

Maternal Deaths from Cardiomyopathies – lessons learnt

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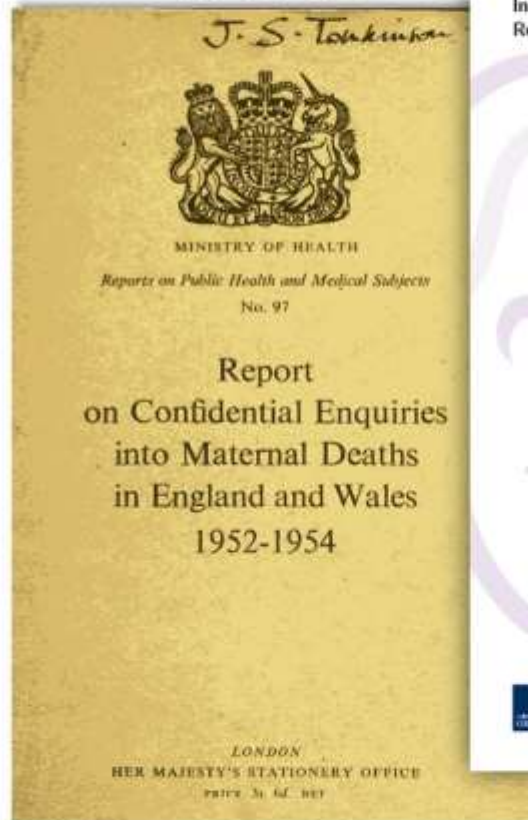
Charlotte Bronte



