

South Africa's Maternal deaths from PPH – an ethical calamity

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Outline

- A reality check.....the last triennium and 2017
- WHY do mothers die from obstetric haemorrhage?
- Implications of a dead mother on the child
- What can we do about it?

Figure 1. Illustration of deaths during pregnancy, childbirth and the puerperium reported to the NCCEMD between 1998-2017

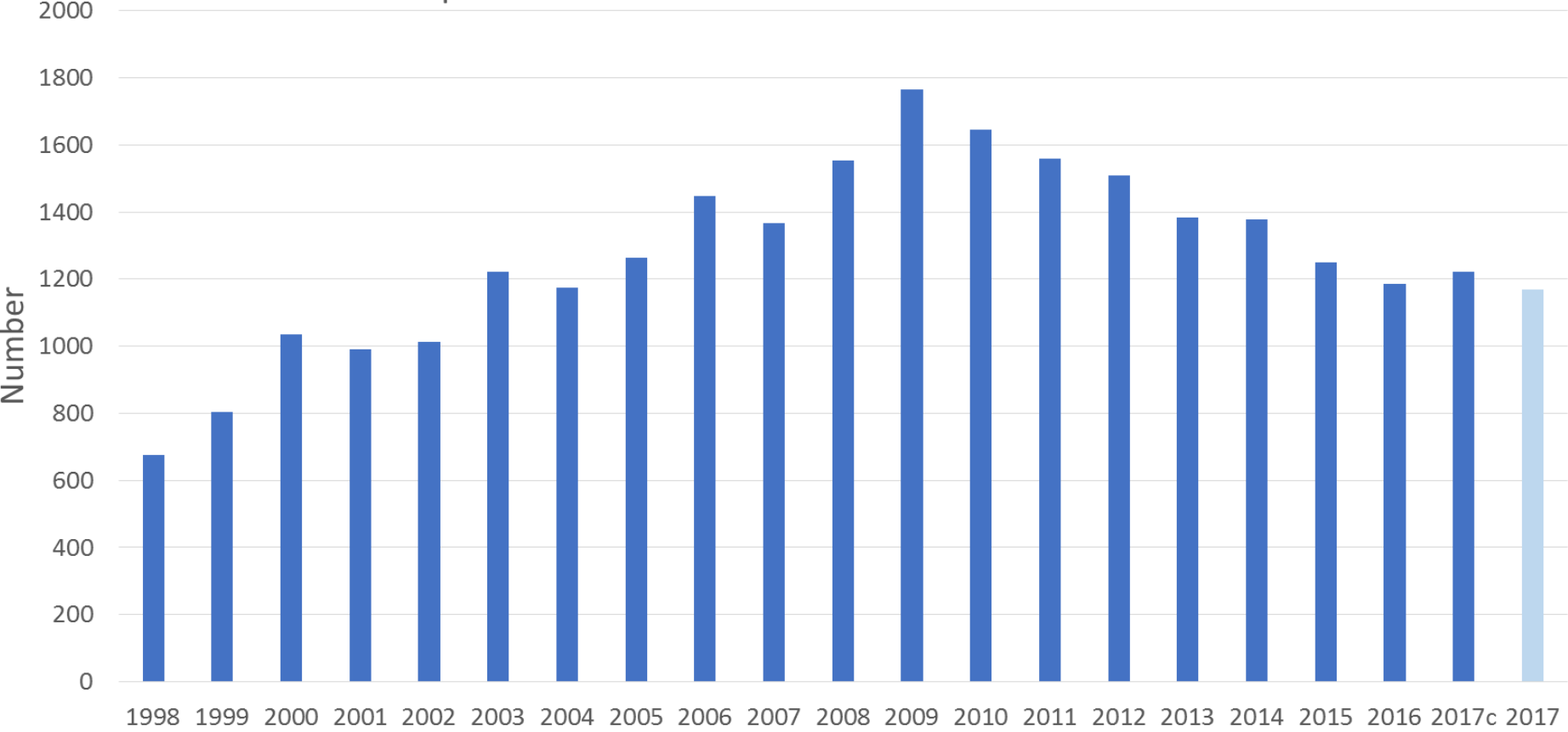


Figure 2. iMMR per year for South Africa 2005-2017

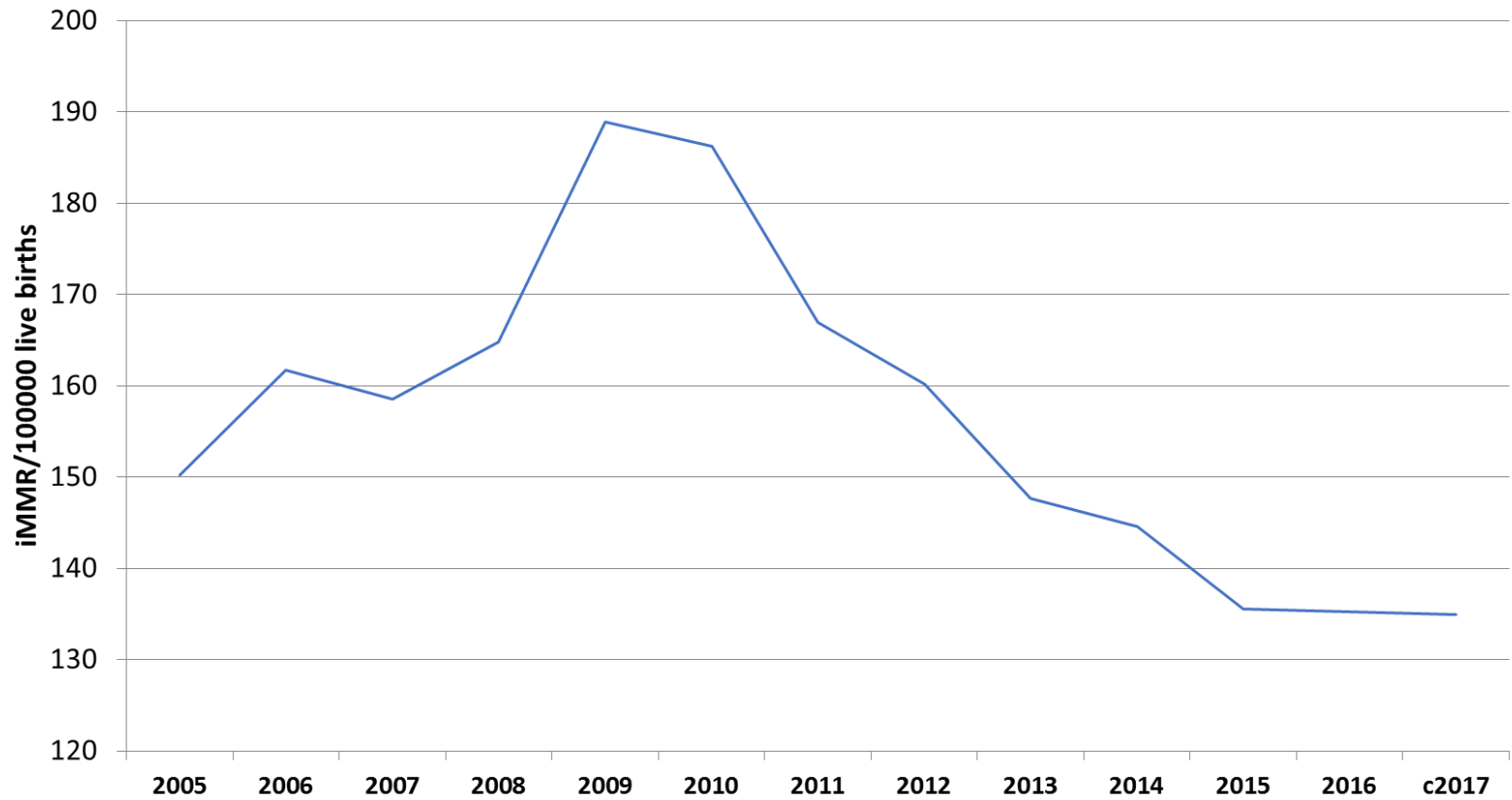


