Midwives must, obstetricians may: An ethnographic exploration of how policy documents organise intrapartum fetal monitoring practice.

Abstract

Background

The capacity for midwifery to improve maternity care is under-utilised. Midwives have expressed limits on their autonomy to provide quality care in relation to intrapartum fetal heart rate monitoring.

Aim

To explore how the work of midwives and obstetricians was textually structured by policy documents related to intrapartum fetal heart rate monitoring.

Methods

Institutional Ethnography, a critical qualitative approach was used. Data were collected in an Australian hospital with a central fetal monitoring system. Midwives (n=34) and obstetricians (n=16) with experience working with the central fetal monitoring system were interviewed and observed. Policy documents were collected and analysed.

Findings

Midwives' work was strongly structured by policy documents that required escalation of care for any CTG abnormality. Prior to being able to escalate care, midwives were often interrupted by other clinicians uninvited entry into the room in response to the

CTG seen at the central monitoring station. While the same collection of documents guided the work of both obstetricians and midwives, they generated the expectation that midwives *must* perform certain tasks while obstetricians *may* perform others. Midwifery work was textually invisible.

Discussion and Conclusion

Our findings provide a concrete example of the way policy documents both reflect and generate power imbalances in maternity care. Obstetric ways of knowing and doing are reinforced within these documents and continue to diminish the visibility and autonomy of midwifery. Midwifery organisations are well placed to co-lead policy development and reform in collaboration with maternity consumer and obstetric organisations.

Statement of Significance

Problem

Midwives and midwifery practice are overly restricted, preventing the full realisation of the proven benefits of midwifery care.

What is Already Known

Quality midwifery care is a key component of safe maternity care systems. Midwives describe limits on their autonomy to provide evidence-based care in relation to intrapartum fetal heart rate monitoring.

What this Paper Adds

We provide a concrete example of how midwifery autonomy was constrained by policy documents regarding fetal heart rate monitoring. These policies undermined midwives' role in deciding when and if obstetric input was appropriate and left midwives' work invisible.

Keywords: Midwifery, fetal monitoring, power, obstetrics, guidelines, ethnography

Introduction

Globally, midwifery is recognised as making an important contribution to the provision of quality maternal and newborn care [1]. Better outcomes occur in healthcare systems where midwives provide midwifery care to women [2]. Increasing access to quality midwifery care is a current international priority [3], as significant improvements in maternal and perinatal survival can be expected from the universal application of midwifery care, even in high-income countries [4,5].

Despite this evidence, the World Health Organization has acknowledged that midwifery is underutilised – due to both a lack of access to midwives and constraints on midwifery practice which limit midwives' ability to provide quality midwifery care [1]. Renfrew and colleagues have argued that to progress the improvement of maternity care systems it is important to understand the ways in which midwifery practice is currently constrained [6]. This evidence, they argued, can then be used to inform system change to enable midwives to participate optimally in maternity care provision.

Even where midwives have central roles in care provision, their autonomy to provide care aligned with the tenets of midwifery is not always assured. Reiger and Morton's [7] critical analysis of discourses shaping maternity services reform demonstrated how midwifery philosophy is often at odds with obstetric and managerial culture. This is a result of a focus on control and standardisation as opposed to midwifery autonomy and the provision of individualised woman centred care [7]. This tension is nothing new, however. Nearly 20 years ago Stapleton and associates reported how midwives in the United Kingdom regularly limited the choices they presented to women in order to maintain their position within their organisation [8]. More recently a Swedish

grounded theory study highlighted how, in order to provide quality midwifery care, midwives worked “behind closed doors” to avoid surveillance (p. 83) [9]. The authors concluded that practices of this nature worked to perpetuate the invisibility of midwifery knowledge and expertise among other professionals and also reinforced a lack of recognition of the importance of midwifery.

While constrained midwifery practice is a macro system issue, developing an understanding how this comes about in clinical practice is probably best addressed at a micro or local and practice specific level. Intrapartum fetal heart rate monitoring is an area of practice where previous research has identified constraints on midwifery practice. For example, in studies undertaken in Norway, the United Kingdom, and the United States of America, midwives and obstetric nurses have described being relatively powerless to support women’s decision-making regarding the method of fetal heart rate monitoring [10-13]. Smith and colleagues’ systematic review of professionals’ experiences with fetal monitoring during labour provided evidence that cardiotocograph (CTG) use hindered midwives’ communication with women in labour, eroded midwives’ professional skills, and undermined midwives’ attempts to promote physiological birth [14].