Mrs Beeton

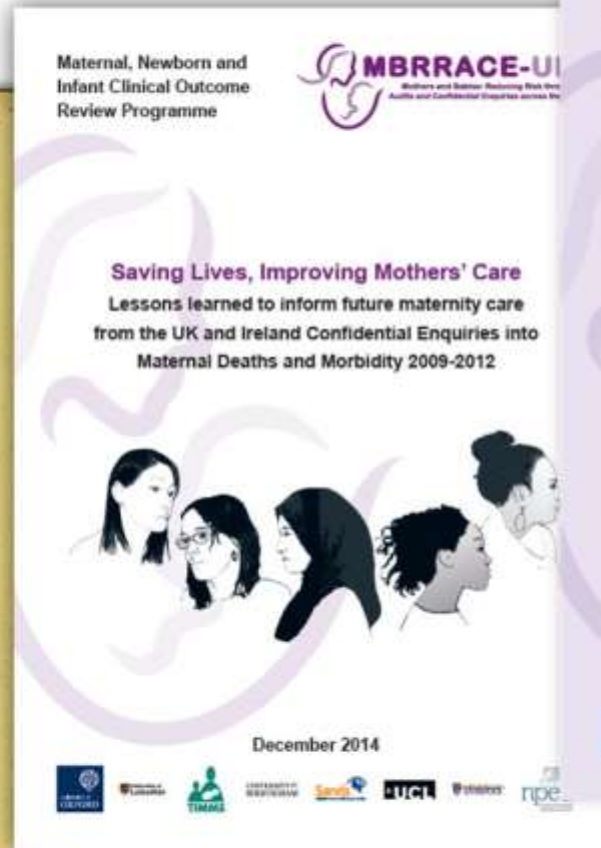
Maternal Mortality in the UK

1952-54



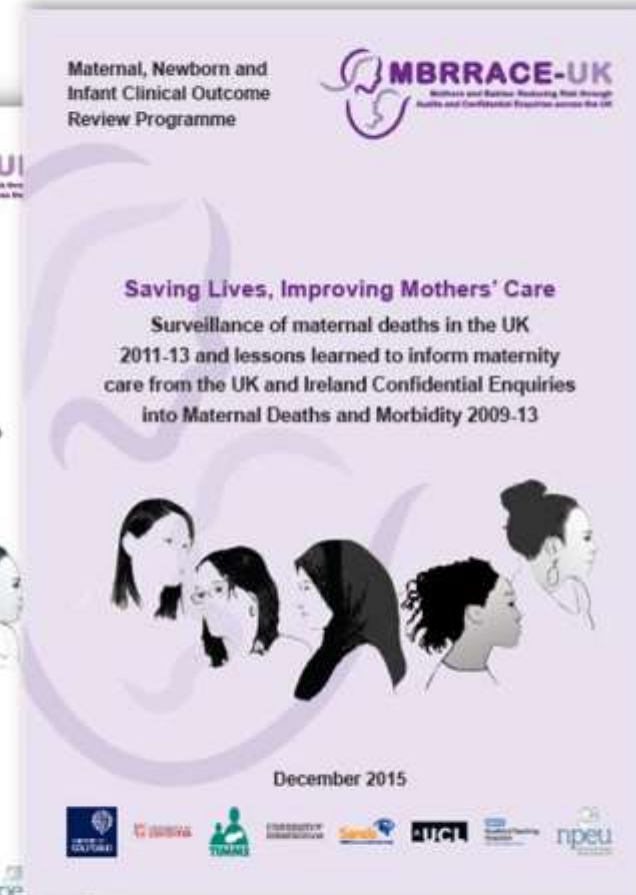
90 per 100,000
maternities

2010-12



10 per 100,000
maternities

2011-13

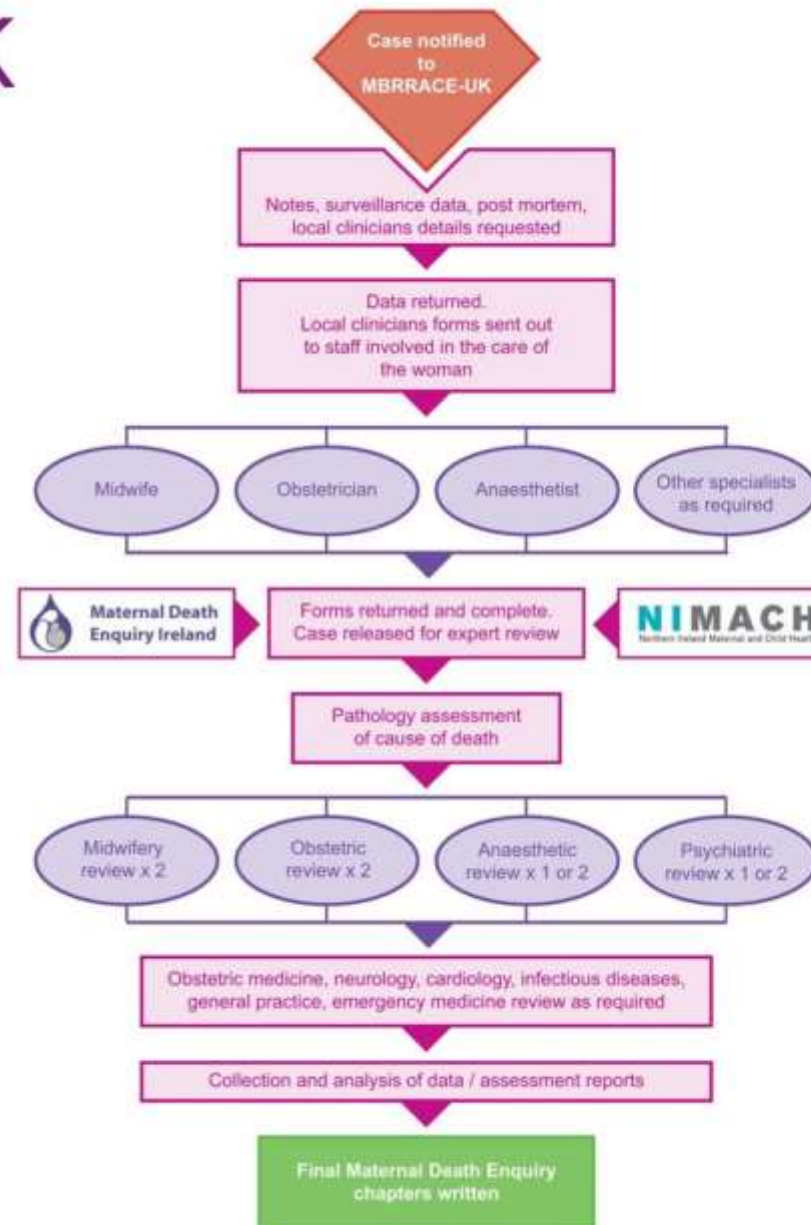


9 per 100,000
maternities



MBRRACE-UK

Methods



