Saving Mothers 2023-25: Report on Confidential Enquiries into Maternal Deaths in South Africa

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National Committee for Confidential Enquiries into Maternal Deaths (NCCEMD)

AWACC 2026

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

2030 NDP

Acknowledgements

NCCEMD primary objective: to confidentially investigate and/or analyse causes of and contributing factors to maternal deaths in South Africa and make recommendations which, if implemented, will improve women's health and reduce maternal mortality

1. Saving Mothers Report Editor, Professor L Chauke, and Deputy Editor, Prof S Fawcus
2. Bontle Mamabolo from MRC unit, UP, assisted with data collation and formatting for analysis by the committee
3. NCCEMD members
4. NCCEMD provincial assessors
5. MCWH provincial coordinators
6. NDOH MCWH cluster

Source of Data

- Each Province runs a confidential enquiry process where each maternal death must be notified and then is assessed by a pair of provincial expert assessors. For cases where the pregnant woman had an anaesthetic the case is separately assessed by an anaesthetic assessor
- Assessments are entered at Provincial level into a database - MaMMAS (Maternal morbidity and mortality assessment system)- to count and analyse the maternal deaths. Data from each province are collated nationally
- MaMMAS: captures all DDPCP (Deaths During Pregnancy, Childbirths and Puerperium): mainly Maternal Deaths but also a few Coincidental Deaths in pregnancy. All notified cases are included irrespective of where the death occurred (in facility, at home, and from private sector)

- We are confident that the great majority of maternal deaths are notified and that the findings of the Saving Mothers reports provide a reliable picture of the causes of maternal death in South Africa

SDG 3: Maternal Mortality Ratio (MMR)

World SDG target: 70 maternal deaths per 100 000 live births

- No country should have a MMR above 140
- Target to be achieved by 2030 (4 years' time)

- **To calculate MMR for Saving mothers report**
  - **Numerator:** notified maternal deaths
  - **Denominator:** live births from DHIS (Babies born before arrival at health facility (BBAs) are included) and should include births in private facilities

Trends in numbers live births (DHIS*) and maternal deaths (NCCEMD) 2017-2025

Year	Number of Live Births	Number of Maternal Deaths
2017	905 398	1222
2018	950 856	1169
2019	1 011 305	1056
2020	1 035 255	1183
2021	1 015 782	1497
2022	968 128	1062
2023	883 244	987
2024	865 942	974
2025	819 876	838

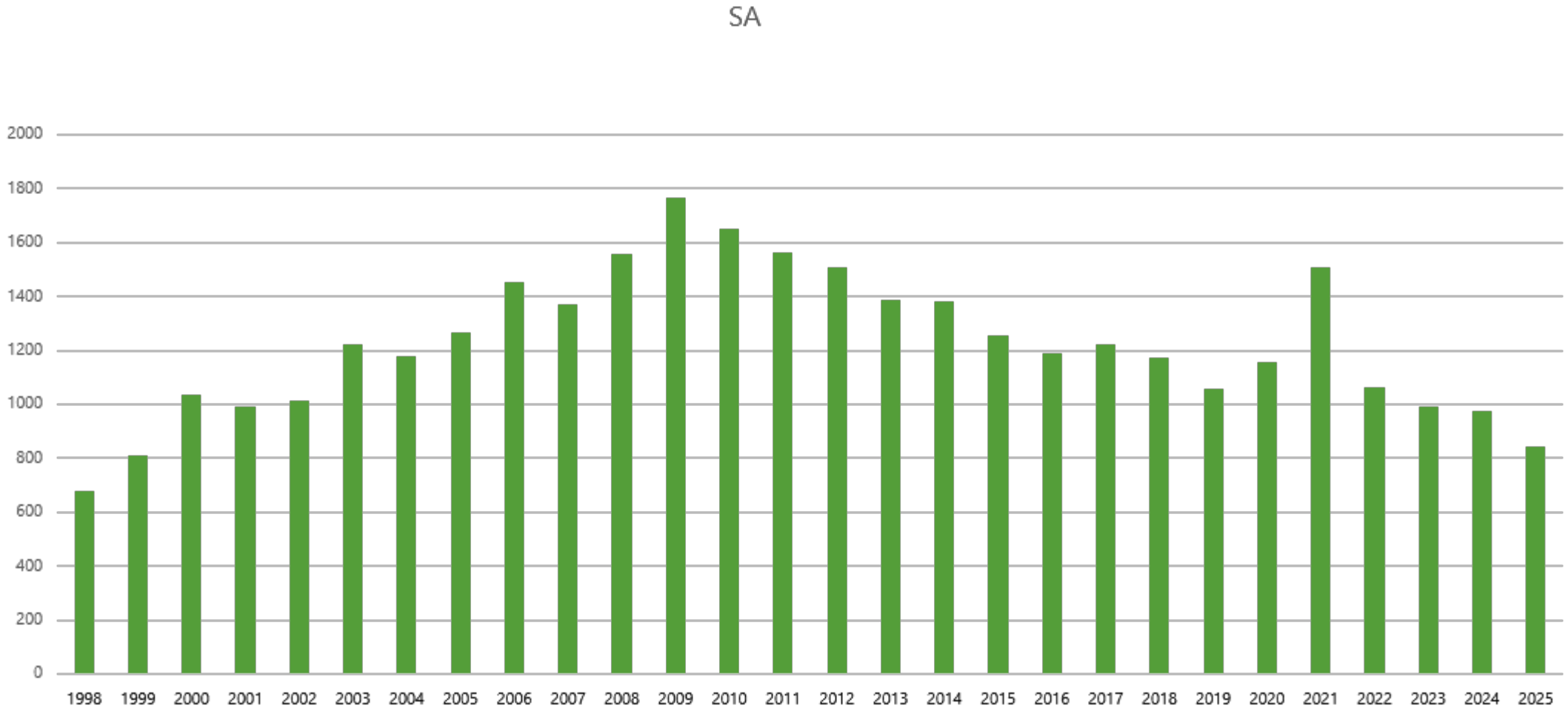
* Public sector facility live births (+ BBAS), incomplete private sector number live births