We considered that it would be fruitful to identify how constraints on midwives’ autonomous practice relating to intrapartum fetal heart rate monitoring happen. The fetal heart rate is monitored during labour with the aim of preventing death or injury to the fetus or newborn arising from insufficient oxygen supply [15]. Two common approaches are intermittent auscultation (listening to the fetal heart for a short period on an intermittent basis, typically for one minute every 15 to 30 minutes) [16], or continuous monitoring using a CTG which presents a graphical record of both the

fetal heart rate and the woman's uterine activity [17]. Neither approach has been demonstrated to achieve better perinatal outcomes than the other, with the use of CTG monitoring associated with higher rates of instrumental birth and caesarean section [18,19].

One modification of CTG monitoring is known as central fetal monitoring. Data from the fetus and the birthing woman are collected and transmitted to a central location within a maternity service, where they are displayed as a digital CTG [20]. This offers the opportunity for multiple midwives and obstetricians to view the CTG. Concerns have been raised that similar surveillance technologies reinforce existing interprofessional power imbalances in healthcare settings [21,22]. Drawing on this research, we were interested in examining how the additional surveillance associated with the use of central fetal monitoring may threaten the autonomy of midwives providing intrapartum care.

The aim of this research was to explore how the work of midwives and obstetricians was structured by policy documents in relation to intrapartum fetal heart rate monitoring in a hospital where central fetal monitoring was in use. By examining the work of both professions, we hoped to make visible any differences in professional autonomy in relation to the same technology within the same organisational policy environment. The intent was to provide a firm evidence base on which to generate recommendations to support autonomous midwifery practice.

Methods

Design

This research was conducted as a portion of the doctoral studies program of the first author. This larger program explored how maternity clinicians' work was structured in relation to a central fetal monitoring system. Findings regarding the unintended consequences arising from the introduction of central monitoring [paper 1] and the potential safety implications of these consequences [paper 2] are in the process of publication.

Institutional Ethnography (IE) was used to conduct the research. IE is a critical qualitative methodology which seeks to understand how things work the way they do [23]. Texts are a particular focus, recognising that they organise our everyday experiences and the ways we work [24]. Within the traditions of IE, texts are defined broadly as replicable pieces of communication. While the most common texts are written documents, texts can include images, video, audio, and computer information systems [25]. Identifying and analysing texts to understand how they are put into action as people work provides a means to identifying how a particular event is socially and textually organised [23].

Setting

Data were collected in an Australian hospital with a maternity service providing birth care to over 5000 women annually. A central fetal monitoring system was installed in 2016, two years prior to the commencement of data collection. The system was provided by K2 Medical Systems and included Guardian and Athena software, but not INFANT computerised CTG interpretation software (see Appendix 1 for additional information on each software option). Each of the 14 birth rooms had a K2 Portal for data entry. Data from the birth rooms, including the digital CTG, were visible in a central staff area.

Participants

Clinicians with direct experience with the central fetal monitoring system were recruited during shift handovers and education meetings. Midwives (n = 34) made up the majority and included those providing intrapartum care, midwifery students in their final year of training, midwives supervising the birthing service (known as team leaders), and those who made use of data in the central monitoring system in a managerial role. Sixteen doctors also contributed and included consultant obstetricians, registrars in specialist training, and resident medical officers not in specialist training.

Qualitative research approaches generally collect data until data saturation is achieved [26]. The unit of study within IE is the institution (in this case the maternity care system), not the population of informants [27]. Sampling generated knowledge regarding the textual organisation of clinicians' work and was considered complete when sufficient data were available to provide a detailed description of clinicians' work and how it was organised [28].

Data Collection

Data were generated by the primary author from February to November 2018, and included interviews, observations, and document gathering. Focus groups (n = 4) and individual interviews (n = 27) were conducted in person. Some of the questions focused on identifying documents participants used in their work and understanding how they made use of these. For example: "How did you learn to use K2?" (to identify educational materials); "How do you know who to use the CTG for?" and "How do you know how to interpret the CTG and what to do when it isn't normal?" (to identify policy mediated decision-making and how this was applied in practice);

“Which specific policy do you use for that?” (clarification and detail). Interviews were digitally recorded and professionally transcribed.

Observational data were gathered in meetings where data from the central monitoring system was discussed or education regarding fetal monitoring was provided (21 hours over 10 periods of observation), at the central fetal monitoring station (49 hours over 13 periods of observation), and while following an individual clinician at work (five midwives, two registrars, 19 hours of observation). No specific data collection tool was used, with the researcher focusing on interactions between clinicians and the K2 system, and between clinicians in relation to data collected in the K2 system. For example, a conversation about what action to take in relation to a CTG would be recorded, while conversations about rostering, medication charts, or other text-based practices that did not relate to K2 were not noted. Hand-written notes were made during periods of observation.

