

Maternal Cardiology Networks

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BACKGROUND

- Cardiovascular disease (CVD) is present in ~4% of all pregnancies
- Congenital, inherited and acquired CVDs are a major cause of maternal and neonatal morbidity and mortality
- 23% of maternal deaths in the UK are due to CVD (Fig. 1)

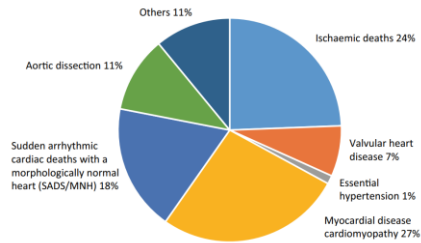


Figure 1 - Causes of maternal cardiovascular deaths, UK and Ireland 2015-17 (From UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2015-17)

- Pregnancy induces significant and unique physiological changes and so in treatment, optimal outcomes are achieved where care is guided by physicians with specific pregnancy training and expertise

MATERNAL MEDICINE NETWORKS

- Maternal medicine networks (MMN) were recently created across the UK
- MMNs are responsible for ensuring that all women with significant medical problems, within pre-defined geographical areas, have access to and receive expert and timely specialist care and advice before, during and after pregnancy (Fig 2)



Figure 2 - Maternal Medicine Networks in London

- The overarching principle is that care will always remain as local, as is compatible with the need for timely access to specialised care or facilities
- The goal is that all pregnant women with medical co-morbidities will have their condition categorised according to disease severity and referred to the appropriate maternity centre

MATERNAL RISK STRATIFICATION

- Conditions are to be classified as A, B or C, depending on complexity (Fig. 3)

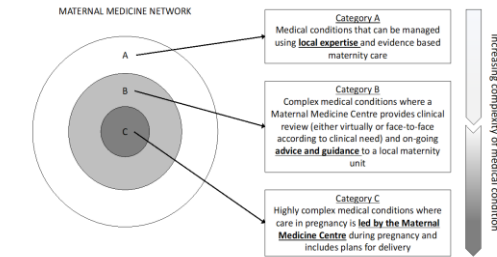


Figure 3 – MMN categorisation of medical conditions, depending on complexity / severity of disease

- In CVD, categorisation is aligned with the modified World Health Organisation (mWHO) classification of maternal cardiovascular risk (Fig. 4)

| Category A | Category B | Category C |
|--|--|--|
| Local expertise: | Clinical review, advice, and guidance from Maternal Cardiology Hub: | Care led by Maternal Cardiology Hub: |
| Mild pulmonary stenosis | Mild reduced left ventricular ejection fraction (>45%) | Left ventricular ejection fraction <45% |
| Small/repaired patent ductus arteriosus | Hypertrophic cardiomyopathy with no high-risk features | Severe aortic stenosis |
| Mitral valve prolapse | Repaired aortic coarctation | Systemic right ventricle |
| Repaired atrial septal defect | Mild mitral stenosis | Previous peripartum cardiomyopathy |
| Repaired ventricular septal defect | Mild-moderate aortic stenosis | Ventricular arrhythmia |
| Isolated atrial or ventricular ectopic beats | Atrioventricular septal defect | Mechanical valve |
| Postural tachycardia syndrome (PoTS) | Repaired tetralogy of Fallot | Moderate-severe mitral stenosis |
| Supraventricular arrhythmias | Turner syndrome without aortic dilatation | Aortic dilatation |
| | Treated ischaemic heart disease | Fontan circulation |
| | Myocarditis | Heart transplant |
| | Other valve lesions not listed in A or C | New ischaemic heart disease |
| | Pulmonary embolus without haemodynamic compromise | Pulmonary embolus with haemodynamic compromise |
| | | [Care of patients with pulmonary hypertension to be led by nationally commissioned centres] |

Figure 4 – Maternal Cardiac risk stratification

AIMS AND PROGRESS

- The aims of this project are to:
 - standardise clinical guidelines across the South East London MMN
 - design new patient pathways
 - agree key performance indicators (e.g. equity of access to pre-pregnancy and pregnancy MDT care; maternal and neonatal clinical outcomes)
 - establish academic collaborations, improving pregnant women's access to research studies and clinical trials
 - establish regular Maternal Cardiology hub (St Thomas' Hospital) MDTs
 - share expertise from cardiac hub, through virtual MDTs with rest of MMN
- Progress: Drafts of proposals for a), b) and c) are currently out for consultation. A Maternal Cardiology hub MDT meeting has been successfully established (e) and virtual, multi-site discussions of complex cases have been piloted (f)

CONCLUSIONS

- Maternal Cardiology networks were recently formally established
- New patient pathways and protocols are being agreed, and once rolled out will need to be audited and changes in outcomes quantified