Figure 10. Proportion of potentially preventable deaths per disease category

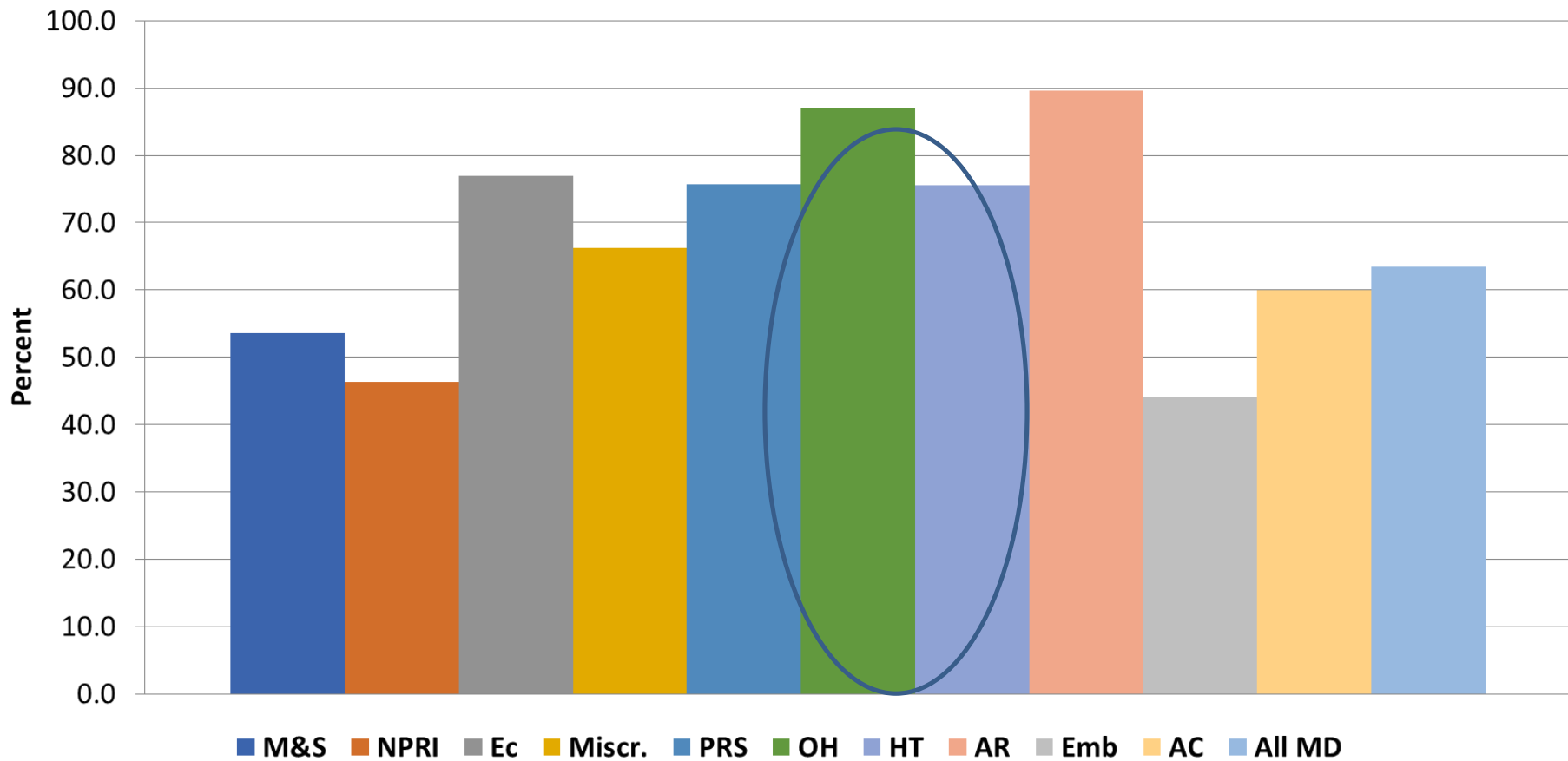
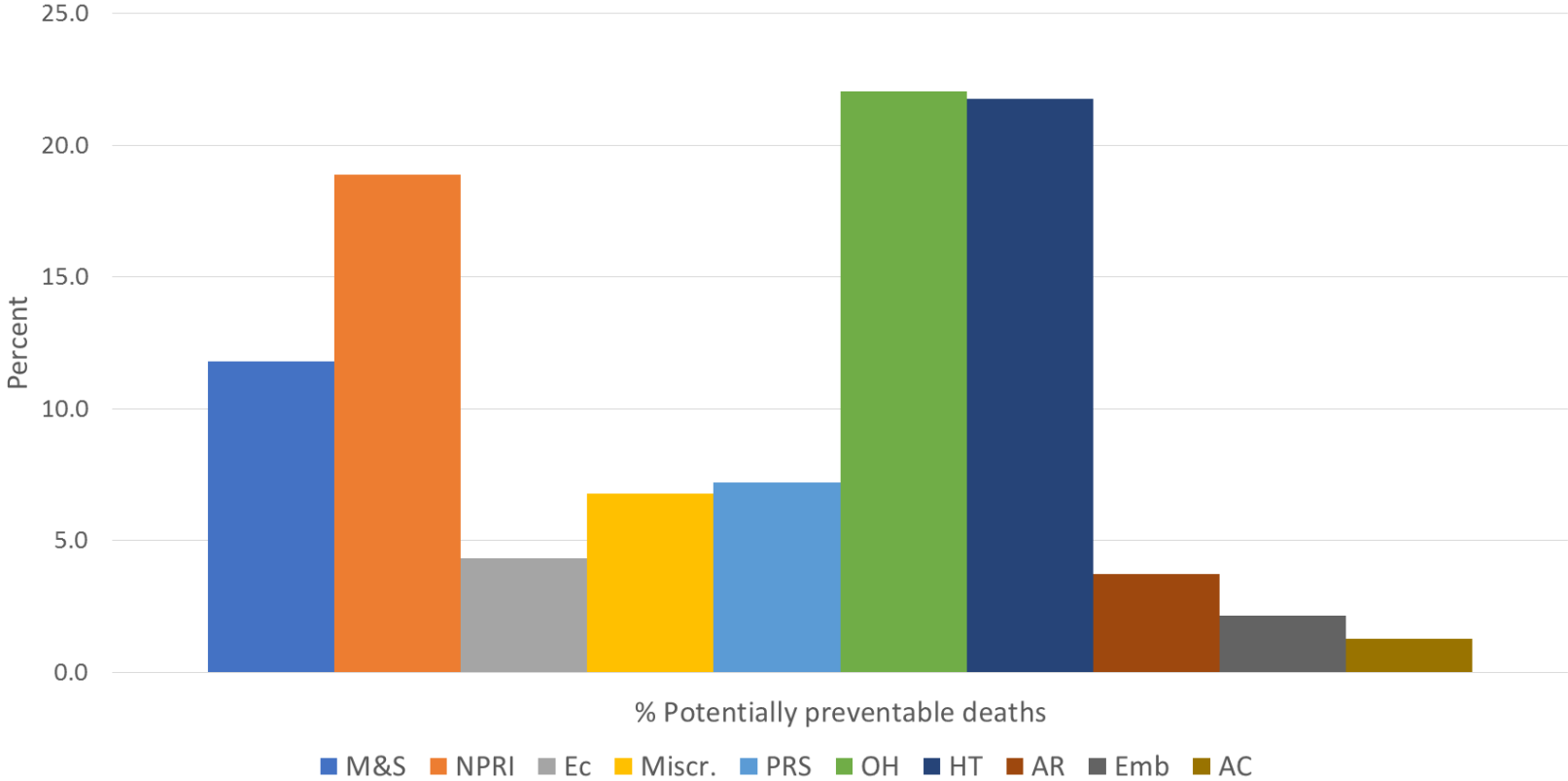
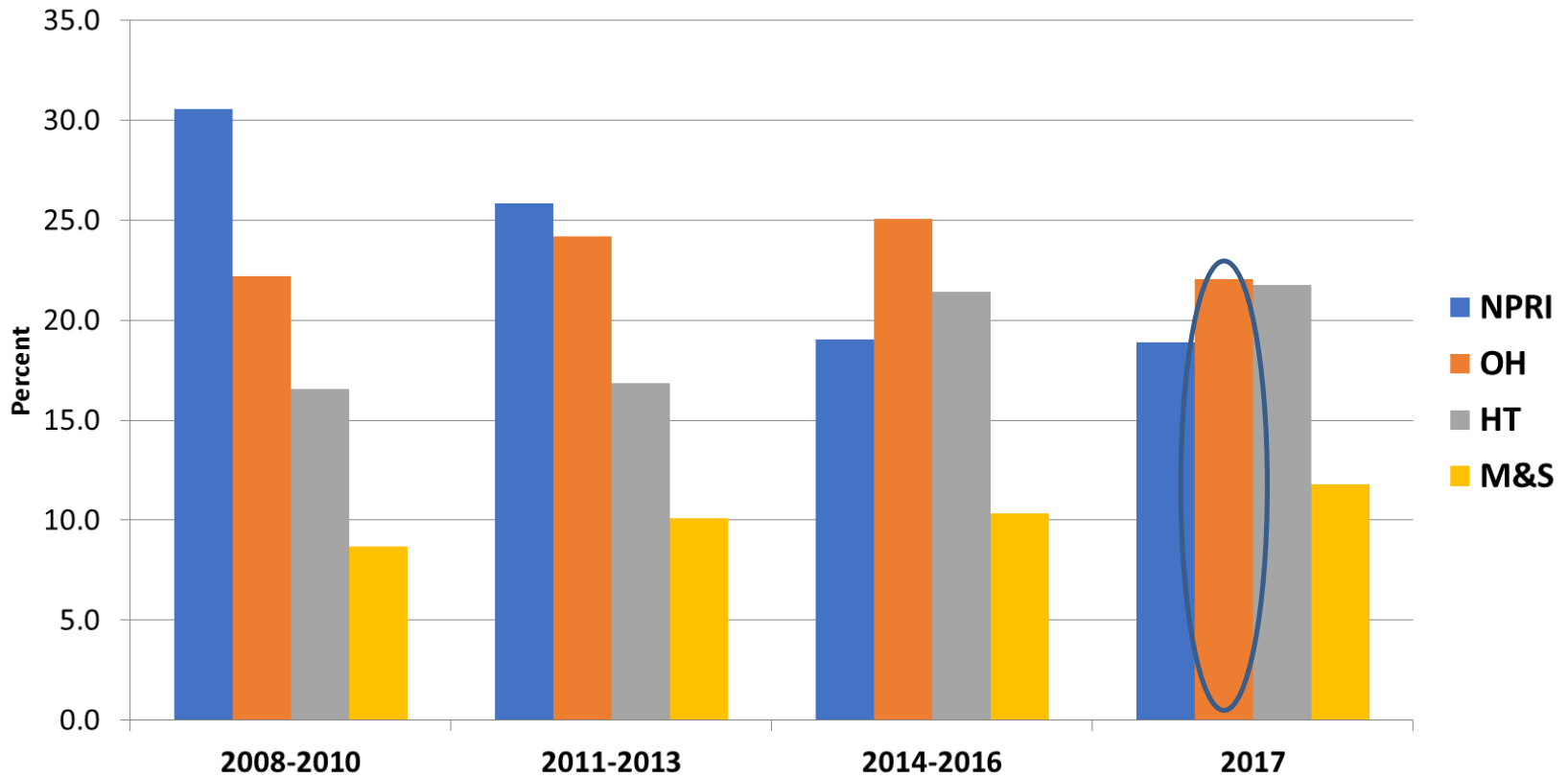