IE methodological literature encourages ethnographers to identify texts by looking for them in action [25]. Texts were identified by listening for them in descriptions given by participants about the work they did (for example, in response to being asked about whether they were involved in decisions about who would be monitored by CTG, a participant answered “Where there was some sort of question, we pull up the policy who actually needs a CTG or not”). Further questioning was used to identify the specific text or section within a text that participants were referring to. Once commonly used texts had been identified, copies were brought to some of the later interviews and participants were asked to describe how they made use (or not) of the text. Texts were observed being used by clinicians as they accessed paper or electronic copies (for example a registrar was observed looking at a printed copy of a

policy displayed on a wall in the central monitoring room while asking “is Hashimoto’s a reason to monitor?”).

The texts selected for analysis were policy documents relating to intrapartum fetal heart rate monitoring (see Table) identified by midwifery and obstetric participants as being used to inform their practice. These documents were all observed in use. Some of the documents (notably the Queensland Health Intrapartum Fetal Surveillance Maternity and Neonatal Clinical Guideline and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists [RANZCOG] Intrapartum Fetal Surveillance Clinical Guideline) have subsequently been updated, however the edition in use during data collection was analysed. The central monitoring system and the CTG recorded within it were also considered as texts. Digital copies of screens / windows were obtained in the form of slides used for staff training, supplemented by field notes collected during observation.

Table goes here

Data Analysis

NVivo 12™ was used to store and collate data. Data were indexed by the first author to enable portions of data addressing similar issues to be collated easily [27], and these were read repeatedly with specific analytic questions in mind. For this paper, we focussed first on developing a description of clinicians’ CTG related work from interview and observational data. Textual data were then examined to understand how the work of midwives and obstetricians was textually organised. Drafts of the findings were written by the first author, with developing ideas supported or challenged by the remainder of the writing team. Cycles of writing by the first author, and review and editing by all authors, continued until the final draft was agreed upon.

IE highlights that texts exist in relation to other texts, often in a hierarchy, where information in one text relates to a second, and from this second text, to others in a sequential or circular relationship [29]. A textual hierarchy functions to transform actual local happenings (a change in the fetal heart rate for instance) into something that becomes actionable in an institutionalised and standardised way (by defining this change as a late deceleration and an abnormal feature of the CTG which warrants a response). Higher order texts provide regulatory frames for other texts within the hierarchy, defining concepts and categories and therefore providing instructions for how these texts are to be read. Our analysis examined the relationships between texts to show how the text at the top of the hierarchy generated instructions for how the CTG (the subordinate text) was to be created, read, and acted on.

Particular attention was paid to the use of nominalisations, shell terms, metaphors, and representations of people within the texts [25,29]. Filling in these semantically empty terms brought to light ways in which clinicians' work was textually organised, for example by understanding that the term "access to clinical services" referred to surgical and anaesthetic services rather than midwifery services. In line with IE, findings were developed through an iterative process of (re)reading and questioning data from interviews and observations. Described and observed practices were compared and contrasted with the texts in order to understand how things happened the way they did.

Ethics

Approval for the research was granted by both the hospital's human research ethics committee (HREC/17/XXX/313) and XXX University (2018/098). We met our ethical responsibilities in relation to the Australian code for the responsible conduct of

research [30]. Written consent was obtained from participants who were interviewed or observed while working. Information about the research, including the planned observations, was provided to all staff working in the birthing service via email and during meetings.

When observations at the central monitoring station were in progress, signs were placed at entrances to the area alerting staff that data collection was in progress and that they could ask for this to be suspended. No one asked for data collection to be suspended. At times, data collection was undertaken in birth rooms in the presence of birthing women and their support people. Specific written consent was not sought from these people as data from or about them was not collected, and we considered that obtaining written consent might have a detrimental impact on clinical care provision. Verbal consent was always obtained to be present within birth rooms.

Identifying details were removed from transcripts prior to analysis. We present limited information regarding our participants to protect their anonymity. This includes not disclosing gender, as male staff were in the minority and doing so might identify them. We have also chosen to not use pseudonyms or codes and identify participants only by profession in the findings.

Trustworthiness

The primary author is an obstetrician with clinical experience of working with intrapartum fetal monitoring, but not with central fetal monitoring systems. This provided insider perspectives into the everyday operations of the birthing service, but an outsider perspective with regards the experiences of clinicians working with central fetal monitoring. This author had never worked at this hospital and was

therefore not known to the majority of participants. Some senior staff and midwifery students knew this researcher from other settings.