Confidential Enquiry Assessors

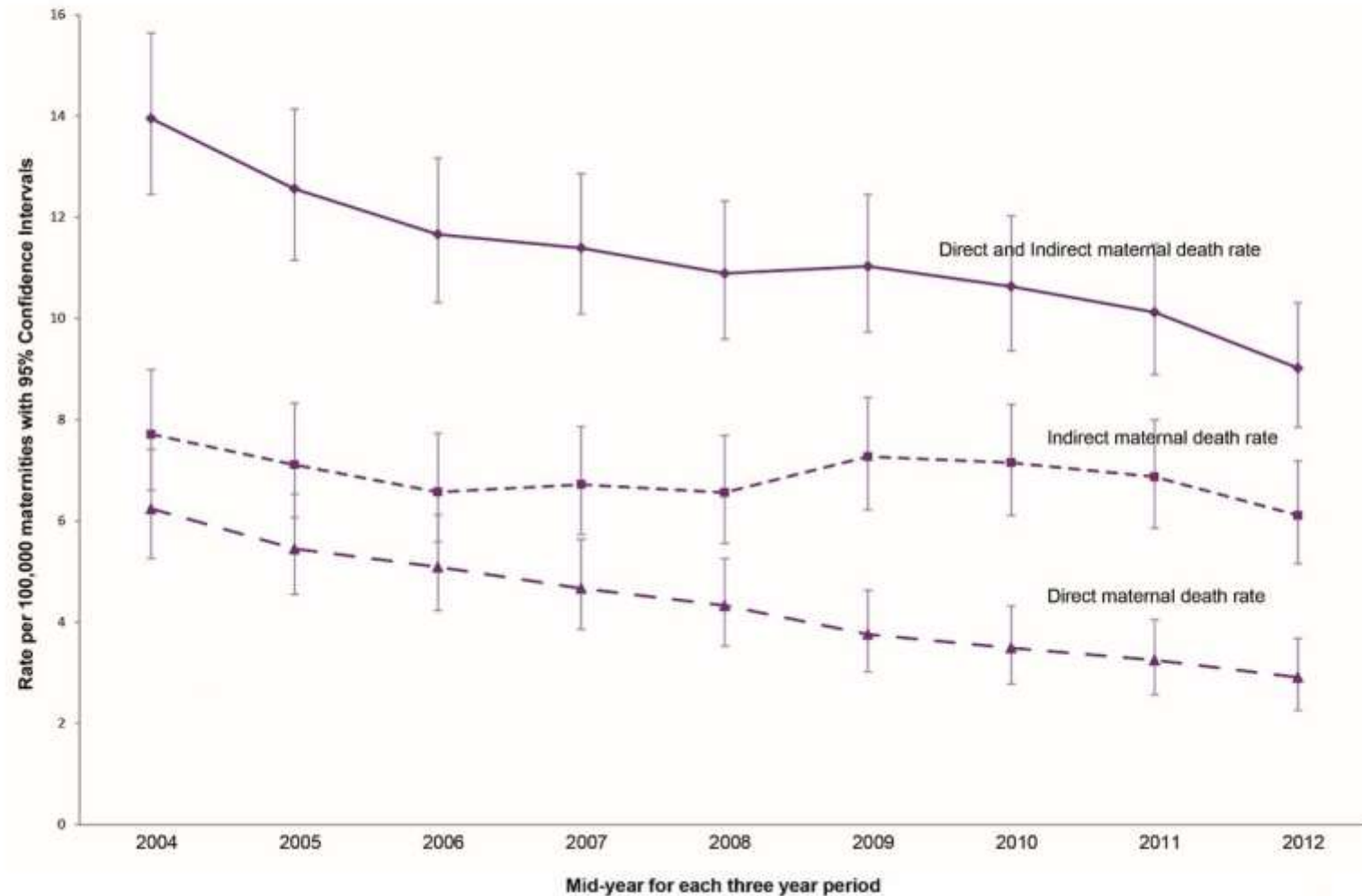
- 18 Obstetricians
- 16 Anaesthetists
- 3 Obstetric Physicians
- 4 Cardiologists
- 2 Neurologists
- 15 Midwives
- 8 GPs
- 7 Intensive care consultants
- 8 Pathologists
- 12 Psychiatrists
- 6 Infectious disease physicians
- 2 Emergency medicine consultants

