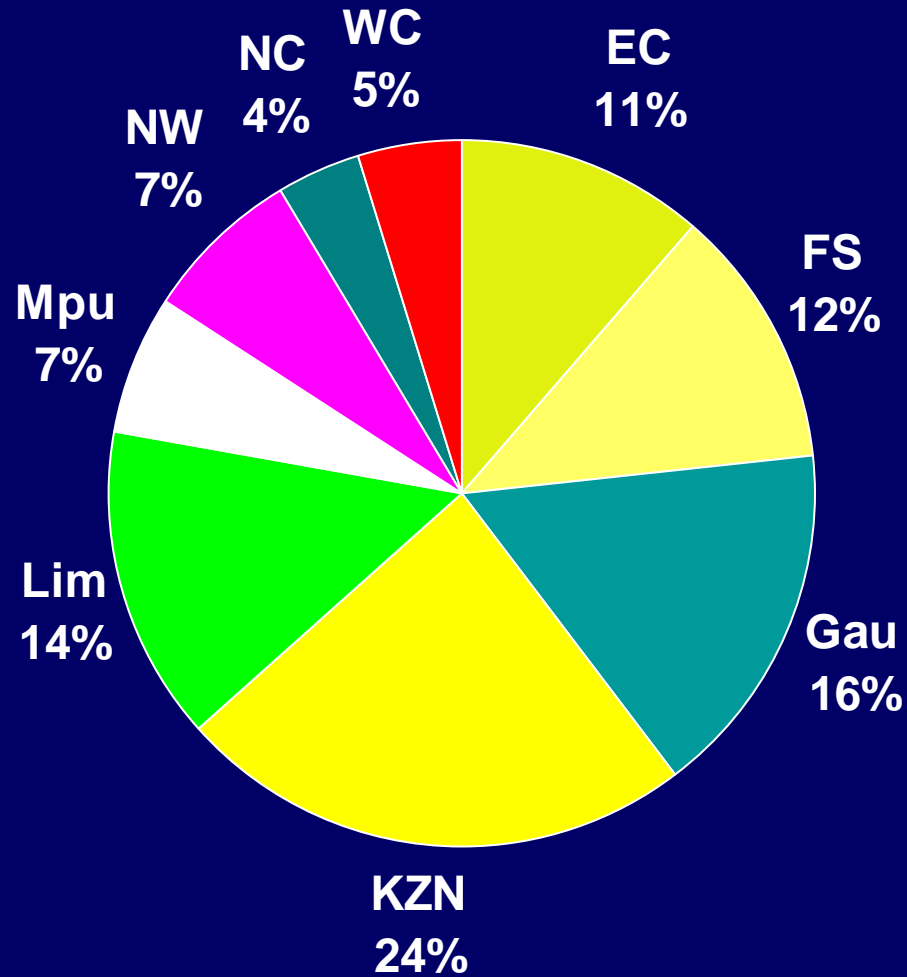
The process of Confidential Enquiry into Maternal Deaths



Number of reported maternal deaths: 1998-2007



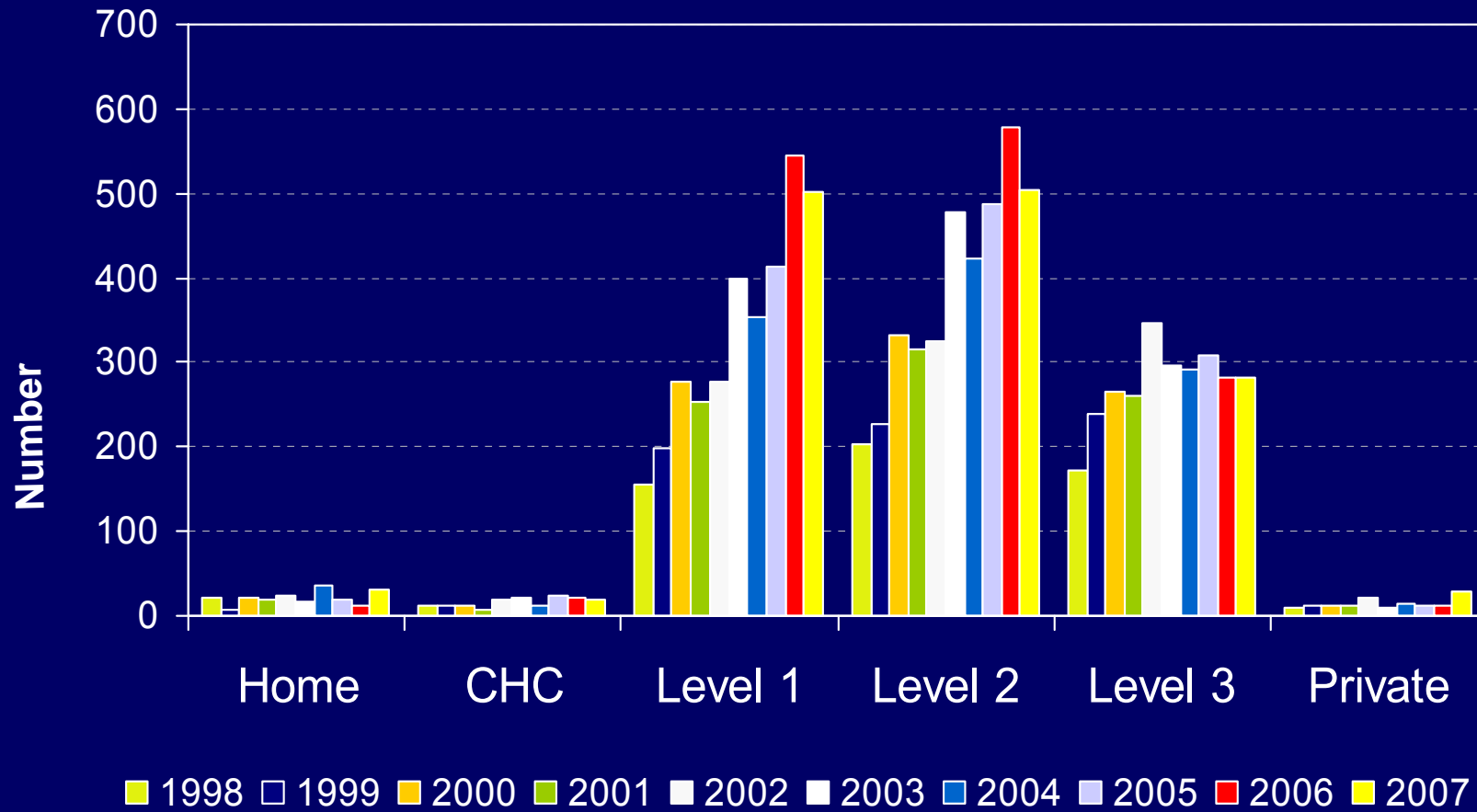
Distribution of maternal deaths per province 2005-2007