2025 Maternal Death numbers from NCCEMD (MaMMAS) and DHIS data; and MMR per province

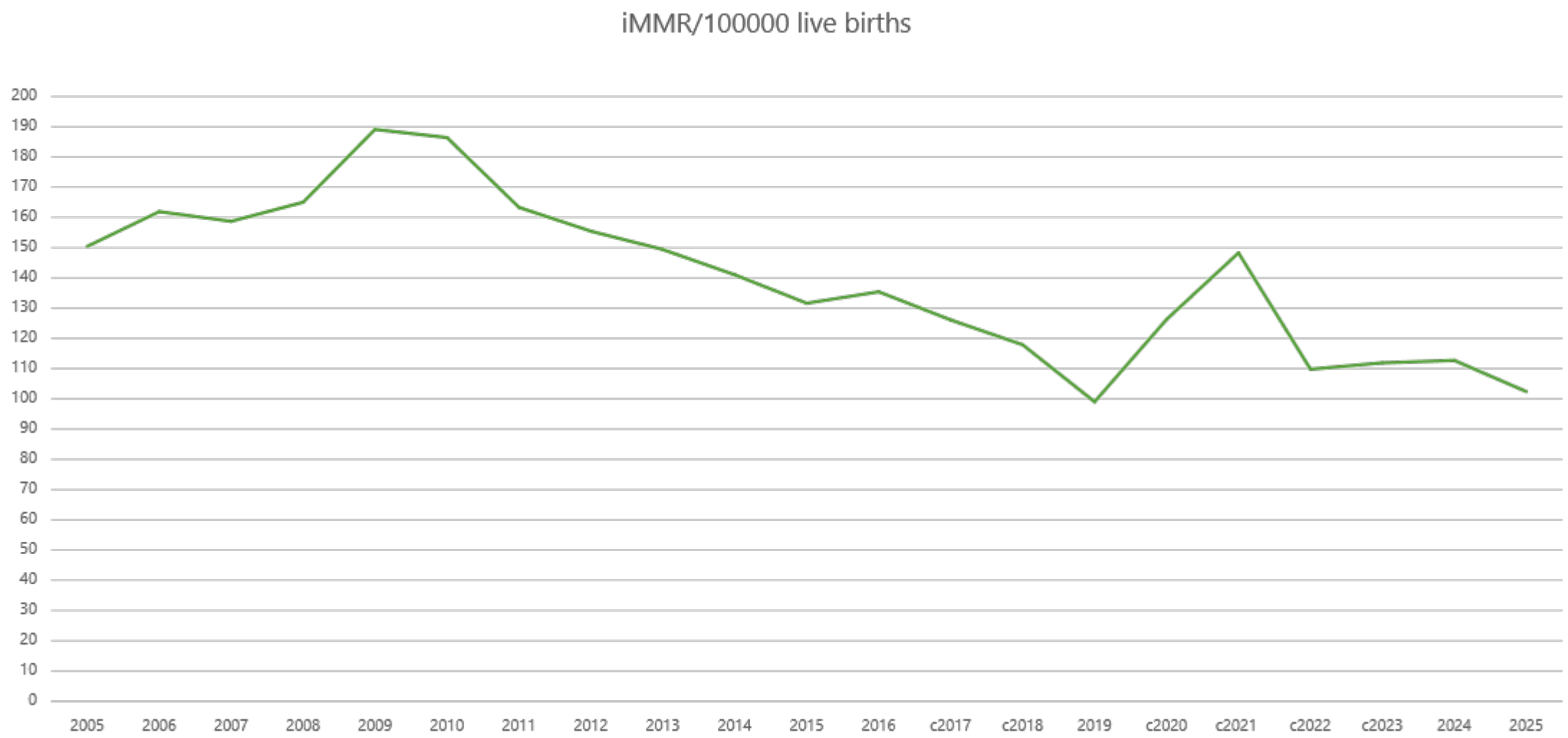
Province**	Live births	MaMMAS MD	DHIS MD	MaMMAS MMR	DHIS iMMR
Eastern Cape	83375	97	89	116.3	106.7
Free State	38661	40	39	103.5	100.9
Gauteng	189592	239	212	126.1	111.8
KwaZulu-Natal	175472	156	146	88.9	83.2
Limpopo	103835	91	90	87.6	86.7
Mpumalanga	67196	96	80	142.9	119.1
Northern Cape	20702	21	17	101.4	82.1
Northwest	48839	37	34	75.6	69.6
Western Cape	92204	61	46	66.2	49.9
South Africa	819876	838	753	102.2	91.8