Figure 13. Contribution of underlying causes to potentially preventable deaths



Distribution of potential preventable deaths 2008-2017



Obstetric Haemorrhage 2017

- 176 deaths
 - 76 vaginal delivery (increased)
 - 100 Caesarean delivery (CD); mostly post CD (increased)
- APH and ruptured uterus decreased

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Vaginal delivery

Why do mothers die?

- Bad post delivery nursing care, especially at DH level
- Bad post delivery doctor care.....no requisite skills
- Low antenatal Hb....less physiological reserve
- Unavailability of blood products (no on site blood bank or emergency blood; poor transport)

Comparisons of Case Fatality Rate of Bleeding During or After CD per province: 2014-16 and 2017

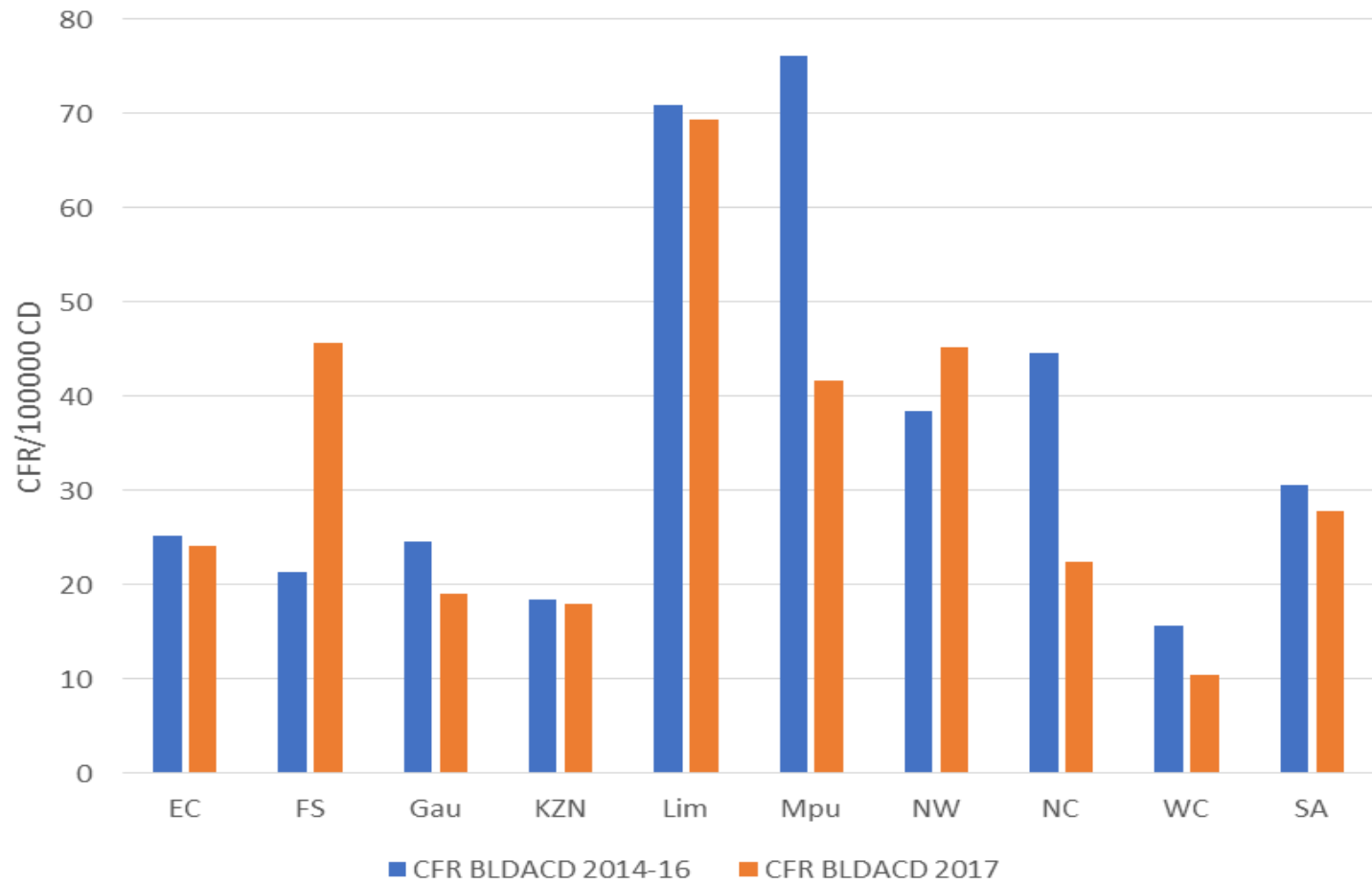
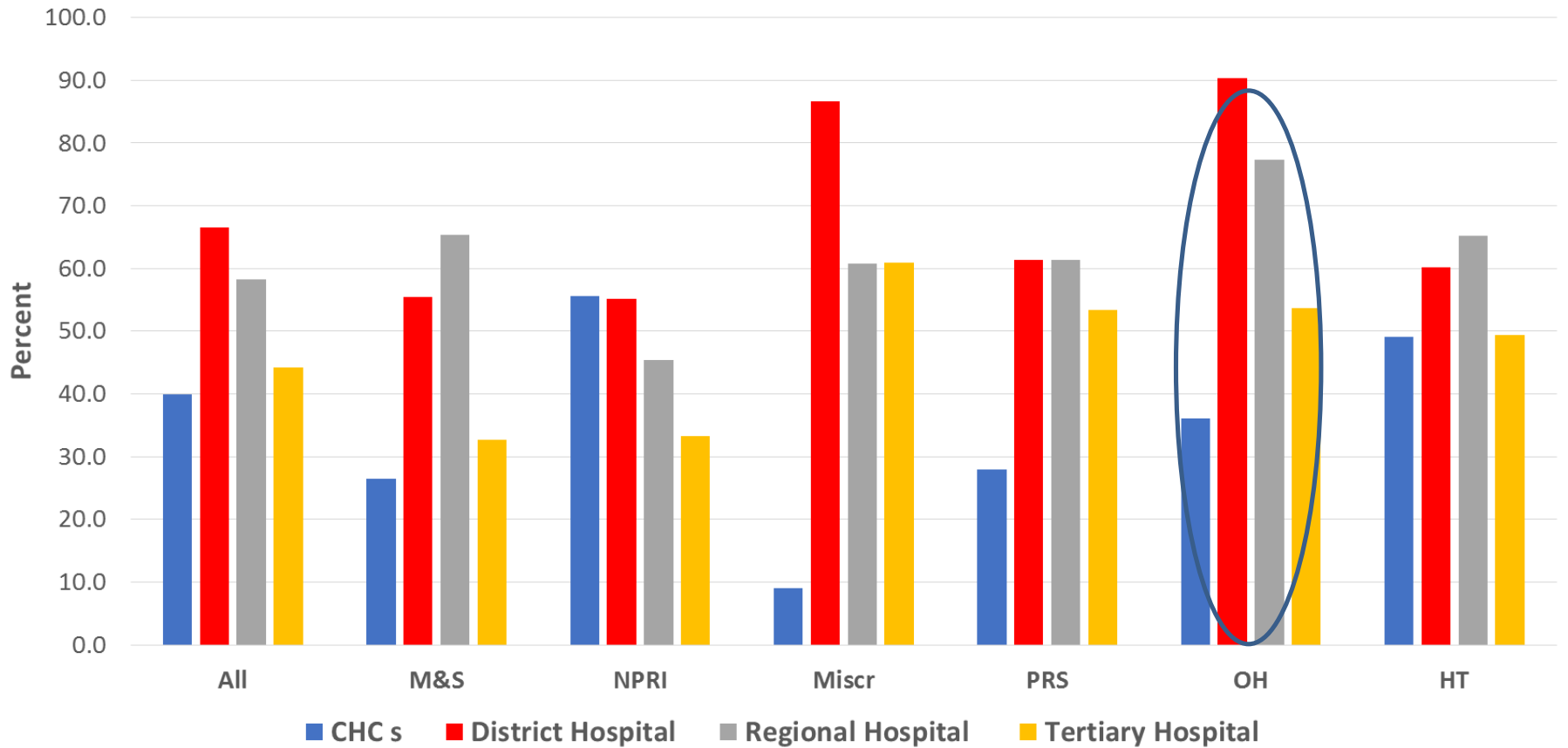