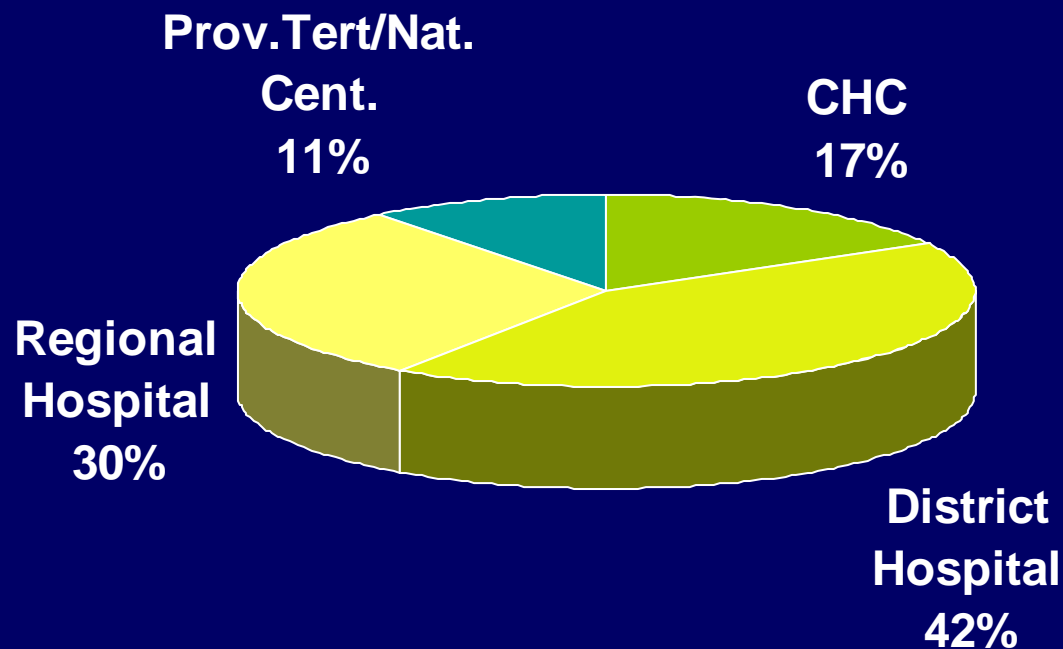
Age and maternal death

- Women < 20 years of age greater risk of dying
 - Complications of hypertension
- Women \geq 35 years greater risk of dying
 - Obstetric haemorrhage
 - Ectopic pregnancies
 - Embolism
 - Acute collapse
 - Pre-existing medical disease

Distribution of deaths per level of care



Distribution of deliveries in South African public institutions (DHIS data)