**Green= MMR<70, Yellow =MMR <100 and Red=MMR>100*

Trends in number of Maternal Deaths in Saving Mothers Reports 1998 to 2025



Trends in MMR in South Africa from Saving Mothers Reports 2005 to 2025



Trend in Maternal Deaths numbers per province 2024-2025

	2024	2025	2025-2024
Eastern Cape	148	97	-51
Free State	70	40	-30
Gauteng	249	239	-10
Kwa-Zulu Natal	174	156	-18
Limpopo	107	91	-16
Mpumalanga	85	96	14
Northwest	50	37	-13
Northern Cape	26	21	-5
Western Cape	65	61	-4
South Africa	974	838	-136

Trend in MMR per province 2024-2025 per 100 000 live births

	2024	2025	2025-2024
Eastern Cape	166	116	-50
Free State	171	104	-67
Gauteng	124	126	2
Kwa-Zulu Natal	95	89	-6
Limpopo	98	88	-10
Mpumalanga	119	143	24
Northwest	94	76	-13
Northern Cape	114	101	-5
Western Cape	69	66	-3
South Africa	112	102	-10

Primary Cause of Maternal Death 2025 with trend compared to 2024

Primary obstetric cause	No. of maternal deaths 2024	No of maternal deaths 2025	%	Rank 2025
INDIRECT				
Medical and surgical disorders	**178**	**159**	**19.0**	**1**
Non-pregnancy-related infections	**164**	**120**	**14.3**	**4**
DIRECT				
Ectopic pregnancy	**43**	**32**	**3.8**	**8**
Miscarriage	**52**	**40**	**4.8**	**7**
Pregnancy-related sepsis	**47**	**50**	**6.0**	**5**
Obstetric haemorrhage	**143**	**141**	**16.8**	**2**
Hypertension	**191**	**138**	**16.5**	**3**
Anaesthetic complications	**24**	**22**	**2.6**	**9**
Adverse drug reactions	**8**	**8**	**1.0**	**11**
Embolism	**55**	**45**	**5.4**	**6**
Acute collapse – cause unknown	**15**	**17**	**2.0**	**10**
Miscellaneous	**8**	**5**	**0.6**	**12**
Unknown	**46**	**61**	**7.3**	
Total maternal deaths	**974**	**838**		

KZN Maternal Deaths 2025: Numbers, Top 5 Causes, Trends

Causes	2025 Total 157	2024 Total 180	2023 Total 168	2022 Total 192	Trend cf 2024 13%↓
NPRI TB Other Pneum	34 (22%) 13 7	37 (21%) 15 11	31 (19%) 11	37 (19%) 11	8%↓
Haem Post VD Post CS	24 (15%) 6 14	26 (14%) 11 12	33 (20%) 10 21	35 (18%) 15 15	8%↓ 45%↓ 17%↑
M+S Cardiac Suicide	23 (15%) 5 6	32 (18%) 12 4	24 (14%) 5 3	31 (16%) 14 1	28%↓
↑BP	20 (13%)	27 (15%)	25 (15%)	19 (10%)	26%↓
Preg Rel Sepsis	9 (6%)	5	6	7	80%↑

Deaths per level of care and Primary Obstetric cause 2024

Primary obstetric problem	Outside	CHC	District hospital	Regional hospital	Tertiary / NC hospital	Private hospital	South Africa
Coincidental cause	2	1	5	9	5	0	22
Medical and surgical disorders	5	2	29	56	78	8	178
Non-pregnancy-related infections	2	1	35	58	61	7	164
Ectopic pregnancy	5	1	14	11	12	0	43
Miscarriage	2	0	9	24	16	1	52
Pregnancy-related sepsis	2	2	2	10	30	1	47
Obstetric haemorrhage	3	10	34	46	43	7	143
Hypertension	6	11	32	61	79	2	191
Anaesthetic complications	0	0	8	10	6	0	24
Adverse drug reactions	0	0	2	4	2	0	8
Embolism	3	3	11	18	16	4	55
Acute collapse - cause unknown	3	1	4	4	3	0	15
Miscellaneous	0	0	1	2	5	0	8
Unknown	35	3	2	2	2	1	46
All Causes	68	35	188	315	359	31	996

