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Delivery suite assessment unit: auditing innovation in maternity triage

A Delivery Suite Assessment Unit (DSAU) has been established at a large Northern teaching hospital. This was as a recommendation of ASQUAM (achieving sustainable quality in maternity) to reduce antenatal admissions to delivery suite and provide a more appropriate environment for women attending for antenatal or labour assessment. The DSAU has also provided an effective teaching environment where skills such as effective telephone triage, diagnosis of labour and care of women with pre-labour spontaneous rupture of membranes (SROM) have been developed by junior staff. The first twelve months' audit results indicate that the establishment of the DSAU has been successful in reducing antenatal admissions to delivery suite by increasing the transfers of clients home, rather than to the antenatal wards. This may reflect the confidence of the highly skilled midwives working in this environment and the confidence women feel about their ability to obtain prompt and accurate advice over the telephone

Introduction

The aim of this paper is to explore the audit findings of a new delivery suite assessment unit in order to determine whether it is fulfilling the purpose for which it was designed. In addition, the concept of triage is examined and its application to midwifery practice discussed. Finally, recommendations are made for further research around both the function of the unit and the use of triage in providing a safe maternity service.

One of the recommendations arising from the annual ASQUAM (achieving sustainable quality in maternity) conference in 2000 was that the potential for a new triage unit be investigated to reduce the workload burden for delivery suite. In response to this, in 2001 a birth rate plus study (Ball and Washbrook, 1996) was undertaken to establish safe staffing levels in the maternity service in Bradford. It became apparent that a substantial number of admissions to delivery suite were antenatal rather than women in labour. These totalled on average 470 cases each month. As a result more specific data was collected to explore the exact nature of the antenatal admissions. Specifically, the mode and timing of referral, the length of stay on delivery suite and the transfer destination were examined.

During a two month period, 979 women attended delivery suite. Forty-three percent of these were subsequently admitted to the antenatal wards. In a unit with an annual birth rate of approximately 5,400 deliveries, these numbers placed an increasing demand upon an already decreased staffing establishment. As a result of these findings, it was decided to pilot a triage service in the form of a delivery suite assessment unit (DSAU) separate from the delivery suite.

It has been suggested (Angelini, 1999) that geographical separation of the triage unit is the best way to minimize the burden on scarce resources such as delivery suite beds and staff. These concerns, together with chronic staff shortages, fuelled the development of a delivery suite assessment unit at Bradford Royal Infirmary (BRI). The aim of the unit was to triage and assess antenatal women who would usually attend the delivery suite. Specific admission criteria were developed to allow the unit to sit comfortably between the existing antenatal day unit and delivery suite. These included limiting admission to women with a gestational age of at least 20 weeks. In

the USA, where triage units are a well established, this is the most common model of care (Angelini, 1999). In addition this conforms to existing antenatal admission criteria in Bradford. Women phoning to request advice can thus be channelled to the appropriate unit. Initially the DSAU was established as a six-month pilot project. The opening hours for the unit were determined to coincide with peak times for antenatal attendance on delivery suite (10.00–22.00 daily). Angelini (2006) points out that as obstetric triage units have proliferated during the past decade it is very important that care provided in triage units conforms to evidence based guidelines. While standalone maternity triage is a more recent concept in the UK, it is equally important that midwives audit the care provided by triage units to ensure that here, too, care is congruent with the best available evidence.

Literature review

To explore the concept of triage and its use within a maternity setting, a comprehensive review of the literature was undertaken. Using the search terms 'triage' and 'the organization of maternity care', a search was undertaken using CINAHL and Medline. Articles were excluded which discussed triage in relation to specific clinical conditions, such as first trimester haemorrhage, which fell outside the established admission criteria.

Triage has been defined as a decision making process that prioritises a person's need for care on arrival to an acute health care setting (Gerdtz and Bucknall, 2001). The triage process consists of the ability to make clinical judgments and predict outcomes (Austin and Calderon, 1999). An essential requisite for this is adequate clinical knowledge (DeVore, 1999). Although the concept is well established in the nursing literature, no midwifery research pertaining to triage in the UK was identified. This is somewhat surprising as triage is an integral part of the role of the midwife particularly in the delivery suite setting (De Vore 1999). However, in the USA, triage services are well established in units with a high number of deliveries (Angelini, 1999; Angelini and Mahlmeister, 2005).

The use of telephone triage has become an important aspect of health care with the advent of services such as NHS Direct (McKinstry and Sheikh, 2006). Within the NHS maternity services, pregnant women have 24 hour telephone access to delivery suite. Consequently, part of the midwife's role is to make clinical judgments based on the telephone history. It is important to recognize that the goal of telephone triage is to determine whether or not hospital attendance is necessary (DeVore, 1999). The advice given will vary according to the nature of the problem. Women may be offered reassurance, advised to contact their own midwife/ GP, or asked to attend the hospital for further assessment.