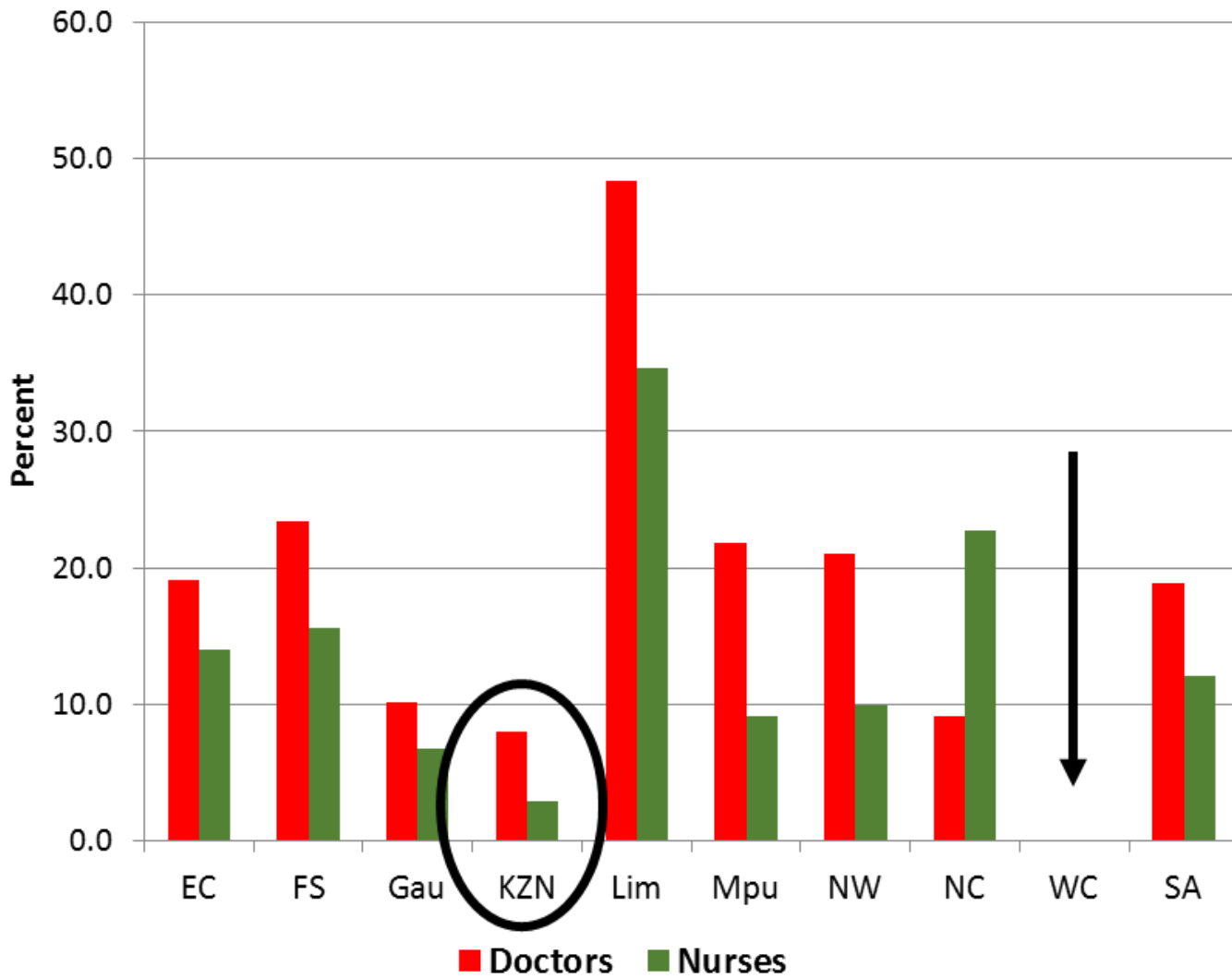
Figure 14. Proportion of health care professionals avoidable factors per level of care for common conditions