The research was conducted under doctoral research supervision. The supervisory team comprised midwives with current and previous extensive experience in clinical midwifery roles. Developing findings were reviewed and feedback provided by the supervision team in the form of draft documents, subsequently revised by the first author. A reflexive approach, supported by journaling, was used throughout the design, conduct, and writing of the research. The first author closely adhered to methodological requirements of IE and had regular meetings with other researchers using IE. Preliminary findings have been presented at research conferences and feedback from these applied to analysis.

Findings

A description of the work midwives performed with the central monitoring system, derived from interview and observational data, is presented first for orientation. The three main policy documents clinicians used in relation to this work are then described. How these documents co-ordinated the work of midwives as they responded to perceived abnormalities in the CTG recording is highlighted first. We then move on to explore, using the example of fetal blood sampling, how the documents structured obstetrician's work. Finally, we examine how practices to expedite birth were textually represented differently for midwives compared with obstetricians.

Midwives' work with the central monitoring system

When a woman first arrived in the birth room, her midwife turned on the K2 Portal and began to enter data into windows which requested specific information. One of the midwifery students commented on how their learning was structured around this focus to gather information and record it in K2, saying:

> *That's the first thing that you are taught as a student. How to press the buttons [in K2]. It's go to the computer, put them in, get their UR [unit record number], set it all up, put in the observations, do everything. I vividly remember being told how to do everything first before I could even sit down and just feel a contraction coming on. I had to see it on K2.*

This included a series of windows asking about the presence of risk factors for which CTG monitoring was considered to be required (see figure 1). When CTG monitoring was deployed, the midwife would secure sensors to the woman's body, and begin to interpret the trace. The CTG recording was interpreted at regular intervals throughout the woman's labour. To do this, the midwife methodically assessed the CTG against pre-determined criteria then recorded their assessment in K2 (see figure 2).

Figures go here

As the woman's labour progressed, midwives added additional information in K2 such as the findings from vaginal examinations, changes in the woman's position, or events the woman experienced (such as vomiting). Other data recorded in K2 was gathered from sensors on the woman's body, such as blood pressure and heart rate, in addition to the CTG data. Midwives read the information in K2 and used it to inform the care they provided and the information they communicated with other

clinicians. Midwives provided examples of how they made use of the information in K2 in interviews:

> *Say, for instance, there was a deceleration on a [CTG] trace, the midwife would generally turn her from side to side, maybe new position, maybe do an examination.*

> *I've had a preterm baby, the woman has had prolonged rupture of membranes, with a small baby on board, and I've gone to them [the obstetric registrar] and said I'm worried about this [CTG] trace. I want this woman reviewed.*

If the CTG was uninterpretable or was interpreted as abnormal, midwives undertook actions to identify the cause and to produce an interpretable and normal CTG pattern. These actions typically included repositioning sensors on the woman's body, assisting her to change position, assessing her vital signs, and / or performing a vaginal examination. A demonstration of this was observed when following a midwife at work (Clinician observation 3, 22/8/2018) and was recorded in the field notes as:

> *20:59 There is loss of contact [not recording the fetal heart rate] with contractions. The midwife is adjusting the monitor to try to address this. The midwife says, "C'mon baby! This happens all the time."*

> *21:04 Ongoing loss of contact with the next contraction. The midwife explains that they are going to transfer from the telemetry monitor to the "wire one" to see if that rectifies the situation. This is done and a free text entry made in K2 to document the change.*

21:13 The midwife is still trying to get the CTG to record during contractions, by shifting the ultrasound sensor to the other side of the woman's abdomen. The midwife says "I'll just see if me holding this works".

21:19 The midwife presses the staff assist button. Another midwife appears at the door and explains that the team leader is busy. There is a conversation about changing the woman's position to improve the quality of the CTG recording. The second midwife assists in changing the woman's position.

If the midwife was unable to achieve a normal CTG pattern, they would communicate with the midwifery team leader and / or the obstetric registrar, informing them of their interpretation and actions, and when appropriate, to request review. This review involved the midwifery team leader and / or obstetric doctor(s) entering the birth room and gathering information. Data in K2 would be reviewed, and questions might be asked of the birthing woman and the midwife. Physical assessment might be undertaken. The following exchange was observed when following a registrar (Clinician observation 9, 26/10/2018):

11:04 The team leader points at a CTG on the central monitor and says "they've just asked for review". The registrar pulls up a zoomed view of the CTG and scrolls through it. The registrar and resident go to the room and check with the midwife what their concern with the CTG was. The registrar explains to the woman that they reviewed the CTG outside the room and have no concerns. The resident documents the conversation in K2.

