Evidence base design for fetal medicine and surgery units
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Objective
With advances in prenatal diagnosis and fetal therapy, there are increasing service requirements for fetal surgery. This is provided in the UK at 16 established subspecialist Fetal Medicine Units (FMU). Evidence based design or architectural guidelines for these specialised units do not exist. This paper compares the different types of fetal therapy facilities in the UK with the objective to understand the functional needs of this developing service and how changes in the built environment can improve service delivery for patients and staff in the future.

Methods
A detailed two month study of the FMU at University College London Hospital (UCLH) was first conducted in 2014 through observations, drawings, mappings of staff, patient and service movement and interviews, to identify the ideal spatial and service needs of an FMU. These findings were then compared in an observational survey of the facility, services provided, staff provisions, equipment used and types of rooms in 14 FMUs across the UK. Each selected facility included a FMU which provides fetal therapy, labour delivery wards, obstetric theatres and neonatal medical and surgical services, therefore providing continuity in patient care for high risk pregnancies.

Results
Most FMUs (n=11, 78%) occupied adapted/refurbished spaces in an existing hospital; only 3 facilities were purpose built with limited future expansion strategies. Due to the adaption the main issues were difficulty in access and way finding, factors that had a direct impact on clinical service provision. In 50% of the facilities, a lack of space led to shared receptions, waiting areas and administration staff and dual room use was also common (n=12, 86%). A one to one ratio of scanning rooms to counselling rooms was present in only half of FMUs (n=8, 57%) and this affected the efficient running of clinical sessions. Scanning rooms varied in size, however a preferred layout and size could be established. Separate recovery areas, blood taking and assessment areas were also dependent on available spaces as opposed to requirement. Laser fetoscopy was provided in half of the units (n=7, 50%) of which one third (n=4, 29%) was performed in larger scanning rooms and a third (n=3, 21%) was performed in the obstetrics operating theatres. Although all units were consultant lead, the ratio of staff differed considerably. Staff training was limited by the number and size of scanning rooms.

Conclusion
Existing FMU healthcare facilities appear to have developed alongside the clinical service with little planning, and this factor directly impacts on clinical service provision and staff training. This joint presentation will show detailed data analysis and recommendations concluding with a series of indicative design proposals for future FMUs based on the evidence gathered.