Maternal Deaths - Definitions

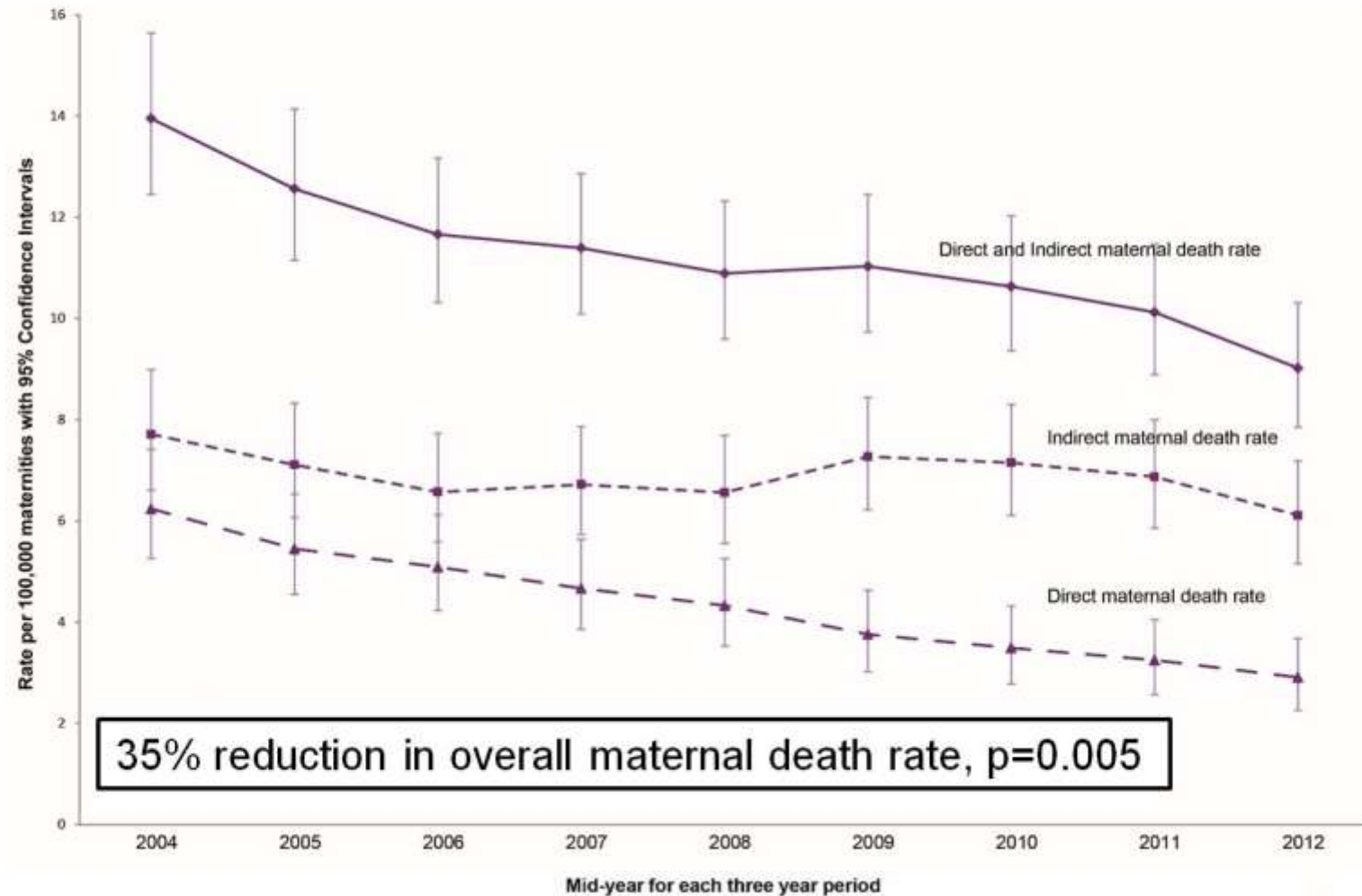
- **Direct:** As a consequence of a disorder specific to pregnancy
 - E.g. Haemorrhage, pre-eclampsia, genital tract sepsis
- **Indirect:** Deaths resulting from previous existing disease, or diseases that developed during pregnancy, and which were not due to direct obstetric causes but aggravated by pregnancy
 - E.g. Psychiatric causes (suicide and substance misuse), cardiac disease, other causes of sepsis
- **Coincidental:** Incidental/accidental deaths not due to pregnancy or aggravated by pregnancy
 - E.g. Road traffic accident
- **Late:** Deaths occurring more than 42 days but less than one year after the end of pregnancy