The critical nature of this midwifery role emphasizes the need for experienced midwives with highly developed clinical decision making skills. There is no UK research examining the ability of the midwife to triage effectively. However literature from other disciplines indicates that the triage role is fraught with potential difficulties (Marsden, 2000; Smulian et al, 2000; McKinstry and Sheikh, 2006). These include issues around the quality of care, accessibility and workload. Therefore, it is of paramount importance that this is explored to ensure that risk management issues are identified to facilitate safe practice. Anecdotal evidence suggests that the triage role of the midwife on delivery suite can considerably increase the workload, making

it difficult to meet the gold standard of one-to-one care in labour. This further exacerbates the problem identified earlier in relation to antenatal admissions.

To evaluate the effectiveness of this innovation in practice, audit information was collected for the pilot period. A range of data was collated and for the purpose of this article, the relevant findings are presented and analysed. A total of 3,330 women who met the DSAU criteria attended in the six-month period in 2002. Previously all referrals would have gone to delivery suite however, as a result of the new unit, delivery suite attendance was reduced by 63%. An important issue is to determine why women attend the DSAU and how this compares with delivery suite attendance. *Figure 1* illustrates the reasons for referral to both units. As shown most antenatal women attending either unit were diagnosed as not in-established labour (NIEL). All the other conditions are routinely triaged by delivery suite midwives with the exception of women attending for ECV (external cephalic version) or for insertion/removal of cervical suture.

Data was collected examining the sources of referral to the DSAU and delivery suite (*Table 1*). As can be seen from the data, women mainly self-referred to both units (87% of referrals). However, there is no indication of the number of women who phoned the DSAU directly compared to delivery suite, as all antenatal telephone enquiries to the delivery suite were transferred. It is obvious from the data that GPs and community midwives are aware of the assessment unit as they referred more women to the unit than to delivery suite. However, anecdotal evidence suggests that these referrals were not always appropriate as some of the women could have been assessed and treated by the GP or community midwife.

Data was collected comparing the discharge destination of women who attended delivery suite with those attending the DSAU (*Table 1*). Fewer women (down from 43% to 14%) were actually admitted to the antenatal wards during the audit period. This was mainly due to women who were diagnosed NIEL being discharged home. In addition there was a reduction in the number of women admitted to the wards from delivery suite during the DSAU opening hours. This was because women only attended delivery suite during this time if they did not meet the DSAU criteria. Focusing on the delivery suite data collected between the hours of 22.00–10.00 when the DSAU was closed, comparisons can be made of women meeting the DSAU criteria who attended either unit. Although more women were admitted to the wards from delivery suite, this may be because of some reluctance to discharge women home overnight.

In developing a DSAU, one issue requiring further exploration was the role of the obstetrician in the unit. As the core midwives were selected for their knowledge and experience, they were responsible for clinical decision making within their scope of practice (UKCC, 1997). Clinical problems outside of this scope would be referred to senior medical staff. In the maternity service it is assumed that medical assistance is rapidly available on the delivery suite. It was important to determine whether women attending the DSAU would have the same access to medical care if required. Initially, to address this concern it was decided that all medical cover would be provided by delivery suite. However during the period of the audit, a review of the senior house officer (SHO) role in the maternity unit was undertaken. This resulted in SHO cover being provided from the antenatal and postnatal wards. This also

prevented summoning assistance from obstetricians to the detriment of their priority on delivery suite. They sometimes did not see the assessment unit as a priority assuming that any women with urgent problems would be transferred immediately to the delivery suite. However, it is important to note that the SHO in obstetrics is a training post and any complex issues would require referral to the most appropriate member of the medical team. Audit data demonstrated the effectiveness of this strategy in that waiting times to see a doctor and overall length of stay were similar in both units (*Figure 2*).

An aspect of the audit concerned client satisfaction with the triage process which Ament (1999) considers essential. However it appears that the use of telephone triage may be more problematic than face-to-face consultations. People whose first language is not English may struggle with communicating by telephone. (Kirkham and Perkins, 1997; McKinstry and Sheikh, 2006). In addition clients on low incomes may only have access to expensive mobile phones, which may impact on the length of a telephone consultation. Part of the audit involved eliciting women's views on the new unit. A questionnaire was distributed to 150 women, 59% of which were returned. Of these women 51% were White British and 36% of Pakistani origin. The remaining ethnic groups included Caribbean, Bangladeshi and White European. Seventy-five per cent of women spoke English as their first language; other languages included Urdu (11%) and Punjabi (6%). A number of closed answer questions were asked. The main findings are shown in *Table 2*. As a closed response schedule was utilized, women were provided with little opportunity to elaborate on their responses. However it is interesting to note that the area of least satisfaction concerned choice of treatment. Although it could be suggested that treatment decisions may be restricted by medical protocols, elements of midwifery care involving communication demonstrate a high level of user involvement (Rowe et al, 2002).