Caesarean deliveries, rates and Case Fatality Rate (CFR) per 100000 Caesarean deliveries 2024

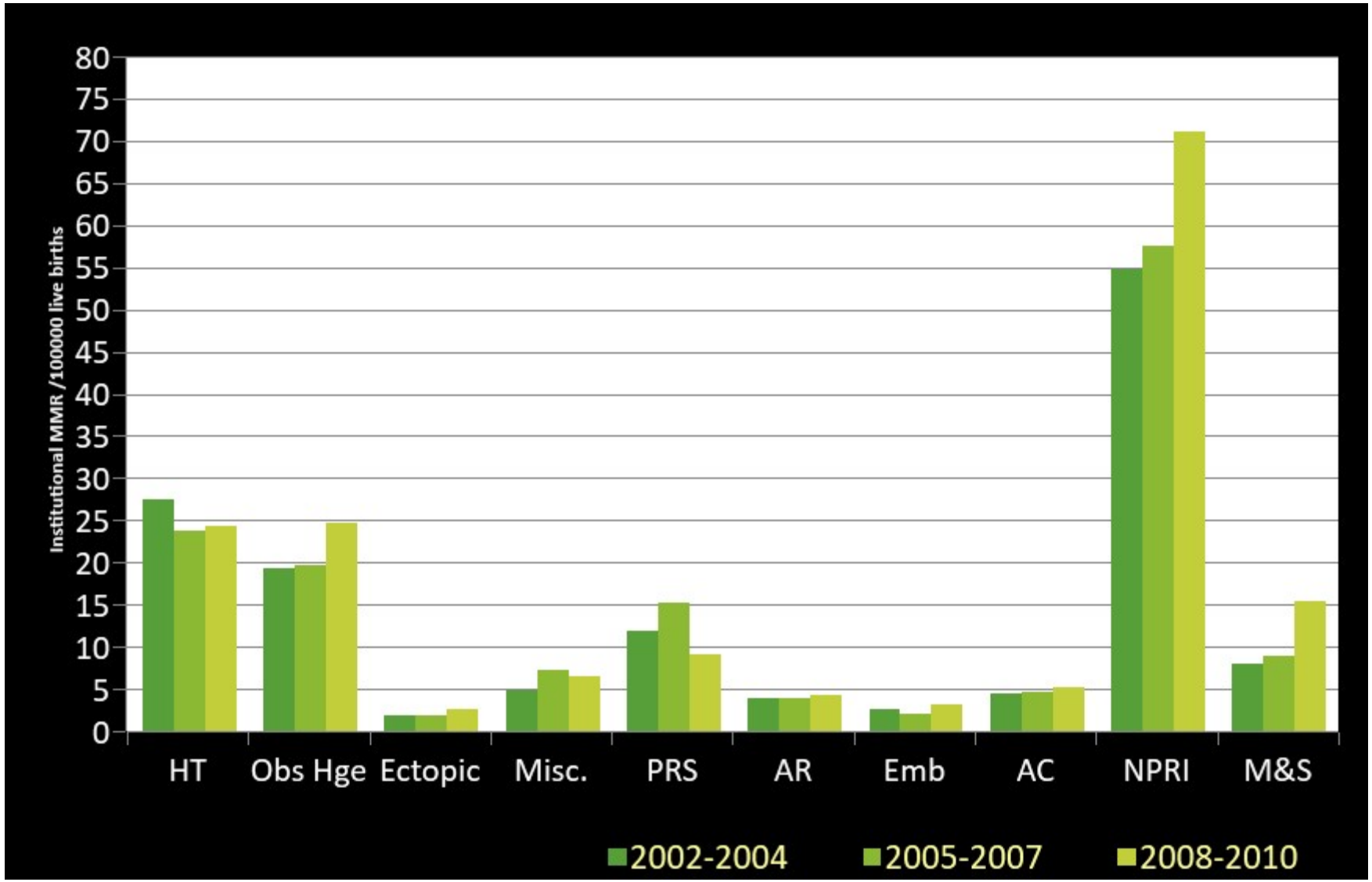
Province	Deliveries (2024)	CD	CD rate (%)	MD with CD	CFR*
Eastern Cape	83716	29142	34.8	56	192.2
Free State	37776	12897	34.1	27	209.4
Gauteng	192947	67177	34.8	107	159.3
KwaZulu-Natal	177485	71305	40.2	63	88.4
Limpopo	104757	28685	27.4	46	160.4
Mpumalanga	67928	17022	25.1	37	217.4
Northern Cape	20009	5249	26.2	10	190.5
North West	50308	14295	28.4	22	153.9
Western Cape	90249	30386	33.7	25	82.3
Total	825175	276158	33.5	393	142.3