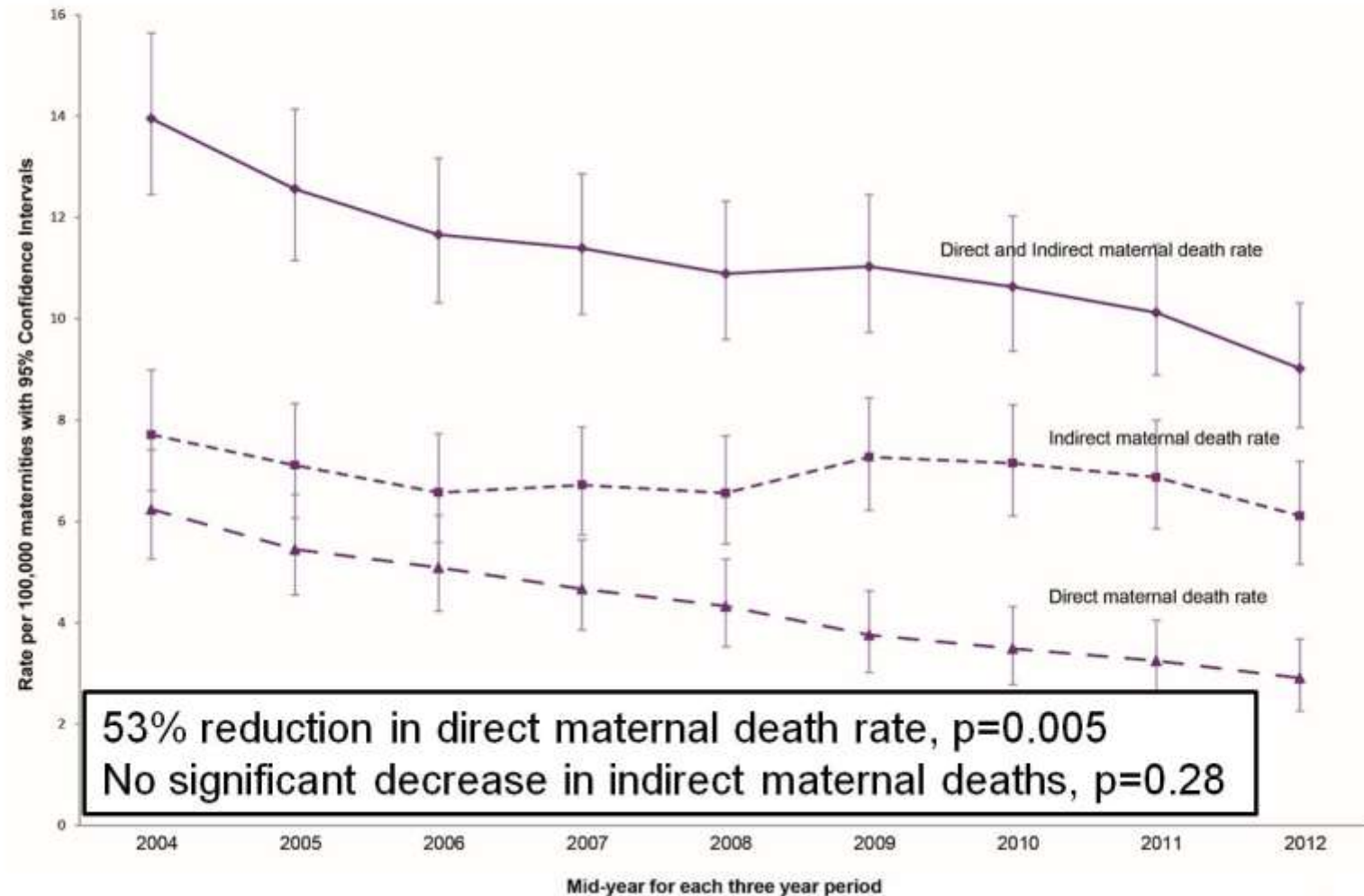
Maternal Mortality 2003-13



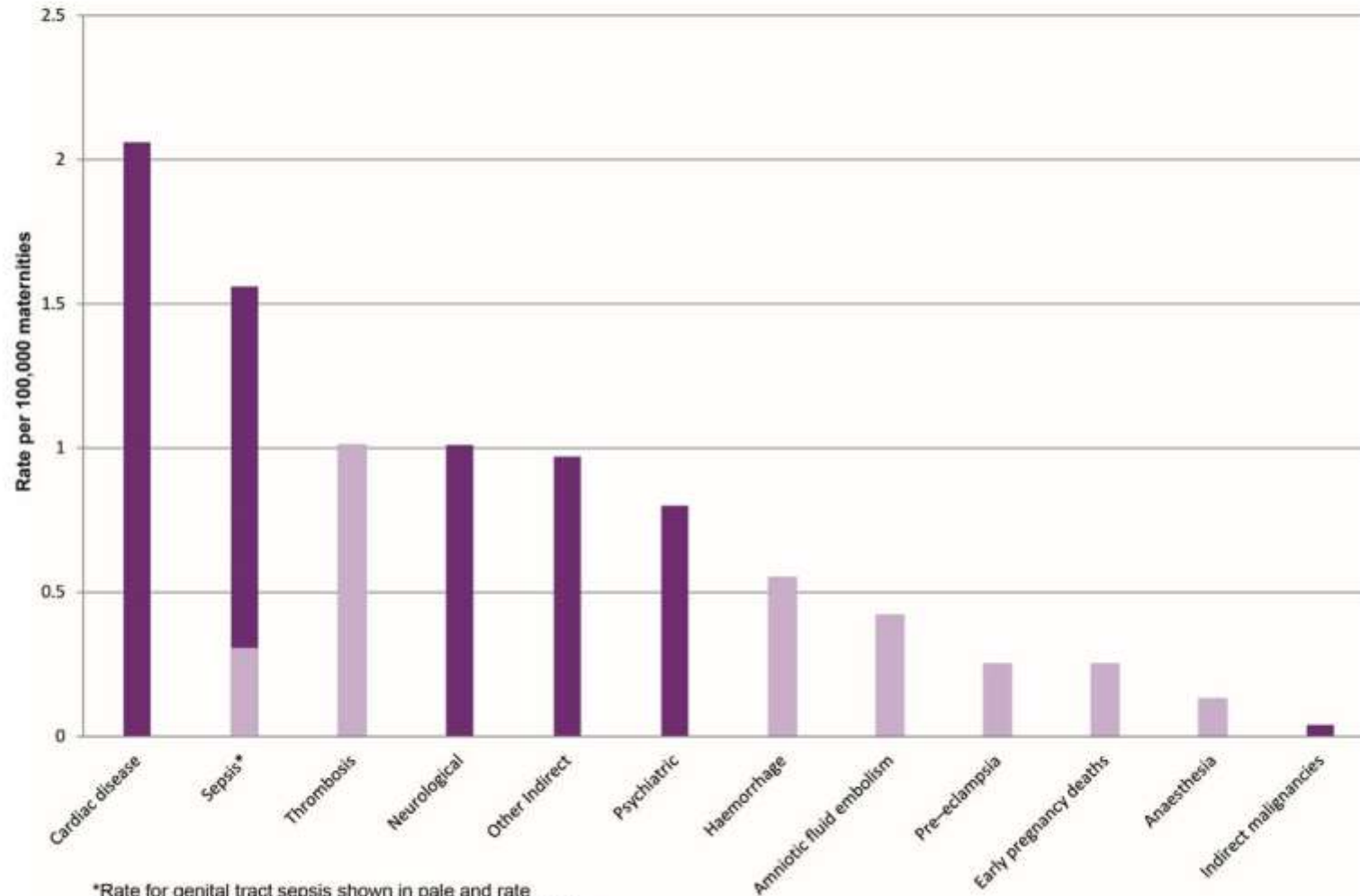
Maternal Mortality 2003-13



Maternal Mortality 2003-13



Causes of maternal death 2011-13



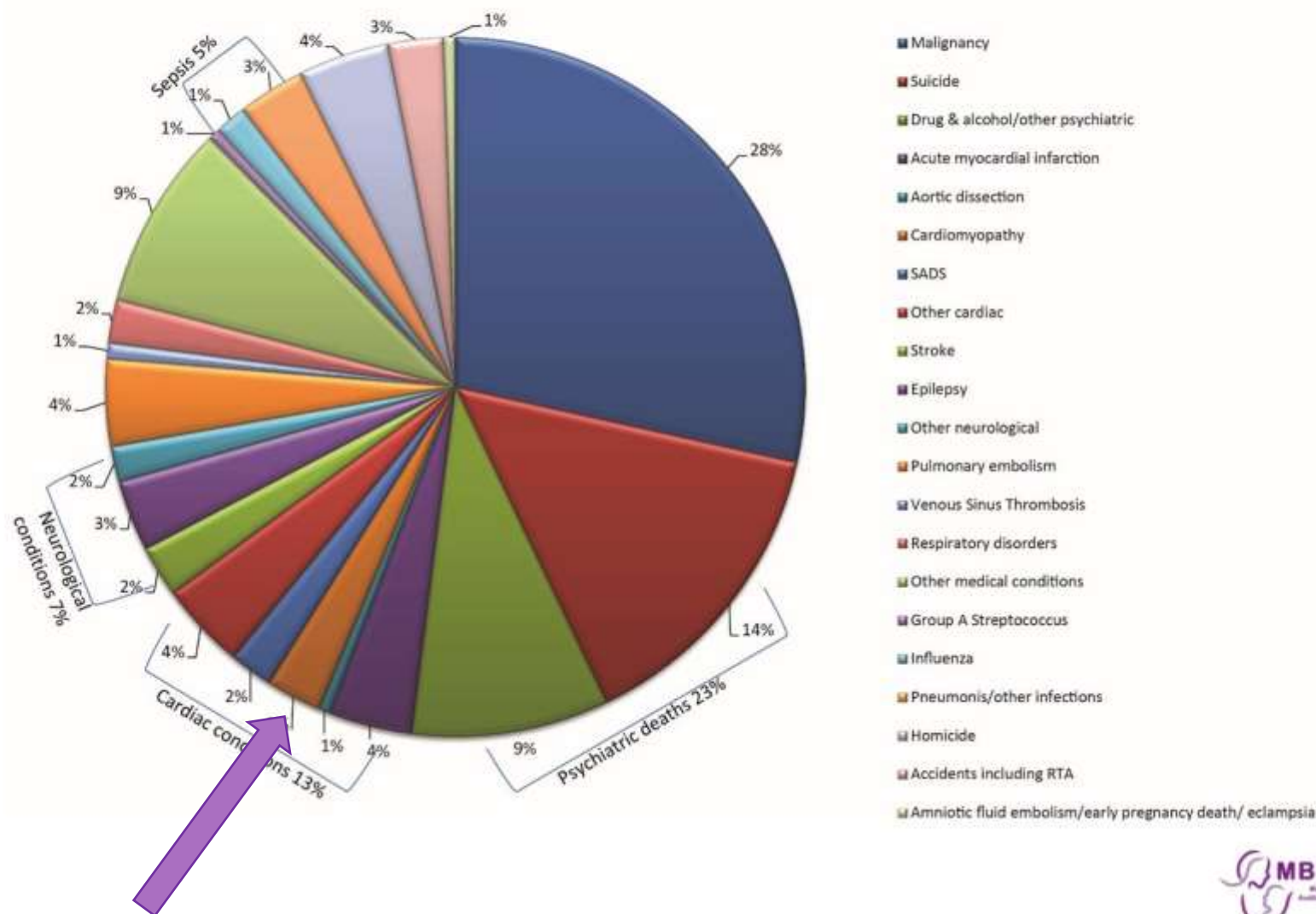
*Rate for genital tract sepsis shown in pale and rate for indirect sepsis (influenza, pneumonia, others) in dark bar

Dark bars show indirect causes, pale bars direct causes

Causes of maternal death from cardiac disease; United Kingdom: 2003-2005.