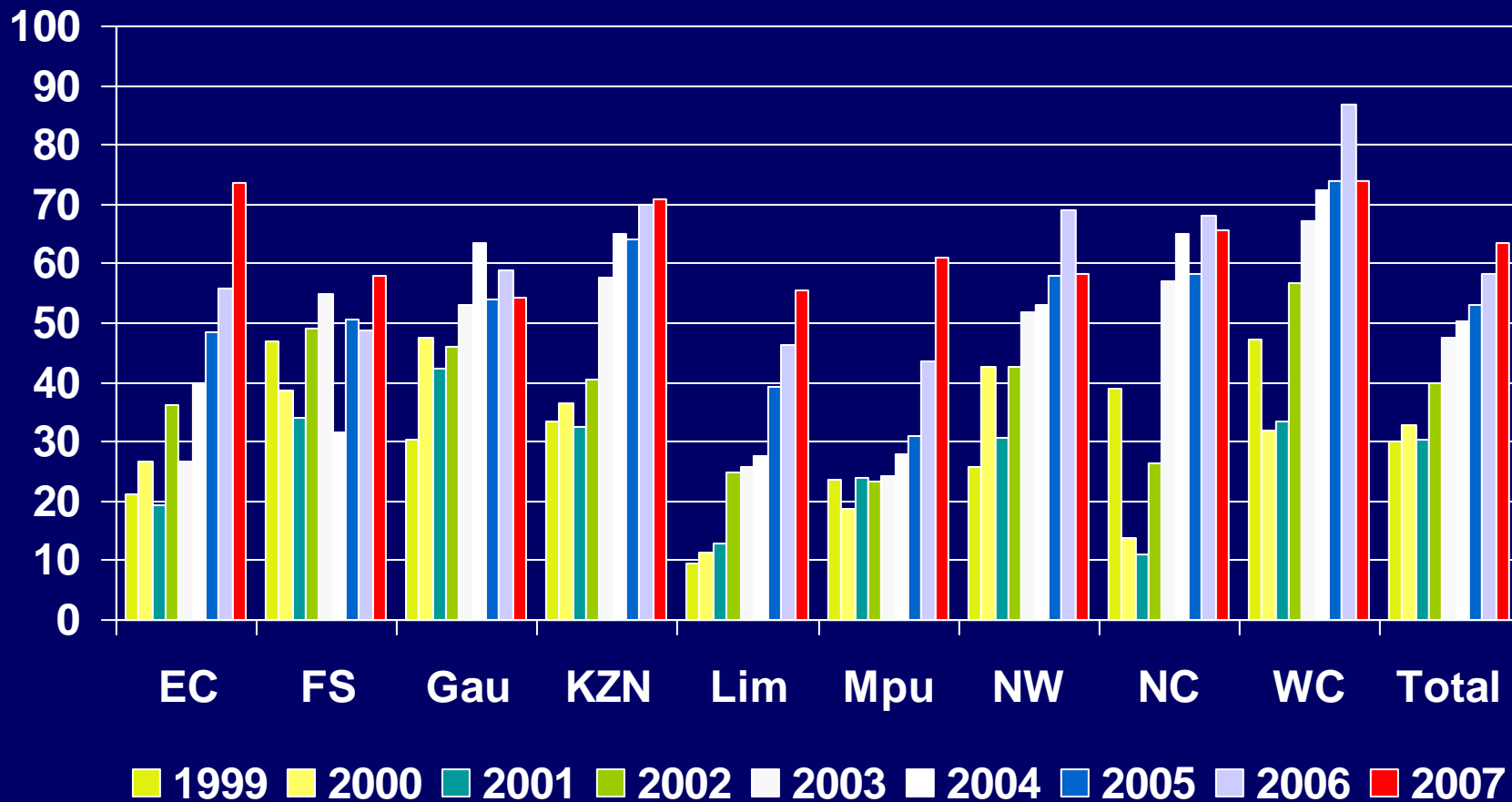
Primary Obstetric Cause	2005-2007	
	N	%
Direct	1819	45.9
Hypertension	622	15.7
Postpartum haemorrhage	383	9.7
Antepartum haemorrhage	108	2.7
Ectopic pregnancy	55	1.4
Abortion	136	3.4
Pregnancy Related Sepsis	223	5.6
Anaesthetic related	107	2.7
Embolism	57	1.4
Acute collapse	128	3.2
Indirect	1966	49.7
Non pregnancy related Infections	1729	43.7
AIDS	915	23.1
Pre-existing Maternal Disease	237	6.0
Unknown	174	4.4
Coincidental	118	

Sub-category of indirect causes of maternal deaths for 2005-7

- CNS	21	8.9
- Respiratory	40	16.9
- Haematological	22	9.3
- Genito-urinary	4	1.7
- Immune (collagen disease)	7	3.0
- Skeletal	2	0.8
Non-pregnancy-related infections	1729	
- Pneumonia	393	22.7
- AIDS	915	52.9
- TB	229	13.2
- Endocarditis	1	0.1
- UTI	3	0.2
- Appendicitis		0.9
- Malaria	16	6.1
- Meningitis	106	3.8
- Other	66	1.7
Total		51

Primary Obstetric Cause	2005-2007		2002-2004	
	N	%	N	%
Direct	1819	45.9	1767	53.6
Hypertension	622	15.7	628	19.1
Postpartum haemorrhage	383	9.7	313	9.5
Antepartum haemorrhage	108	2.7	129	3.9
Ectopic pregnancy	55	1.4	47	1.4
Abortion	136	3.4	114	3.5
Pregnancy Related Sepsis	223	5.6	274	8.3
Anaesthetic related	107	2.7	91	2.8
Embolism	57	1.4	64	1.9
Acute collapse	128	3.2	107	3.2
Indirect	1966	49.7	1430	43.4
Non pregnancy related Infections	1729	43.7	1246	37.8
AIDS	915	23.1	662	20.1
Pre-existing Maternal Disease	237	6.0	184	5.6
Unknown	174	4.4	99	3
Coincidental	118		110	