HIV Status in Maternal Death Cases 2024

Primary obstetric problems	Positive	Negative	Declined	Unknown
Coincidental cause	9	5	0	8
Medical and surgical disorders	49	111	0	18
Non-pregnancy-related infections	123	34	0	7
Ectopic pregnancy	9	9	0	24
Miscarriage	16	15	0	21
Pregnancy-related sepsis	13	30	0	4
Obstetric haemorrhage	47	86	0	10
Hypertension	47	133	0	11
Anaesthetic complications	10	12	0	2
Adverse drug reactions	3	3	0	2
Embolism	17	36	0	2
Acute collapse - cause unknown	2	9	0	4
Miscellaneous	3	4	0	1
Unknown	13	21	0	12
Total:	361	508	0	126
% of total:	36.2	51.1	0	12.7

HIV status known in 87.2% of MD

Trends in underlying causes of maternal deaths South Africa 2002-2010



Maternal Death: underlying conditions: 2008-10

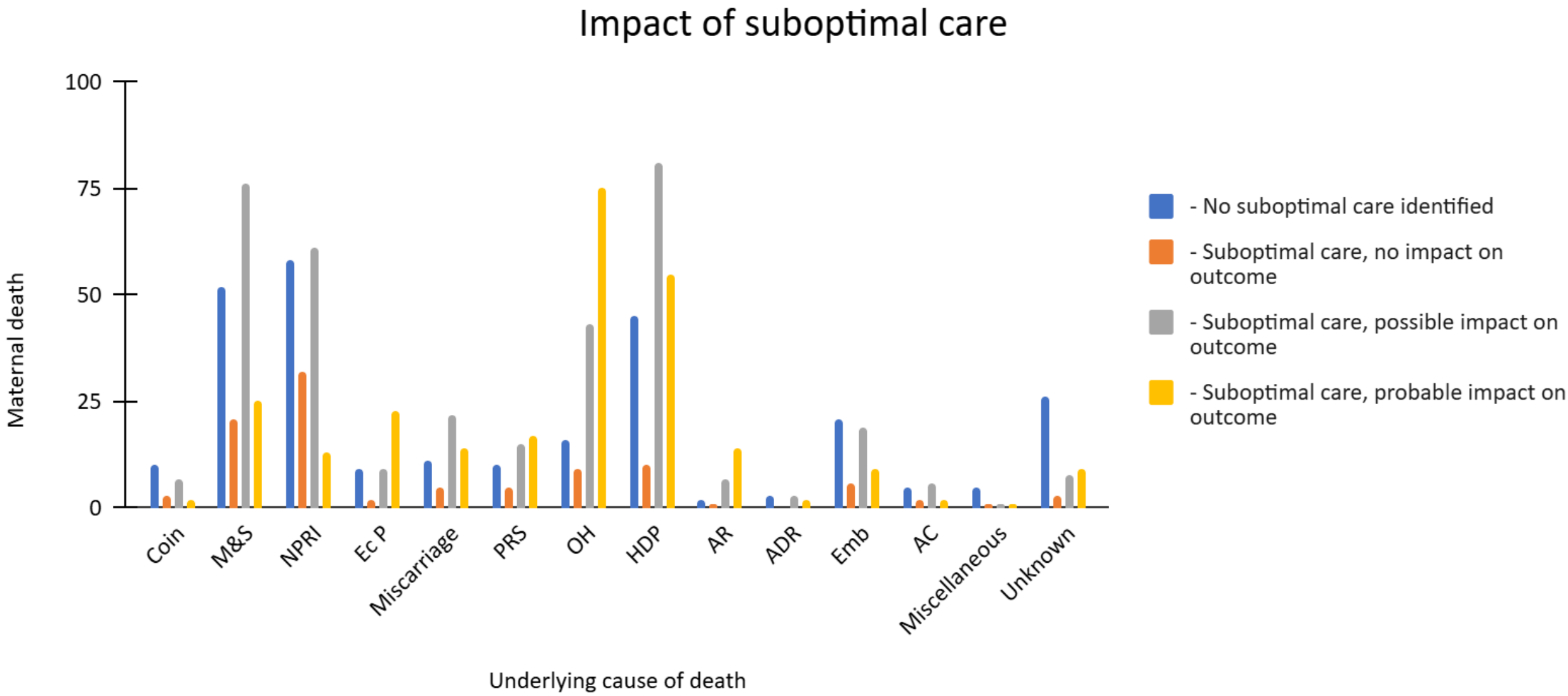
- HIV status
  - 80% maternal deaths tested for HIV
  - 70% of those tested were HIV positive