A plan for management would be decided, which might involve ongoing surveillance of the CTG or interventions such as fetal blood sampling, adjusting doses of medications or intravenous fluids, or performing an operative birth. These actions

might be performed by the midwife caring for the birthing woman, the midwifery team leader, or an obstetric doctor depending on the nature of the intervention.

Being K2ed – disruption of midwifery work

While the review process described above was considered as the ideal, this was not always what occurred in practice. Midwives used the term *being K2ed* to refer to the disruptive and inappropriate entry of another clinician, usually a doctor or the midwifery team leader, into the birth room. A detailed description of this phenomenon appears in [paper 1]. *Being K2ed* commonly occurred when the midwife was working to address an abnormal or uninterpretable CTG pattern and was yet to request assistance. The team leader or obstetric doctor could see the CTG at the central monitor but did not have access to additional clinical information, nor were they able to determine that the midwife was already taking appropriate action, prompting them to go to the birth room. This prevented the midwife from retaining control of decisions about whether to seek review, when, from whom, and how to communicate their concerns about the CTG pattern.

A midwifery team leader provided an example during an interview of how obstetric staff might enter a birth room in a way that undermined midwifery autonomy:

> *Different registrars have very different methods of management, like some are happy to sit and watch, whereas others will see a deceleration that's gone down for sixty seconds and head straight into the room. Without talking to the team leader or, you know thinking that it's not something you need to be in the room for. The midwife will buzz if it continues and doesn't resolve with some position changes. You know we [midwives] have got that three to five minute*

mark to make a decision, we are already there present, so give us some time to let us have a fiddle.

Understanding the relationships between policy documents

Participants described and were observed to make use of three main documents which structured their work in relation to intrapartum fetal rate monitoring and the central monitoring system (see Table). Here we explore the relationships between these documents, and show the central role played by the RANZCOG Intrapartum Fetal Surveillance Clinical Guideline. The three policy documents were the:

1. Fetal Heart Rate Monitoring – Assessment and Management Procedure PRO1879 (referred to subsequently as FHRM Procedure) (2018), a policy document generated and used specifically in this hospital.

2. Intrapartum Fetal Surveillance Maternity and Neonatal Clinical Guideline (referred to as QH-IFS) (2015), generated by the Queensland Health Department for use through the state; and

3. Intrapartum Fetal Surveillance Clinical Guideline, 3rd edition (referred to as RANZCOG-IFS) (2014), produced by RANZCOG for use by maternity clinicians working in Australia and New Zealand.

Another hospital document, the Policy Instrument Management Procedure PRO1272 (2014) defined clinicians' responsibilities in relation to different types of policy documents. Instructions given in *procedure* documents were described as mandatory, while *guidelines* "provide advice on best practice and are intended to

support decision making. They allow a level of flexibility and discretionary judgment" (p. 6).

There were strong inter-textual relationships between each of these policy documents and K2. For example, the RANZCOG-IFS set out definitions for the various features of the CTG trace (such as variability and decelerations), also defining which features categorised the CTG as normal or abnormal (p. 30 – 31, 60 – 62). These same definitions were reproduced in the QH-IFS with the RANZCOG-IFS cited as the source (p. 16, 26 - 30). The FHRM Procedure required clinicians to adopt the recommendations of the QH-IFS guideline (p. 1), defined a normal CTG pattern in the same manner as the RANZCOG-IFS (p. 3), and reproduced a flow chart from the QH-IFS which included the same normal CTG definition provided by RANZCOG (p. 10). The CTG Review window in K2, used to document categorisation of the CTG as normal or abnormal, also used the same terminology as that set out in the RANZCOG-IFS.

The RANZCOG-IFS therefore provided a regulatory frame for the other two policy documents and for K2, as it defined key terminology. The RANZCOG-IFS laid out a series of recommendations that were then taken up in the QH-IFS and FHRM Procedure, while the wording of each was slightly modified. Several of the RANZCOG-IFS recommendations provided guidance on how clinicians were to respond when the CTG was categorised as abnormal.

Midwives must escalate care

Communicating with the midwifery team leader and / or obstetric staff about abnormalities of the CTG recording (known as escalation of care) was part of a midwife's role when caring for a woman using CTG monitoring. The RANZCOG-IFS

generated an expectation that midwives *should* seek assistance, stating: "*In clinical situations where the fetal heart rate pattern is considered abnormal, immediate management should include: ... Escalation of care if necessary to a more experienced practitioner*" (p. 17). Similar advice was given in the QH-IFS but did not include flexibility for the midwife to decide whether escalation was necessary, instructing midwives to: "*Follow local escalation procedures to senior midwifery and obstetric staff when CTG abnormal*" (p. 26). The FHRM Procedure included the following: "*Consultation with senior midwife or medical officer is required when fetal heart rate or CTG is interpreted as abnormal*" (p. 1). In combination with the mandatory nature of the FHRM Procedure, the statement that consultation was *required* every time the CTG was considered abnormal removed the option for midwives to first decide whether escalation was clinically appropriate.