Percent HIV testing of maternal deaths per Province: 1999-2007



Estimated Institutional MMR

Primary obstetric cause	HIV-	HIV+	Unk
Direct	22.6	167.7	169.2
Hypertension	8.5	28.4	59.9
Postpartum haemorrhage	5.2	24.3	35.3
Antepartum haemorrhage	1.3	3.8	11.5
Ectopic pregnancy	0.3	1.5	7.0
Abortion	0.3	25.0	14.5
Pregnancy Related Sepsis	2.4	69.5	15.0
Anaesthetic related	1.2	4.6	11.2
Embolism	1.3	2.6	4.2
Acute collapse	1.9	7.9	10.5
Indirect	7.2	303.9	70.0
Non pregnancy related Infections	3.5	286.8	52.2
Pre-existing Maternal Disease	3.7	17.1	17.7
Unknown	1.8	14.6	14.1
Total	31.5	478.4	253.2

Patient orientated avoidable factors, missed opportunities and substandard care

Category	% of assessable deaths	
	2005-7	2002-4
No antenatal care	17.7	18.1
Infrequent antenatal care	6.0	5.9
Delay in seeking medical help	26.7	26.8
Unsafe abortion *	25.7	21.1
Other	6.9	6.0

Administrative avoidable factors, missed opportunities and substandard care

Category	% of assessable deaths	
	2005-7	2002-4
Transport problem – home to institution	1.9	3.0
Transport problem – between institutions*	8.4	9.7
Lack of accessibility	1.3	1.0
Lack of health care facilities	8.6	11.2
Lack of ICU facilities	9.2	
Lack of blood**	19.0	9.2
Lack of appropriately trained staff	8.9	12.8
Communication problems	4.2	3.4
Other	6.8	5.0

Health care provider related avoidable factors, missed opportunities and substandard care per level of care:
2005-7

Category	% of assessable deaths		
	Level 1	Level 2	Level 3
Initial assessment	12.1	8.1	5.4
Problem recognition	22.0	17.9	9.4
Delay referring	15.6	3.8	0.6
Managed at inappropriate level	13.7	3.1	
Incorrect management	7.3	4.2	2.3
Substandard management	29.6	30.3	19.8
Not monitored adequately	7.3	5.6	4.5
Abnormal monitoring no action	6.0	6.1	4.1

Summary

- Increase in number of deaths reported
- Decrease in deaths due to complications of hypertension
- Increase in deaths due to abortion, coupled with decrease in TOPs
- Importance of pregnancy related sepsis masked by classifying deaths as being due to AIDS
- HIV infection increases risk of maternal death approximately 10 times

Summary

- Chapter heads noted
 - Lack of skills
 - Caesarean section
 - Obstetric emergencies
 - Anaesthesia
 - Examination of cardiovascular system
 - Lack of adherence to protocols
 - Lack of knowledge and skills in managing puerperium
- Many of the problems are the same as reported previously

Recommendations

Saving Mothers

2005-2007

NCCEMD

Many of the problems identified
in previous reports **are still
present**, hence many of the
recommendations are the same

Principles of Recommendations

(laid out in report)

- Recommendation
 - Indicator
 - Target
 - Implementation strategy
 - Golden Threads
 - Introduction of recommendations into Key Performance Areas of managers
 - Outreach on-site, face-to-face teaching and training that is documented
 - Necessary actions

Four main areas

- Improving health care provider **knowledge and skills**
- Improving **quality and coverage** of reproductive health services
- Establishing **norms and standards**
- **Community involvement**

Improving health care provider
knowledge and skills

Guidelines on the management of important conditions causing maternal deaths must be available and utilised appropriately in all institutions where women deliver. All midwives and doctors must be trained on the use of these guidelines.

Key conditions:

- Hypertensive disorders in pregnancy
- Obstetric haemorrhage,
- Septic abortion,
- Puerperal Infections,
- HIV/AIDS (including community acquired pneumonias, PCP, meningitis and lactic acidosis), TB and Malaria
- Resuscitation: Maternal and Neonatal.
- Cardiac disease in pregnancy

Training should be provided for all health professional working in maternity units in practical obstetrical and surgical skills.

Skills should be provided in anaesthesia, especially in level 1 institutions.

All women should be offered information on, **prevention and screening for and appropriate management of communicable and non-communicable diseases**

Specific conditions:

- HIV/AIDS
- Tuberculosis
- Malaria
- Hypertension
- Anaemia
- Cardiac disease

Postnatal care must be strengthened

Improving **quality and coverage** of reproductive health services

Contraceptive use must be promoted through education and service provision.