Proportion of deaths associated with lack of training and skills → preventable and our biggest shame

	All	CHC	DH	RH	PTH	NC	Pvt
Doctors	18,46	9,68	31,88	14,56	18,41	12,06	8,57
Nurses	11,84	12,90	18,48	9,62	9,62	11,35	2,86

Lack of appropriately trained staff per province



Lack of appropriately trained staff (Doctors and Nurses)

- Absolute lack of staff
 - Too few staff to cover services
- Lack of skilled doctors or nurses
 - Inability to give an anaesthetic and do caesarean section
 - Lack of specialist in regional hospital to do a hysterectomy
- Lack of personnel on-site
 - Skilled staff employed but not present when needed (e.g. PPH)
 - Poor clinical governance

The Wits Hospital study

- 7 hospitals in Johannesburg, 2013-2014
- 123251 deliveries; 17 maternal deaths due to bleeding during or after CD → 3.2 deaths per 10000
- Identified risk factors:
 - Previous CD
 - Preoperative anaemia
 - Placental abruption

Maswime, Buchmann. Causes and avoidable factors in maternal death due to caesarean-related haemorrhage in SA; 2015

The Wits Hospital study

- Main causes:
 - Uterine atony
 - Surgical trauma
- 5 deaths occurred before the cause was found
- Avoidable factors:
 - Delays in recognition → “knowledge and skills” of HCWs
 - Poor management of shock → “knowledge and skills” of HCWs

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A mother dies.....devastating

- IF child is normal.....may be orphaned? Often raised by granny
- If mother dies during delivery....child is 7 times more likely to die in the first month of life (The Gambia)
- Up until the age of two: increased risk of the infant dying (SA study of all causes of maternal deaths; Agincourt study)

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Anaemia in pregnancy- Maternity Care Guidelines SA 2015

- Give all women with Hb \geq 10g/dL ferrous sulphate 200 mg oral daily and folic acid 5 mg oral daily for the duration of the pregnancy (combined iron and folic acid preparations do not usually contain an adequate folic acid dose, so folic acid should be given separately).
- Continue with iron and folic acid supplementation during lactation. Give advice on a balanced diet to prevent nutritional deficiency.

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

- Steps to be taken to improve compliance with and absorption of oral iron tablets:
 - Encourage honesty about compliance with medication.
 - Discourage consumption of soil, charcoal etc.
 - Discourage excessive consumption of tea or coffee. Do not take more than 2 to 3 cups of coffee or tea.
 - Use rooibos tea, decaffeinated tea and coffee, water or fruit juice.
 - Advise taking iron tablets during meals if side effects are affecting compliance.
 - Avoid taking the iron tablets at the same time as calcium tablets.