The wording of the FHRM Procedure did not acknowledge that midwives might use interventions to attempt to restore the CTG to normal. Escalating care would be appropriate when these interventions had been applied and were not successful but would not be necessary if the CTG returned to normal. The disruption of *being K2ed* typically arose while midwives were actively addressing a CTG abnormality. During an interview, a midwife shared an example of a time when they were in the process of managing the care of a woman with an abnormal CTG, and was unable to escalate care:

> *That CTG was abnormal. Before I knew it, I had an obstetric registrar come into my room and take over the birth. She actually pushed me out of the way. … I did not get an opportunity to escalate this process. The whole thing was escalated above and beyond my control. I don't know if that was necessary.*

While the intention of the three policy documents was to ensure that midwives requested help appropriately, they also sanctioned clinicians entering the birth room when it was not clinically appropriate to do so. Any clinician observing the CTG at the central monitoring station who interpreted the CTG as abnormal might assume that their interpretation of the CTG was correct, that the midwife should have arrived at the same interpretation, and therefore the midwife should have already escalated care. On the basis of these assumptions, it appeared logical to go to the birth room. The FHRM Procedure therefore supported behaviours that undermined midwives' appropriate efforts to address changes in the CTG pattern and removed midwives' authority to decide whether and when escalation of care was clinically necessary, and who best to communicate with.

Obstetricians may perform fetal blood sampling

Fetal blood sampling is an approach used to gain further information about the wellbeing of the fetus[31] and was only performed by obstetric doctors. Examining policy documents relating to fetal blood sampling provided an opportunity to assess whether the same policy documents co-ordinated obstetricians' work in the same way they co-ordinated midwives' work.

The RANZCOG-IFS advised, "*consideration of further fetal evaluation or delivery if a significant [CTG] abnormality persists*" (p. 17). A subsequent recommendation stated that "*units employing electronic fetal monitoring are strongly encouraged to have access to fetal blood sampling facilities to assist in the management of labours where the fetus is demonstrating equivocal CTG changes*" (p. 20). The QH-IFS included a similar statement, "*consider further fetal evaluation when CTG features suggestive of likely fetal compromise, or fetal compromise and abnormality persisting*

after correcting reversible causes" (p. 17). The FHRM Procedure did not mention fetal blood sampling, which was addressed in another hospital policy document, titled Fetal Scalp Lactate Work Instruction. This work instruction document provided instructions about how to perform fetal blood sampling and interpret the results but offered no guidance as to when fetal blood sampling should be performed.

Both the RANZCOG-IFS and the QH-IFS presented fetal blood sampling as something to *consider*, with the Fetal Scalp Lactate Work Instruction not indicating any necessity for obstetricians to use (or not) this approach when the CTG was abnormal. The RANZCOG-IFS provided encouragement to *units* to provide fetal blood sampling equipment, thus enabling but not requiring obstetricians to perform fetal blood sampling. These policy documents therefore structured obstetricians' work differently to the way they structured the work of the midwife. While the documents generated expectations that obstetric staff *may* perform fetal blood sampling in response to an abnormal CTG if they wished, they also required that midwives *must* escalate care when the CTG was abnormal.

Expediting birth: the invisibility of midwives' work

Having compared a work task that was performed primarily by midwives with one performed only by obstetricians, we then analysed policy documents addressing a task that could be performed by either a midwife or an obstetrician, albeit in different ways. This task related to the actions taken to hasten or expedite birth. As previously quoted, the RANZCOG-IFS recommended *consideration* of *delivery* when the CTG was abnormal, later adding that "*delivery should be expedited where there is clear evidence of serious fetal compromise (fetal blood sampling should not be undertaken*); *CTG abnormalities are of a degree requiring further assessment, but*

fetal blood sampling is contraindicated, clinically inappropriate or unavailable; *or the decision to delivery interval may be prolonged by virtue of location, clinical staff availability, patient factors or access to clinical services*" (p. 20). While not specifically naming the profession of the clinician, this recommendation was directed towards obstetricians rather than midwives.