The number of mortalities from unsafe abortion must be reduced

Establishing **norms and standards**

Criteria for referral and referral routes must be established and utilized appropriately in all provinces. Emergency transport facilities must be available for all pregnant women with complications (at any site).

Establishing staffing and equipment norms per level of care must be performed for every health institution concerned with the care of pregnant women.

Blood for transfusion must be available at every institution where caesarean sections are performed.

Community involvement

Empower and involve women, families and communities at large for active participation in activities, projects and programmes aiming at improving maternal and neonatal health as well as reproductive health in general.

Objectives	Interventions	Indicators	Targets	Lead	Partners
Emergency transport facilities being available for all pregnant women in need (at any site)	Establish written agreements between different health districts/region and provinces and include emergency services	Number of agreements signed	All facilities providing maternity care services		
Availability of criteria for referral and referral routes in all provinces.	Monitor transport times and investigate cases with excessive delays				
	Inform and update health care providers of policies at least twice a year because of staffing changes	Number of documented information sessions with minutes			
	Telecommunication networks must be extended to cover rural areas so that contact can be made with clinics and ambulances	Situational Analysis to be done to establish baseline			
	Make obstetric emergencies (including ectopic pregnancies and major gynaecological haemorrhages), red code (highest priority)				
	Investigate establishment of patient waiting areas				

V	Interventions	Indicators	Targets	Timeframes			Responsibility	Partners
				2009	2010	2011		
Availability of blood for transfusion and other blood products at every institution where caesarean sections are performed	Ensure blood & blood products are available and audit use of and availability of blood and blood products	Number of maternity care facilities performing caesarean sections that have at least 2 units of blood available <i>on-site</i> for use	All maternity facilities performing deliveries in the 18 priority districts by 2009 and all other maternity facilities in other districts by 2011				National MCWH Provincial and District MCWH	SA National Blood Transfusion Service's
	Establish blood transfusion committees/an appropriate person to audit use of blood products on a regular basis	Number of institutions with a blood transfusion committee/person identified to audit use of blood products	All maternity care facilities doing C/S must have a blood transfusion committee /identified person by 2010					