Discussion

In contemporary health care, traditional role boundaries are becoming blurred. Of primary importance is that users are offered high quality care by competent health care professionals (Reveley, 1998). The data from the audit of the new DSAU demonstrates the potential of this new service in reducing delivery suite workloads and increasing user satisfaction. However an important consideration in initiating a triage service is providing the highest quality of service. This requires an assurance that midwives staffing the unit can demonstrate sophisticated triage skills. Indeed when developing new systems of care, it is essential that they be examined within the context of safe practice (Vincent, 2006)

As identified earlier, women were more likely to be discharged home from the DSAU than admitted to the antenatal wards. This suggests that the midwives in the unit have a high level of confidence in their ability to determine clinical urgency, which is an essential triage skill (Gerdtz and Bucknall, 2001; Austin and Calderon, 1999). However, DeVore (1999) warns that during the triage process, midwives must be aware of their own bias towards normality. This bias may develop from the humanistic/holistic discourse underpinning midwifery education and practice (Davis Floyd, 2001). In contrast the medical model of pregnancy can only confirm normality in retrospect (Murphy and Fullerton, 2001). Potentially serious problems could be missed, particularly during telephone triage, where sophisticated communication

skills are required to compensate for the lack of other sensory information (Smulian et al, 2000). This is particularly relevant in an increasing culture of litigation, where a large proportion of medical malpractice suits result from communication breakdown between professionals and clients (Ament, 1999).

It has been confirmed that history-taking is more difficult over the telephone, especially if the caller is frightened or anxious (Marsden, 2000). In addition women whose first language is not English may have difficulty expressing themselves. Indeed, Kirkham and Perkins (1997) discuss the difficulties in making decisions about care when the woman speaks little or no English. Her command of the language can be further compromised by fatigue, illness or stress (Roberts and Paden, 2000). This is significant as the accuracy of triage decisions is dependant on the quality of the data obtained (Gerdtz and Bucknall, 2001; McKinstry and Sheikh, 2006).

One way that staff involved in telephone triage can increase the accuracy of their diagnosis is by visualizing both the person and the pathology (Ament, 1999) In obstetrics this is much easier when the midwife knows the client. However in larger maternity units this is rarely the case and therefore greater care in telephone diagnosis is required (DeVore, 1999). This is increasingly important when the user speaks little or no English. Baxter (1997) supports this highlighting that poor English can develop serious barriers to maternity service access. This can make the triage process more problematic, thus, interpretation services are essential (DeVore, 1999).

Heslop et al (2000) discussed the enhanced expertise and decision making abilities of senior health professionals. These patterns of expert decision making reflect Benner's (2001) definition of the expert practitioner, who uses intuition to reach clinical decisions (Marsden, 2000). There is a need for expert midwives to have confidence in their clinical judgments while dealing with triage situations (Austin and Calderon, 1999). This is reflected in the selection criteria for staff on the unit, which required these very attributes. However it is important to note that the triage process appears easy when undertaken by expert practitioners, therefore, less experienced staff may not appreciate the complexities of the process (Marsden, 2000). The importance of training more junior staff in triage must be stressed and the essential skills should be included in the midwifery curriculum (Angelini, 1999). DeVore (1999) concurs with this, pointing out that medical students are taught specific triage skills through role-play, while midwifery students do not routinely receive this training. She highlights that the communication skills required for successful telephone triage include interviewing and goes on to suggest that it is important to use open-ended questioning in words that the client is able to understand. This allows full exploration of symptoms resulting in a more accurate diagnosis. Detailed documentation is an essential component of the triage process and its importance must not be underestimated.

Conclusion and recommendations

This paper has explored the outcomes of an audit reporting on the provision of a new service designed to meet the needs of antenatal women requiring hospital admission. Overall the data demonstrate the potential of the new DSAU in decreasing delivery suite workloads and increasing user satisfaction. This latter

aspect is particularly important in an increasingly consumer orientated health service (Davis, 2003). Indeed, the importance of undertaking user satisfaction research has been highlighted when introducing new systems of care (Ament, 1999). In this audit initial data demonstrated high levels of satisfaction with the service. However as the data collection tool was a closed response questionnaire, a more in-depth exploration is required to fully analyse women's experiences of the triage service. Some areas requiring further investigation were omitted from the survey. These included the impact of admission to the DSAU on continuity of care in labour and a comparison of the quality of telephone triage to face to face assessment. This last point has been highlighted as an important area for further research (McKinstry and Sheikh, 2006).

In addition research is needed to examine the midwives' responsibility and skills in triage, the effectiveness of this process and midwives' perceptions of their role. It would also be interesting to explore exactly how midwives reach diagnostic decisions in relation to their triage role. This, together with current DSAU documentation, may contribute to the development of a triage risk assessment tool, which would ensure consistency in the process. Such a tool would assist students and newly qualified midwives in developing triage skills. This was one of the recommendations from the audit team. Ongoing audit will provide a valuable contribution to evaluating the effectiveness of the triage service. A new strand should be added to the audit to explore the clinical outcomes of women who have either been triaged over the phone or who attended the unit and were discharged home. This would add to the body of knowledge around midwives' triage skills

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