Type and cause of death	Indirect	Late*
<i>Acquired</i>		
Aortic dissection	9	0
Myocardial infarction	12	4
Ischaemic heart disease	4	0
Sudden Adult Death Syndrome (SADS)	3	9
Peripartum cardiomyopathy	0	12
Cardiomyopathy	1	4
Myocarditis or myocardial fibrosis	5	0
Mitral stenosis or valve disease	3	0
Infectious endocarditis	2	2
Right or left ventricular hypertrophy or hypertensive heart failure	2	1
<i>Congenital</i>		
Pulmonary hypertension	3	0
Congenital heart disease	3	2
Total	47	34

Late Maternal Deaths 2009-13



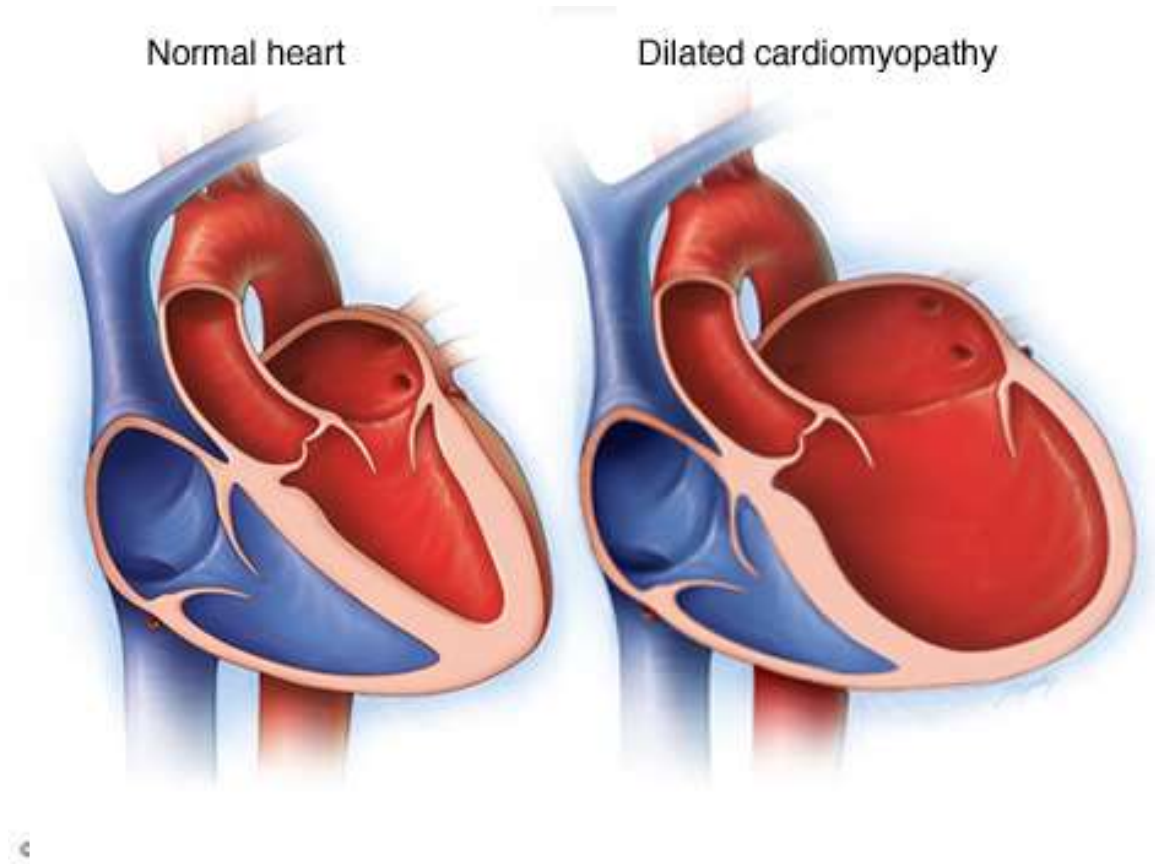
Cardiomyopathy

- Dilated - acquired or inherited
- Hypertrophic
- Peripartum – a pregnancy associated dilated cardiomyopathy