Thank you



Life expectancy: 39 years



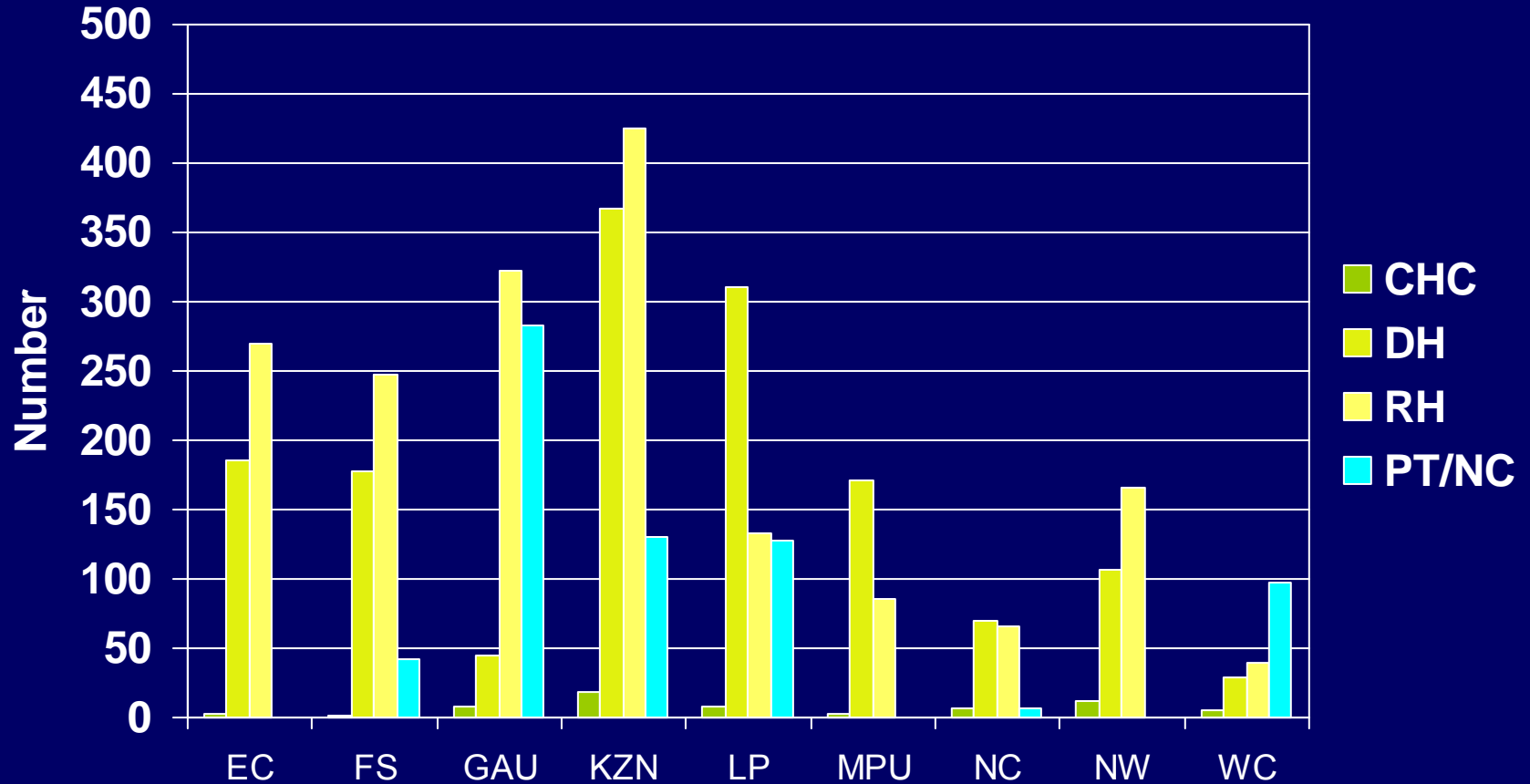
Life expectancy: 82 years

"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."