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

Management of Anaemia:

Referral criteria:

Refer from a primary health clinic/ community health centre as follows:

Hb <6.0 g/dL → Urgent transfer to hospital the same day.

Hb 6.0-7.9 g/dL → Urgent transfer to a hospital if symptomatic (dizziness, tachycardia, shortness of breath at rest).

If not symptomatic, refer to the next high-risk clinic within one week.

Hb 8.0 to 9.9 g/dL Transfer to a high-risk clinic if no improvement after one month of treatment.

Hb <10 g/dL at 36 weeks gestation or more → Transfer to hospital for further antenatal care and delivery.

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

Management of mild anaemia (haemoglobin 8-9.9 g/dL)

- Increase ferrous sulphate 200 mg to orally 3 times daily and continue with folic acid 5 mg orally daily.
- Follow up all women <36 weeks pregnant with mild anaemia with a repeat Hb after 4 weeks.
- If there is no response to oral iron/ folate treatment or if ≥ 36 weeks, refer to the district hospital for further investigations.
- **If no response to oral iron treatment or if ≥ 36 weeks, and if iron deficiency confirmed (minimum investigation: full blood count); consider intravenous iron therapy (in hospitals only). Intravenous iron will raise the Hb faster than oral iron.**
- Avoid blood transfusion if there are no other complications.

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

Management of moderate to severe anaemia (Hb \leq 7.9 g/dL)

- Investigate the anaemia at the hospital/high risk clinic and look for underlying causes:
- Take blood for a full blood count (FBC): the mean cell volume (MCV) indicates the probable cause of anaemia:
- Send urine away for microscopy and culture, and a stool sample for occult blood and parasites.
- Do a malaria smear, where relevant.
- Start treatment for anaemia with ferrous sulphate 200 mg oral 3 times daily, and continue with folic acid 5 mg oral daily.
- If the Hb is $<$ 6.0 g/dL or if the patient is symptomatic (dizziness, tachycardia, shortness of breath at rest), then she must be admitted to hospital.
- Avoid overloading with intravenous fluids.
- Transfuse only if symptomatic.
- Give one unit at a time over 4-6 hours.
- Review need for further transfusion after each unit transfused, based on symptoms, rather than Hb level.
- Give furosemide 20 mg intravenously after each unit transfused.

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

If there is a failure to respond to oral iron therapy, compliance with the supplements should be checked and the results of iron studies, red cell folate and vitamin B12 levels should be checked and treat accordingly. If there is no response to oral iron treatment or if ≥ 36 weeks, and if iron deficiency confirmed, consider administering parenteral iron therapy (in hospitals only).

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

As a guideline, an anaemic patient should be transfused at least one unit of packed red cells if:

- Hb <8.0 g/dL and the woman is going for an emergency caesarean section.
- Hb <6.0 g/dL and the woman is in labour (vaginal delivery anticipated).

Anaemia in pregnancy- Maternity Care Guidelines SA 2015

Patients booked for elective caesarean section should have their anaemia corrected, preferably by means other than transfusion, before they undergo their caesarean section.

Main risk factors and avoidable factors in Maternal Mortality due to PPH in SA

- Previous CD (current rate is rising)
- Anaemia → input into Maternity Care Guidelines?
- Need more data
- Social justice issue of cost of updated treatment regimens → needs to be debated
- Poor/non-existent nursing and doctoring → ethically unacceptable: our collective problem

Proportion of deaths associated with lack of training and skills → preventable and our biggest shame

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Points to ponder

- Beneficence: making a risk-benefit assessment (based on facts) to decide on treatment recommendations for our mothers in SA.....in the context of OH
 - What is our recommendation?
- Respect for persons: social justice and the value of human life
 - In the context of OH in SA currently.....the lack of skilled staff, lack of patient blood management (in its broader sense) is a total violation of mothers' rights

Thank you!!

Questions??

- **Is PBM a societal health imperative or another pharma driven fraud?**
- **Are there significant concerns around the safety of iron (IV) in specific peri-surgical / partum patient populations esp. pregnant patients?**
- **What are the relative costs of current transfusion practices vs PBM?**
- **Will funders remunerate?**
- **Where will the benefits – health and financial – accrue?**
- **Who should we target to kick off implementation?**
- **In the days of fast track medicine and ERAS, why is PBM not a routine part of patient management pathways? Are there vested interests?**
- **Do we need a mind set change when thinking about anaemia?**
- **What are the practicalities of implementation of PBM?**
 - **How do we access the patients early enough?**
 - **Will the funders pay for anaemia investigation?**
 - **How and where do we give the haematinics?**
 - **Who makes the call on delaying surgery for anaemia management?**
 - **How long is a reasonable delay in patients with malignancies?**
- **How close to a surgical procedure – before or after – can we administer IV iron?**
- **Is it reasonable to treat significant post –operative anaemia with iron?**