The wording in the RANZCOG-IFS implied that this recommendation related to obstetricians firstly by tying the decision to expedite birth to the use of fetal blood sampling, an obstetric task. In addition, considerations of *location, clinical staff availability, patient factors or access to clinical services* implied that the birthing woman needed to be in a *location* other than the one where she was currently being monitored, and in the presence of *clinical staff* and with *access to clinical services* other than those that were already available. As intrapartum CTG monitoring was in use, it can be assumed that the birthing woman was receiving care from a midwife in a location where birth could occur. The midwife would be able to use midwifery approaches to expedite birth, yet such a possibility was not acknowledged within this recommendation. Instead, it was implied that the *delivery* would be a surgical birth performed by an obstetrician, as this would require a specific location (such as an operating theatre), other clinicians (for example anaesthetists, perioperative nurses and possibly neonatal paediatric doctors and nurses) and other services (such as surgery and anaesthesia).

The QH-IFS made it clear that surgical birth by an obstetrician was intended, with advice to "*expedite birth by instrument or caesarean section where fetal blood sampling unavailable, or CTG indicates further assessment required and fetal blood sampling contraindicated, or clinically inappropriate*" (p. 17). The FHRM Procedure

offered no recommendations about expediting birth, therefore providing no mandatory instructions regarding who was to do what to expedite birth. As *guidelines* rather than a *procedure*, the recommendations contained in the RANZCOG-IFS and the QH-IFS were for the *consideration* of obstetric staff rather than a mandate. In this way the documents preserved the autonomy of obstetricians.

In practice, expediting birth was also performed by midwives, but in different ways to obstetricians. Midwives used verbal encouragement of women's pushing efforts, changes in her position, and sometimes the use of episiotomy to hasten birth. None of these required the different location, clinicians, or clinical services described in the RANZCOG-IFS. Midwives' efforts to expedite birth were therefore textually invisible in the policy documents. This was reflected in practice, where midwives were observed expediting birth but doing so while anticipating that at any moment their efforts might be disrupted by obstetric staff. A midwife described this anticipation in an interview:

> *The time that it happens is when you're pushing and the CTG starts to deteriorate. That's a point that you can look at the [CTG] trace and you know that you've got probably about five to ten minutes to get the baby out before the doctors are going to come knocking on your door.*

Reflecting the wording of the policy documents, in practice midwifery actions were not seen nor valued as a legitimate way to expedite birth in the same way that surgical birth, conducted by obstetricians, was viewed.

Discussion

This research set out to explore how the work of midwives and obstetricians was socially and textually structured in relation to intrapartum fetal heart rate monitoring. We found that policy documents relating to fetal monitoring limited midwives' autonomy to decide whether, and when, obstetric assistance was required, while at the same time preserving obstetric autonomy to decide whether or not to use fetal blood sampling and/or perform a surgical birth. The mandated requirement that midwives must escalate care whenever the CTG was abnormal introduced a form of logic that supported team leaders and obstetric staff entering birth rooms in the disruptive manner midwives referred to as *being K2ed*. In addition, midwifery work performed to manage women with an abnormal CTG and to expedite birth was textually invisible.

Midwives must, obstetricians may

Sociologists have documented a long history of conflict between the professions of midwifery and obstetrics [32] with technological approaches to fetal monitoring having a role in making it possible for obstetric discourse to shape the provision of maternity care [33]. Our analysis of policy documents relating to intrapartum fetal heart rate monitoring provides a concrete example of the way in which policy documents have the capacity to both reflect, and reinforce, power imbalances in maternity care. The same collection of documents guided the work of both obstetricians and midwives and mandated that midwives must perform certain tasks in relation to the CTG. In combination with the additional surveillance made possible by central fetal monitoring, the documents set up a form of logic which made it rational for clinicians to disrupt midwives attempts to manage CTG abnormalities.

The strongest restrictions on midwifery autonomy occurred in mandatory policy documents generated for use in the hospital. These documents drew on the discursive structure of the RANZCOG fetal surveillance guideline. The RANZCOG guideline therefore generated the textual environment in which hospital policy documents offered support for the autonomy of obstetric staff whilst limiting it for midwives. As a professional organisation whose members are almost entirely obstetricians or those training to become obstetricians, RANZCOG exists predominantly to support and benefit its members [34]. RANZCOG sets standards for obstetric practice and thus it is highly appropriate that the organisation should write guidance for obstetricians. However, we argue that it is not appropriate for obstetric organisations to set practice standards for the midwifery profession.

Veiling midwifery

Hansson and Lundgren [9] coined the term "veiled midwifery in the baby factory" (p. 80) to capture the sense that midwifery work is only partially represented in official accounts within maternity care systems that favour industrialised and standardised approaches to care provision. Our findings confirm this lack of visibility of midwifery work within policy documents regarding intrapartum fetal monitoring. Midwives' work in managing CTG abnormalities and expediting birth was textually "veiled" and as a consequence this work was prone to disruption.