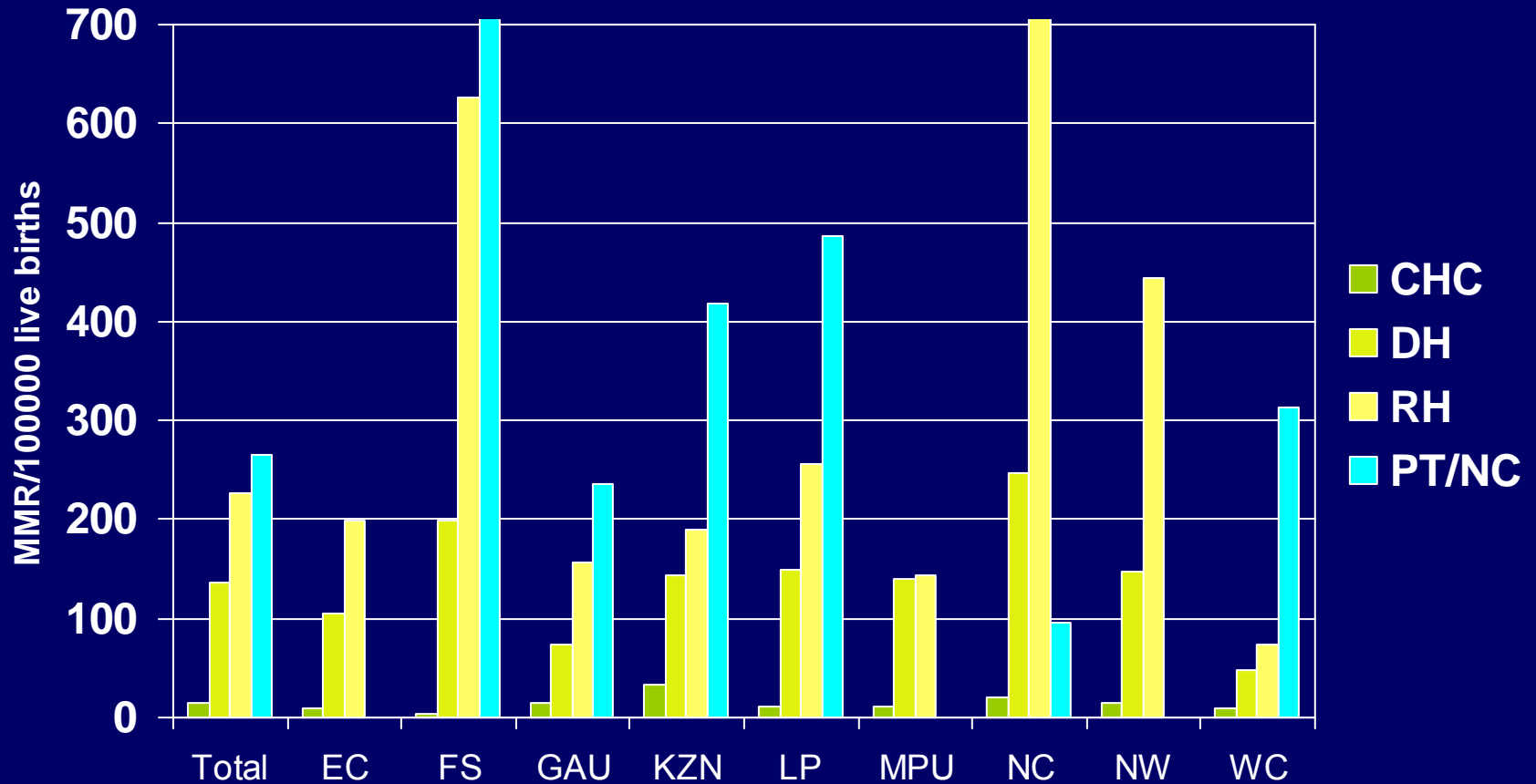
WHO Constitution

- Institutional deaths
- Hypertension
- Denominators

Number of deaths per province at each level of care



MMR for deaths per province at each level of care





Life expectancy: 39 years

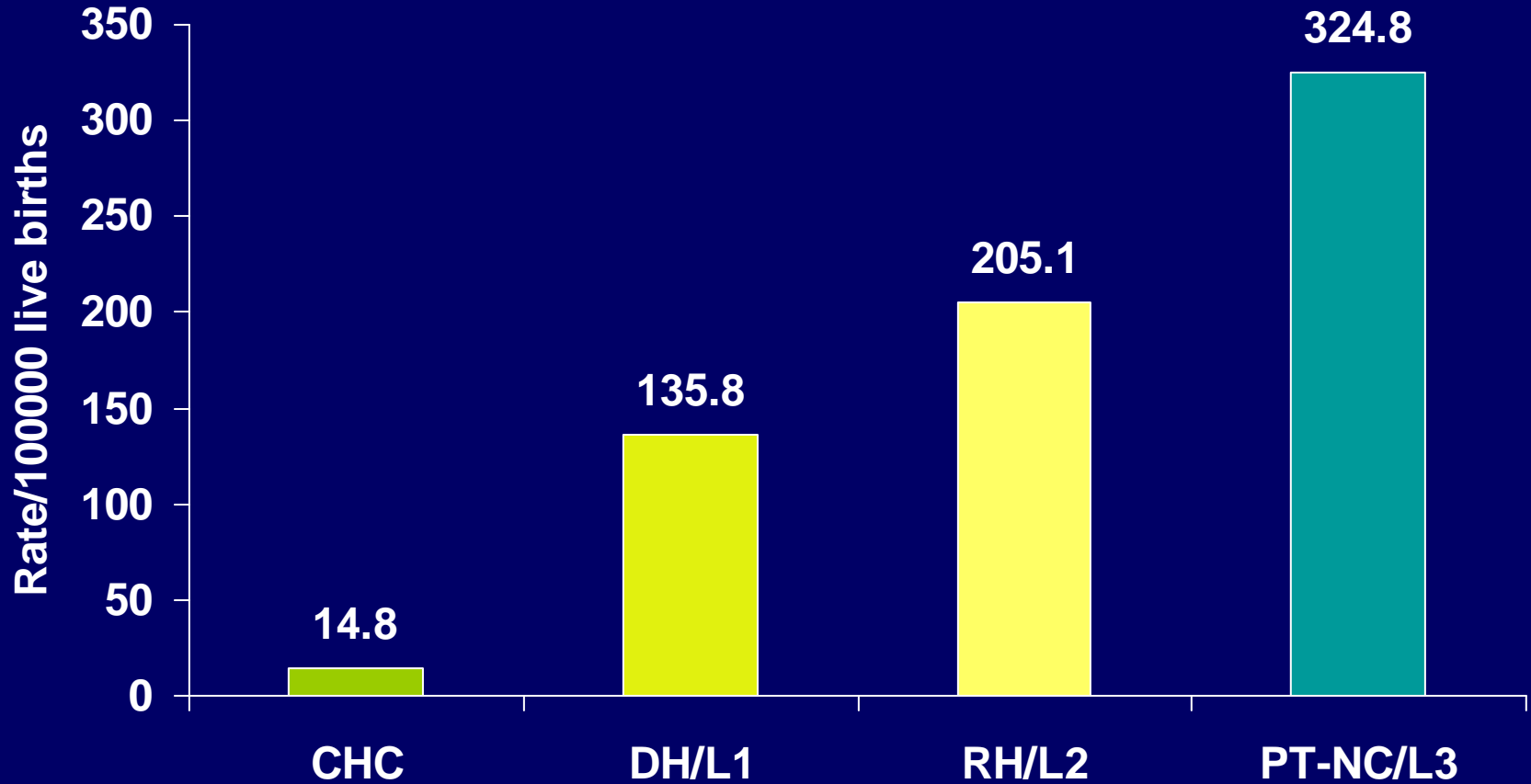


Life expectancy: 82 years

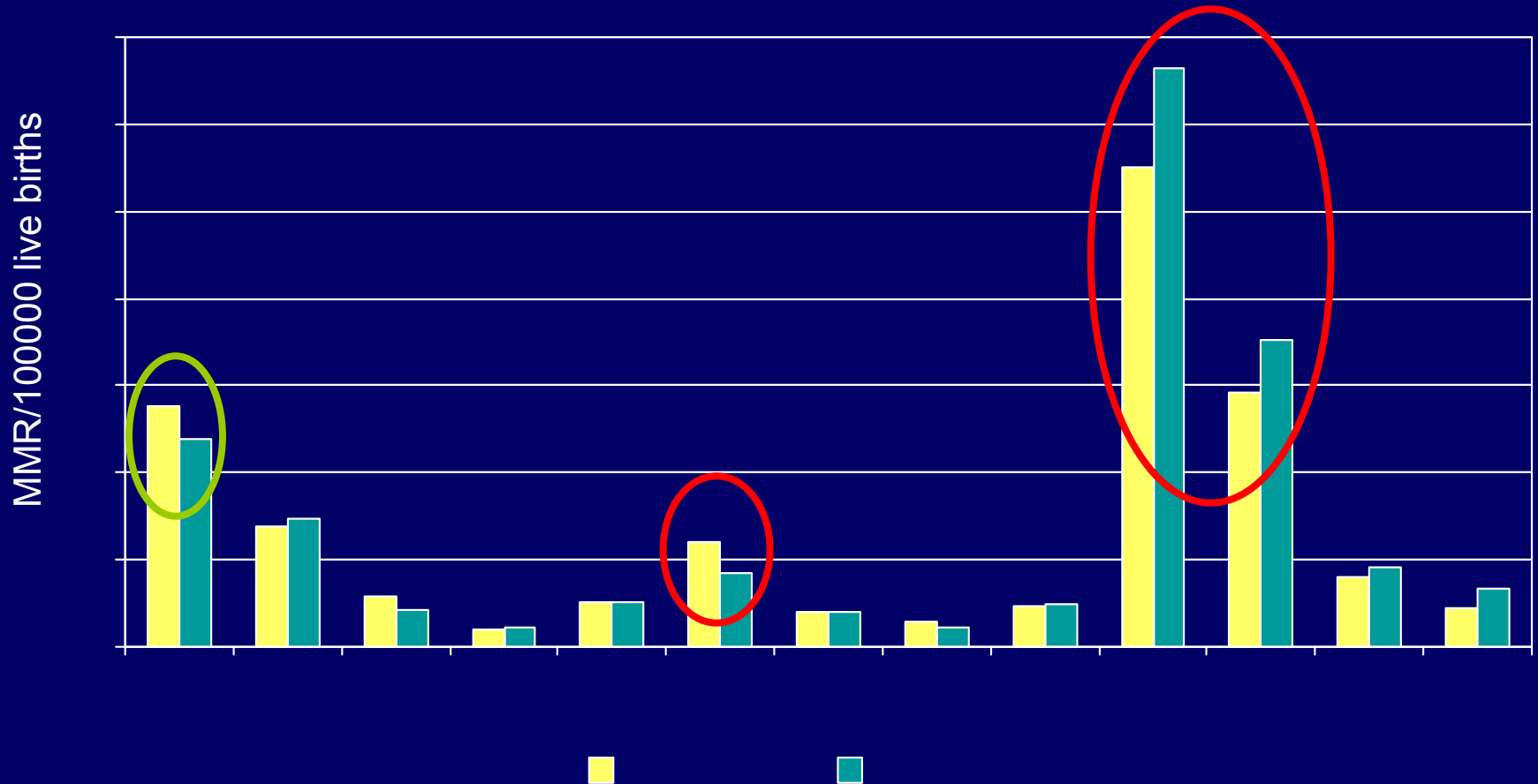
"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."

WHO Constitution

MMR per level of care



Comparison of primary obstetric causes of death (MMR – Institutional deaths)



Clearly avoidable deaths per disease category and as a proportion of avoidable deaths: 2005-7

Primary obstetric cause	Total deaths	Number avoidable deaths	% Primary cause	% avoidable deaths (n=1519)
Direct	1819	1065	58.5	70.1
Hypertension	622	304	48.9	20.0
Postpartum haemorrhage	383	308	80.4	20.3
Antepartum haemorrhage	108	74	68.5	4.9
Ectopic pregnancy	55	37	67.3	2.4
Abortion	136	74	54.4	4.9
Pregnancy related sepsis	223	128	54.4	8.4
Anaesthetic related	107	91	85.0	6.0
Embolism	128	34	26.6	2.2
Indirect	1966	421	21.4	27.7
Non-pregnancy related infections	1729	355	20.5	23.4
AIDS	915	161	17.6	10.6