Categories of Suboptimal Care and Avoidability of Maternal Deaths 2025

	Total No	%
Total Deaths during Pregnancy, Childbirth and the Puerperium	860	100
No suboptimal care identified	241	28.0
Suboptimal care, no impact on outcome	98	11.4
Suboptimal care, possible impact on outcome*	272	31.6
Suboptimal care, probable impact on outcome*	249	29.0

**** 60.6% possibly or probably avoidable***

Suboptimal care and avoidability of death per cause of death 2024



Summary 1

- Live births per DHIS continue to decrease throughout SA perhaps suggesting effectiveness of contraceptive services, but births in private practice are undercounted
- Following 2 years of where there was no drop in MMR, 2025 has seen a drop from 112 to 102 per 100,000, despite the drop in live births
- All provinces had a reduction in maternal deaths in 2025 except Mpumalanga province which consequently now has the highest MMR of all Provinces
- The disparity between MMR in different Provinces indicates the need for targeted intervention in poorly performing Provinces
- There are four dominant causes/categories of maternal deaths which have contributed similar numbers of deaths over the past triennium: Hypertension, Medical and Surgical, Non-pregnancy related infections, Obstetric Haemorrhage.
- Pre-eclampsia leading cause of MD under HDP category, TB under NPRI , Cardiac under M& S and bleeding after CD under OH category

Summary 2

- Obstetric haemorrhage and Hypertension contribute the largest numbers of clearly avoidable deaths. It is therefore concerning that there was no significant decrease in OH deaths over the triennium, as this is the cause where the potential to reduce deaths within the health service is greatest

NB: The 2025 data suggest that the SDG target of 70 by 2030 is still feasible to achieve

However, to do so will require a concerted focus and effort by all levels of the health service to implement the recommendations of the Saving Mothers reports

RECOMMENDATIONS

- **Strengthening implementation and accountability for Saving Mothers recommendations**
  -Ensure full, system-wide implementation of all previous recommendations across all levels of care, supported by clear accountability mechanisms and root cause analyses where implementation gaps persist.

e.g. compliance with minimum standards:

-for safe caesarean section

-for safe and respectful care during labour

- **Improving maternal death surveillance and data quality**
  -Strengthen the accuracy and completeness of local review, notification and confidential enquiry processes as well as DHIS reporting, including comprehensive reporting of Live Births from the private sector, to support reliable monitoring and evidence-based decision-making.

RECOMMENDATIONS

- **Scaling up proven clinical interventions for leading causes of death**
  -Rapidly implement evidence-based interventions for obstetric haemorrhage, hypertensive disorders, and venous thromboembolism, amongst others, including the EMOTIVE bundle for early diagnosis of and first response to Post-partum haemorrhage, aspirin prophylaxis for prevention of pre-eclampsia, and routine venous thrombo-embolism risk assessment,.
- NB EMOTIVE (Early diagnosis through objective blood loss measurement, then midwife implemented first response: Massage of uterus, Oxytocin 10 units IV, Tranexamic acid 1g, IV Fluid bolus and Examination for obvious cause)

- **Strengthening health system capacity and access to specialised care**
  -Address critical staffing and skills gaps (includes maintaining functional DCSTs for all Districts), reinforce clinical governance and training (including ESMOE training: Essential Steps in The Management of Obstetric Emergencies), strengthen referral and emergency response systems including in transit care, and expand access to High-risk antenatal clinics, high care beds, Intensive Care, multidisciplinary care. Ensure access to contraceptive options (including emergency contraception and long-acting reversible contraception) as well as safe termination of pregnancy services

Key Recommendations: Are you Implementing?

When there is a maternal death at your facility, is there a meeting held to discuss it within a week?

Is top management of the facility represented at this meeting?
Does Quality Assurance manager attend the meeting?

Is the District team (DCST) informed of the death and invited to the meeting? Is the death subsequently presented at a district perinatal meeting?

Is an action plan drawn up for prevention of similar incidents? Is the action plan followed through and feedback given at the facility and district perinatal meetings?

Are all maternal deaths notified to the Provincial Office? Do you keep track of all the maternal deaths that have occurred in your facility and their causes?

Key Recommendations: Are you Implementing?

ESMOE: is there an ESMOE trainer (completed a train-the-trainer course) amongst the staff at your facility: midwife ESMOE trainer? Doctor ESMOE trainer?

Do these trainers conduct regular ESMOE training including fire drills? Are there records of these trainings? Does each maternity nurse and each maternity doctor keep a record of the drills/training that they have participated in?

Does the District team have a record of all the ESMOE trainers at the hospitals and CHCs in the district?
Is there oversight to ensure that training is taking place?

Key Recommendations: Are you Implementing?

Is the facility management aware of the minimum standards for safe and respectful care during labour (circular G56. 2023)? Applicable to all designated delivery sites?