As previously noted, midwives' work to support physiological birth has sometimes been described as happening "behind closed doors" (p. 83) [9], and we were curious to examine the effects that central monitoring might have on this phenomenon. At the hospital where our research was conducted, the surveillance made possible by the central monitoring system removed the sense of a closed door. Any clinician in the

central monitoring room could see the CTG and other clinical information, giving a partial sense of what the midwife was, or was not, doing in the birth room. The act known as *being K2ed* frequently disrupted midwives' clinically appropriate work to address CTG abnormalities [paper 1] as a consequence of this visibility. The absence of specific detail in policy documents regarding midwives' work made it easy to discount the work midwives were doing in relation to maintaining fetal wellbeing.

Perpetuating "too much too soon"

Research does not support the widespread application of intrapartum CTG monitoring, having demonstrated no improvement in perinatal mortality and long-term neurological injury but an increase in surgical intervention [18,19,35]. There is evidence that adding central fetal monitoring produces no perinatal benefit and appears to further increase surgical birth rates [36,37]. Miller and colleagues have defined the problem of "too much too soon" as the unnecessary use of non-evidence-based interventions in maternity care [38], a description which applies to central fetal monitoring systems. Miller et al. proposed that development of, and adherence to, appropriately constructed guidelines would offer a means to counter the problem of inappropriate intervention.

Our research has demonstrated how policy documents and the K2 system encouraged early and more frequent obstetric involvement, and favoured surgical birth in the management of CTG abnormalities. In this instance, policy documents guiding fetal monitoring surveillance enabled rather than countered inappropriate intrapartum practices. Addressing the specific structure and language of policy

documents may restore visibility to midwifery and ensure autonomous midwifery practice is valued, respected, and supported.

Recommendations

There is an urgent need to critically review current intrapartum fetal heart rate monitoring policy documents used to co-ordinate the provision of intrapartum care. Obstetric organisations have been prominent in the production and maintenance of such documents [39]. Developing policy documents without midwifery input risks perpetuating the underutilisation of midwifery knowledge and skill. Midwifery organisations are well placed to co-lead policy development and reform in collaboration with maternity consumer and obstetric organisations.

The internationally acclaimed evidence-based framework for quality maternal and newborn care published in the Lancet midwifery series [5] provides guiding principles for collaborative approaches to designing maternity care that recognise and support the role of midwives. The framework could serve as a sound foundation for the development of policy documents that counter the “too much too soon” approach. In line with the work of Hildingsson and associates [40], we argue that supporting midwifery autonomy strengthens the recruitment and retention of midwives in clinical practice hereby increasing women’s access to midwifery care.

Strengths and limitations

The social theory underpinning IE rejects assertions that findings generated using this methodology represent universal and generalisable truths [41]. Our data were collected from a single hospital using a particular central fetal monitoring system in a specific policy environment. As such, we make no claim that the findings of our

research are widely generalisable. Other avenues of IE enquiry might have built different or more complete knowledge of how maternity clinicians' work in relation to intrapartum fetal monitoring is organised, for example by exploring health care financing, or legislative and regulatory frameworks. As a research team, our prior knowledge and experiences as practitioners shaped our interest in exploring the role policy documents play in the organisation of clinicians' work.

The use of policy documents to structure practice is widespread in healthcare systems of high-income countries. Most of these countries have an obstetric organisation that has generated a guideline regarding intrapartum fetal monitoring (for example the International Federation of Obstetrics and Gynaecology in Europe and the American College of Obstetrics and Gynecology in the United States of America [17,42]). While there are some differences in the schemas used to classify the CTG as normal or abnormal, obstetric intrapartum fetal monitoring guidelines are similar in structure and intent, and the guidance provided regarding the management of women with an abnormal CTG is largely the same [43]. We therefore consider it probable that our findings are transferable to other maternity care settings with similar relationships between fetal monitoring guidelines and clinical practice.

Conclusion

Midwives' autonomy in relation to intrapartum fetal monitoring was limited by policy documents which described the responsibilities of clinicians who work with intrapartum fetal heart rate monitoring. Simultaneously, these same documents permitted obstetricians to retain autonomy. This textual organisation of midwives' work undermined the appropriate use of midwifery approaches to support fetal wellbeing. While further research is required, we argue that there is an urgent need

for critical analysis and redevelopment of maternity policies relating to fetal heart rate monitoring during labour. The focus should be on ensuring that evidence-based approaches and due recognition of the capacities of midwives are foregrounded.

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