Pre-existing maternal disease	237	66	27.8	4.3
Unknown	174	33	19.0	2.2
TOTAL	1959	1519	38.4	100

225 deaths classified as AIDS also had another primary obstetric cause. If re-classify then:

Primary Obstetric Cause	Theoretical %	Old classification%
Direct	52.4	45.9
Hypertension	15.7	15.7
Postpartum haemorrhage	10.1	9.7
Antepartum haemorrhage	2.7	2.7
Ectopic pregnancy	1.4	1.4
Abortion	4.9	3.4
Pregnancy Related Sepsis	10.2	5.6
Anaesthetic related	2.7	2.7
Embolism	1.4	1.4
Acute collapse	3.2	3.2
Indirect	44.0	49.7
Non pregnancy related Infections	38.0	43.7
Pre-existing Maternal Disease	6.0	6.0
Unknown	4.4	4.4
Total	100.0	100.0

Impact of HIV infection on Maternal Deaths

Primary Obstetric Cause	HIV +	HIV -	Unk
Direct	401	359	1059
Hypertension	111	136	375
Postpartum haemorrhage	79	83	221
Antepartum haemorrhage	15	21	72
Ectopic pregnancy	6	5	44
Abortion	40	5	91
Pregnancy Related Sepsis	91	38	94
Anaesthetic related	18	19	70
Embolism	10	21	26
Acute collapse	31	31	66
Indirect	1414	114	438
Non pregnancy related Infections	1347	55	327
AIDS	891	1	23
Pre-existing Maternal Disease	67	59	111
Unknown	57	29	88
Total	1872	502	1585