Has the facility conducted an internal assessment of compliance with the minimum standards? If so, what was the score out of 12?

Is the district team aware of the compliance with the minimum standards at the labour wards in the District?

Key Recommendations: Are you Implementing?

Is the facility management aware of the minimum standards for safe caesarean section (circular G150/2018 and G85/ 2017)? Applicable to all hospitals conducting CS?

Has the facility conducted an internal assessment of compliance with the minimum standards? If so, what was the score out of 12?

Is the district team aware of the compliance with the minimum standards at the hospitals in the District?

Key Recommendations: Are you Implementing?

Does your labour ward have equipment to objectively measure blood loss after vaginal delivery?

Have all staff been trained on the EMOTIVE protocol?

Is there an EMOTIVE champion at the facility who ensures that the protocol is implemented?
A midwife champion? A doctor champion?

Key Recommendations: Are you Implementing?

Has your hospital implemented a protocol to objectively measure blood loss in real time during caesarean section, with agreed threshold for diagnosing excessive bleeding and how to respond to it (EMOTIVE + protocol)?

Have all staff been trained on the EMOTIVE + protocol?

Are there EMOTIVE + champions at the facility who ensure that the protocol is implemented?
A surgeon champion? An anaesthetist champion? A theatre nurse champion

Key Recommendations: Are you Implementing??

- Is there routine safe conception screening for women of reproductive age presenting to your facility?
- Can the facility insert contraceptive implant and IUCDs? Is there stock available?
- Does the facility provide emergency contraception? If so, is it accessible 24/7? Or just during office hours?
- Does the facility provide female sterilisation (tubal ligation) post NVD or interval? If not is there a formal referral agreement with another facility?
- Does the facility provide a TOP service (1st and 2nd trimester?) If not, is there a referral agreement with another facility?

Key Recommendations: Are you Implementing?

Do all doctors and midwives at the facility have the hospital level National Essential Medicines List (EML) Standard treatment guidelines (STGs) on their phone?

Do all maternity midwives and maternity doctors at the facility have an electronic copy of the national maternity care guidelines, and the national consolidated guidelines for the prevention and management of HIV ?

Does the facility have stock of the the new National maternity case record to be issued to all women starting antenatal care?

Is your facility supported by outreach clinicians for obstetric care? From district (DCST or mentor midwives) ? From the referral facility? Is this on-site support, remote support or both? Is the clinician easily accessible for asking advice?

Key Recommendations: Are you Implementing?

Does your facility have clearly defined and agreed referral routes for high-risk maternity patients?

Does your facility have clearly defined referral criteria for high-risk maternity patients? Is there common agreement about these criteria with the referral facility?

Is there a reliable and efficient communication method with the referral facility clinician for acute emergencies?

Is there a reliable and efficient communication method with the EMS service when emergency transfer is required, including an escalation protocol when there are excessive transfer delays for critical patients?

Case presentation

- 27 years G2 P1 Previous NVD x1 at term 2017
- Unemployed, history of iv heroin use
- Booked for antenatal care at 8 weeks
- Booking BP: 111/74, weight 52kg, Hb 11.2
- Known living with HIV on TLD, has been on ARVs for years, intermittent interruption
- Viral Load LDL, CD4 125
- Syphilis positive at booking, received 3 penicillin doses
- 5 ANC visits at PHC with normal vital signs

Case presentation

- At 24 weeks, presented to the clinic with nausea and vomiting
- Treated as an outpatient with oral rehydration
- At 26 weeks, vomiting resolved, but baby noted to have poor growth on SFH measurement
- At 30 weeks presented to District Hospital with vomiting, diarrhoea and dizziness
- P 114, BP 106/59, weight of 46.5kg and SFH of 21cm.
- Received steroids and admitted and given maxalon, Loperamide and IV fluids. And discharged

Case presentation

- 32 weeks, presented to PHC with 2-day history of generalised body weakness and loss of energy.
- HGT-2.3, BP- 91/58 RR- 20
- Given 20ml of Dextrose repeat GHT was 7.4
- Chest was clear
- CVS S1 S2 no murmur
- CNS was GCS 15/15
- U/S HC- 27 weeks, Positive fetal heart
- A: Hypoglycaemia and Hypotension in pregnancy
- P: Referred to District Hospital

Case presentation

- At hospital, BP 85/49 P-54
- A: Hypotension, ? IUGR , Anaemia

- P: Bloods
- Urine LAM
- GXP
- MRL fluid bolus
- Ceftriaxone 1g
- U/s

Hb	9.8
Hct	0.269
Platelets	294
WCC	6.35
Ca	1.48
Mg	0.42
Pho	0.40
Na	136
K	1.8
Urea	1.2
Creatinine	96
Ast	63
Alt	57

Case presentation

- Next day, developed SOB
- started on AB Nebs and 40% FMO2, O2 sats 99%
- Discussed with obstetric team at specialist referral centre:
- No Indication for transfer
- Advised: TFT. Anaemia work up, Start on Bactrim, CXR, Social worker consult
- and to rediscuss if any change in condition.