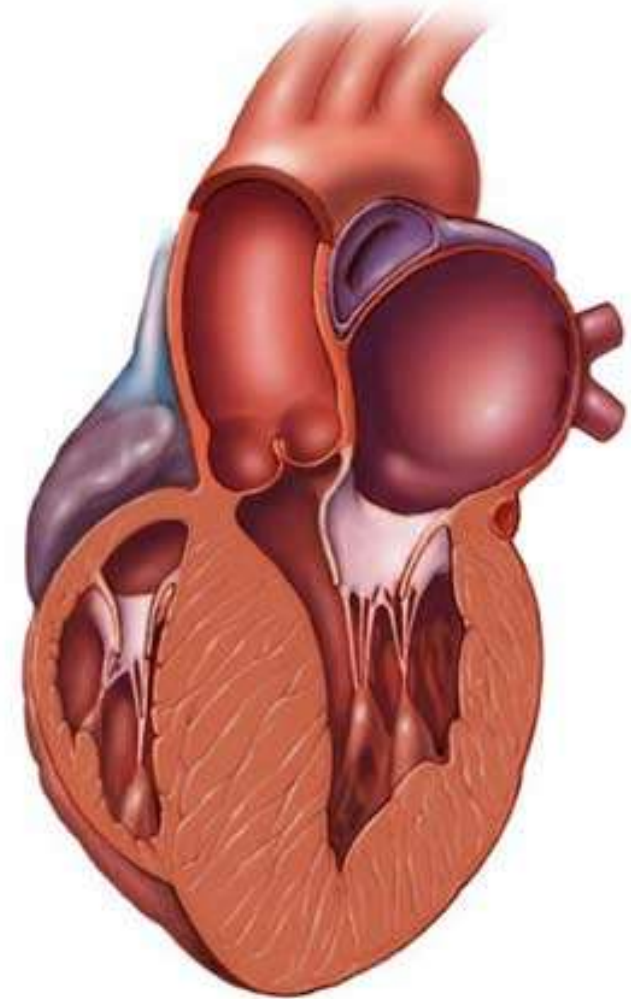
Dilated cardiomyopathy

- Underlying cause – acquired or inherited
- Anticoagulate



Hypertrophic cardiomyopathy

- HCM – autosomal dominant with anticipation
- Pregnancy usually well tolerated unless severe ventricular dysfunction
- Output compromised by tachycardia or hypotension – bleeding, pain, nifedipine, regional block



Peripartum cardiomyopathy

- Dilated cardiomyopathy
- Late gestation to five months post partum
- Consider diagnosis in older, obese, parous, hypertensive women with tachycardia and dyspnoea
- High recurrence risk in future pregnancies



So what's the problem?

- Breathlessness
- Tiredness
- Tachycardia
- Ankle swelling
- Not sleeping well



'A woman was admitted with breathlessness in late pregnancy. Despite clear documentation by the midwife that she was unable to lie down for abdominal palpation, the obstetric and medical SpR and the obstetric consultant missed the symptoms and signs of heart failure. Her 'wheezing' was taken to be asthma or Pulmonary Embolism.

She was left on the antenatal ward, short of breath and tachycardic. Even when she arrested, frothing at the mouth, the working diagnosis was still pulmonary embolism. The diagnosis of cardiomyopathy was not made until she was on ICU having had a cardiac arrest and a perimortem LSCS.'



- Women often don't complain
- Doctors pacify them
- Late diagnosis – or not diagnosed



Peripartum cardiomyopathy

- 1:3 recurrence risk
- Worse in women who have not regained normal ventricular function
- Causes 25% of maternal deaths from cardiac disease
- Diagnosis of exclusion



'A woman with a previous history of peripartum cardiomyopathy was not counselled by her cardiologists about the risk of recurrence. In her next pregnancy, despite numerous mentions of palpitations, she was not referred back to a cardiologist. When she was eventually referred as a matter of urgency, near term, the consultant cardiologist refused to see her. She then self-referred to an Emergency Department, where the cardiology registrar misinterpreted the echo as showing no significant dysfunction. Post mortem review showed 'at least moderate' dysfunction.'



Preconceptual counselling

- Preconceptual counselling is recommended



'A young overweight woman had chemotherapy in childhood which resulted in impaired cardiac function. She developed heart failure in late pregnancy and delivery was expedited. After a spell on ITU she was discharged. She subsequently deteriorated and had further cardiac treatment, dying during that admission.'

There was no evidence that she had received any pre-pregnancy counselling as to the risks of pregnancy given her cardiac condition or a recent assessment of her cardiac function prior to conception.'



Inherited cardiomyopathies

- HCM and Dilated
- Check other members of the family
- Case presentation later



Lessons not learned

- Need for prepregnancy counselling
- Lack of awareness
- Low threshold for further investigation
- Don't worry about X Rays
- Multidisciplinary working and referral to tertiary centres
- Peripartum cardiomyopathy require counselling before next pregnancy
- Anticoagulation and beta blockers in pregnancy
- ACE inhibitors and warfarin are OK when breastfeeding



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- Publication of next MBRRACE Maternal Mortality report
 - Focus on cardiac disease
 - Let's learn the lessons
- and make sure these women's lives aren't wasted.

