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RESEARCH GROUP: PERINATAL AND OBSTETRIC MEDICAL DEVICES: SOLUTIONS FOR EQUITY (PROMISE)

MAPPING DEVICE USE (Work Package 1)

To identify and map the medical devices encountered throughout the pregnancy and neonatal period.

Using mixed methods, with health system and patient/service user lenses, we will identify the range of medical devices used in the pregnancy and neonatal period and health professional perspectives on their usage.

WP1a: Healthcare System Perspective

Test Methods:

Conduct rapid ethnography in maternity and neonatal care settings, including observations and interviews with n=30 clinicians (including obstetricians, hospital and community midwives, obstetric anaesthetists) and managers. Rapid ethnographies provide an efficient and timely approach to understanding complex health systems, and recent reviews have highlighted their potential to study organisational challenges of health systems and the experiences of marginalised populations within them.

Data collection:

Researcher AY will spend at least a week in each site and undertake observations across multiple settings in the hospital (see sample details). She will interview at least 6 clinicians in each setting, either as structured conversation alongside observations or in semi-structured interviews, making notes and/or audio recordings, also collecting photos of devices. Additional clinicians may also provide data depending on the setting thereby expanding the sample beyond n=30 interviews planned. She will debrief regularly with LH who will support early reflections on the data which may shape further sampling. Sample: Five hospitals will purposively sampled across England to support exploration of a wide range of perspectives on ethnic minority experiences to be explored in WP1b. These hospitals will include representation of the full range of birth settings (obstetric unit, midwifery-led units, free-standing midwifery units as identified in the Birthplace Study 2011), neonatal provision (different levels – NICU and HDU) and community midwifery provision. Sampling will also be informed by geographical and socio-economic and ethnic diversity. Each site will be chosen to represent multiple intersections in our sampling frame. Within each hospital setting we will sample a range of different clinicians to ensure a broad range of seniority and clinical perspectives.

Analysis:

Interview recordings will be transcribed using professional transcribers. These transcripts and observation field notes will be uploaded into analysis software, NVIVO, and combined for thematic analysis to identify the devices encountered in pregnancy and neonatal care pathways, health

professional descriptions of their usage and key themes to emerge from health professional interviews [21, 22]. As well as a narrative description of devices encountered/observed, we will use constant comparison to examine codes and emerging themes. Analysis will involve AY, LH, KM, the wider study team and will be discussed during dedicated PPI meetings. Output: Visual and descriptive map of medical devices used, supporting subsequent research phases.

WP1b: Survey of Devices

Methods:

A national, cross-sectional online survey using the Oxford-based UK Midwifery Study System (UKMidSS), this platform is a UK-wide infrastructure that enables national studies of uncommon conditions and events, and national surveys of practice in midwifery units. We will submit a structured survey to collect data from all UK midwifery units on device usage during pregnancy and the early neonatal period. UKMidSS offers a unique opportunity to engage with all midwifery units across the UK, and their ongoing relationship with dedicated reporting midwives means that response rates are far higher than conducting a survey by other means. Researcher CC, working with a research midwife in the UKMidSS team, will develop the survey instrument, building on evidence from review and WP1a to identify devices of particular interest. The UKMidSS team have experience of supporting surveys that are conducted rapidly and rigorously, with repeated contacts as required to increase response and data accuracy. In addition, they can support us in contacting the relatively smaller number of stand-alone obstetric units (i.e. those without alongside midwifery units) to ensure that we have the most complete picture of (specific) device use possible. We will explore: which of the specified devices are being used in different midwifery and obstetric units; whether the use of these devices differ according to the characteristics of the women giving birth; and specific challenges using these devices in different women.

Sample:

UKMidSS reporting midwives at all UK alongside and free-standing midwifery units will be sent details of the survey, this will ask details of device use in the midwifery unit and associated obstetric unit. Nominated staff at standalone obstetric units will be contacted to complete the survey for their setting.

Analysis:

Survey data will be exported into Stata, and descriptive statistics will be used to describe and compare different types of devices by setting, region and/or characteristics of the maternity population will be explored.

Output:

Analyses will provide a clear picture of current practice and, in conjunction with the output for WP1a, will inform subsequent research phases. Findings from WP1a and WP1b will be presented as an academic publication and as part of policy-focused report.