Case presentation

- Three days later:
- Assessment of lower respiratory tract infection.
- Hypokalaemia 1.8; Body weakness- Bed bound
- PTB- being worked up; O2 dependent
- Anaemia Hb 9,8
- ? IUGR
- Alert, ill Looking, well hydrated
- BP 121/73 P 51 Sats 99
- Chest: Mild Tachypnoea, GBAE, Clear lung bases
- Repeat K+- 1.6, Given 2 amps KCL

Case presentation

- **Two days later:**
- **Rediscussed with referral centre**
- **Advised to replace Potassium**
- **Blood gas**
- **Transfer**

Case presentation

- Referral centre 34 weeks
- O2 Sats 94% on room air, chest clear, CXR clear
- Severe Hypokalaemia/ Electrolyte abnormalities
- KCL 1.7 replaced, Ca 1.34, MgSo4 0.49
- Admitted with GE- Diarrhoea and vomiting
- CNS GCS 15/15, No Focal signs, generalised body weakness. Power of 4 in upper limbs and 3 on lower limbs.
- USS live fetus 1150g
- Managed in an isolation unit in maternity high care

Case presentation

- Internal Med consults
- Blood cultures
- Formal U/ S
- Replace electrolytes
- Urine LAM negative
- CLAT negative
- TB NAAT sputum negative

Case presentation

- Internal Med consults
- Blood cultures
- Formal U/ S
- Replace electrolytes
- Urine LAM negative
- CLAT negative
- TB NAAT sputum negative
- CT PA: no suggestion of pulmonary embolus

Case presentation

- Next 1 week: multi-disciplinary review and care
- Baby died in utero
- Developed acute kidney injury
- Patient remained unchanged

- Antibiotics for LRTI escalated to Tazocin
- Continue electrolyte replacement

Case presentation

- **Severe hypokalaemia, Hypocalcaemia Complicated by muscle weakness+ Bradycardia w no ECG changes**
- **Mg replaced, No ongoing losses, paraesthesia**
- **Dependent Oedema, pallor, Clubbing grade 1**
- **A: Metabolic alkalosis compensated with Hypokalaemia and hypomagnesemia**
- **? Chronic Ge, ? Gittleman/ Bartter Syndrome**
- **HAP , AKI- Multifactorial**
- **Plan: Electrolyte replacement, KCL replacement 4 Amps**

Case presentation

- **Patient had sudden hypoxic episode.**
- **Desaturating on 40% Oxygen**

- **Escalated to 100% Face Mask Oxygen**
- **2nd IV Line inserted**
- **Seen by Medicine**
- **Seen by Renal**

Case presentation

- Impression of Fanconi Syndrome
- Worsening Urine output
- Profound muscle weakness including now respiratory weakness. Poor cough sign(weakness up to neck)
- ? Rhadbomyositis induced by Hypokalaemia, increased CK > 5000 and renal impairment.
- Now decreased level of Consciousness, ? secondary to increased PaCO2,

- Requires ICU support and ventilation.
- After clinical assessment ICU decided not to offer a bed

Case presentation

- **Multi-disciplinary discussion and review of case**
- **Earlier referral warranted: persistent low CD4 despite effective ARVs**
- **Referral criteria for Advanced disease need to be clarified**

Attaining SDG 3: MMR target

- **HIV is one of the most common risk factors for pregnant women in South Africa**
- **TB is one of the most common serious complications of pregnancy**
- **As maternity health workers, we must remain vigilant regarding: HIV-related immunocompromise, opportunistic infections, viral non-suppression, vertical transmission**

Attaining SDG 3: MMR target

- **Maternity health workers must take responsibility for HIV/TB screening, investigation, diagnosis and management**
- **Pregnancy is often the gateway for young women living with HIV who are lost to FU, to re-engage with HIV care services**
- **We cannot rely on HIV specialist doctors and nurses to manage HIV/TB -related aspects of care during pregnancy and the puerperium**
- **Basic HIV/TB -related aspects of care must be integrated into maternal care. Clear referral criteria for complications**

Attaining SDG 3: MMR target

- **Training on advanced HIV and TB care must target maternity care workers, (not just HIV clinicians), including those working in O+G units at specialist level**
- **ESMOE does have an HIV module**
- **Requires leadership from O+G clinical managers**

Attaining SDG 3: MMR target

- As well as integrating HIV care into maternal care, SRH care must be integrated into HIV treatment clinics
- Safe conception: providing contraception when there is no plan to conceive
- Safe conception: where the woman/ couple plan to have a baby, ensure that HIV is suppressed, that infections are screened for and treated before unprotected sex
- Cervical screening

THANK YOU

Asibe HEALTH KZN