Recording labour: a national survey of partogram use

By Tina Lavender, Ediri Tsekiri and Lisa Baker

The partogram is a tool (usually paper) that enables midwives and obstetricians to record maternal and fetal observations simply and pictorially. The first obstetrician to provide a tool for recording individual labours was Friedman (Friedman, 1954) following his study of the cervical dilatation of 100 African primigravidae at term; this became known as the cervicograph. In an attempt to employ midwives and assistants extensively in a hospital in Zimbabwe, where doctors were in short supply, Philpott (1972) developed a partogram from this original cervicograph. This provided a tool for recording all intrapartum details, not just cervical dilatation. An 'alert line' was added following the results of a prospective study of 624 women (Philpott and Castle, 1972a), which was a modification of the mean rate of cervical dilatation of the slowest 10% of primigravid women who were in the active phase of labour. This line represented a progress rate of 1 cm per hour. The next stage of partogram development was the introduction of an 'action line', four hours to the right of the alert line (Philpott and Castle, 1972b). This line was developed on the premise that correction of primary inefficient uterine action would lead to a vaginal birth.

There is some evidence to suggest that midwives find the partogram beneficial in terms of ease of use, time resourcefulness, continuity of care and educational assistance (Lavender and Malcolmson, 1999). These positive aspects may contribute to improving maternal and fetal outcomes. On the other hand it has also been reported that the status of the partogram within some maternity units is such that they may restrict clinical practice, reduce midwife autonomy and limit the flexibility to treat each woman as an individual (Lavender and Malcolmson, 1999), factors which could also impact on clinical and psychological outcomes.

Different designs of partogram exist and Cartmill and Thornton (1992) hypothesized that the way a partogram is presented may affect a midwife's or obstetrician's perception of the labour progress and thus influence decision making. This hypothesis has received some support from others (Lavender et al, 1998; Tay and Yong, 1996).

Although the World Health Organisation (1994) recommended universal application of the partogram, the evidence to support this recommendation is limited. Furthermore there is insufficient evidence to inform practitioners of what such a partogram should look like in terms of what information should be recorded. We therefore conducted a scoping exercise to determine current practice regarding partogram use.

Aims

The aims were as follows:

- To describe the extent of partogram use in different

Abstract

There is little consensus regarding the use of partograms and labour charts in the western world. As a consequence there are variations in practices within and between units. Prior to implementation of the National Institute for Clinical Excellence (NICE) Intrapartum Care Guidelines we conducted a survey of all Heads of Midwifery exploring the current status of labour documentation across England. This enabled a baseline of current practice to be established and offers insight into disparities. The results indicated general support for the partogram, although some units chose not to use it for certain women. There was some consistency in recorded quantifiable details, although most charts lacked any psychological data. A minority of units had pre-printed alert or action lines although often the associated guidelines were similar. Few units provided evidence to support their particular guidelines. Awareness of national variations in partogram use highlighted useful variations in partogram designs which may assist midwives in their own practice. Units should re-evaluate their own charts in line with the recommendations of the National Intrapartum Care Guidelines.

birth settings

- To reveal partogram use in relation to different populations
- To discover what evidence has influenced labour charts/partograms
- To describe the specific clinical and non-clinical details incorporated on the various charts.

It was envisaged that this information, when collated, would provide midwives and obstetricians with a foundation of useful facts from which appropriate labour documentation may be developed.

Method

Sample

The sample was all Heads of Midwifery in England. The sample was identified by the Nursing and Midwifery Council and cross-checked with Regional Supervisors of Midwives.

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‘The partogram is now entrenched in our practice and used without question...’

Data collection

A specifically designed baseline questionnaire was distributed to all Heads of Midwifery in England. Questionnaires were postal and included a stamped self-addressed envelope for return. The questionnaire included only closed questions, at the end of which a request was made to provide contact details of an appropriate senior midwife, who would be contacted for further information. An accompanying letter requested that the partogram (or labour chart) and any associated guidelines be returned with the questionnaire. One reminder was sent to promote a healthy response rate. Data was entered on SPSS (version 13.1) for descriptive analyses and presentation.

Results

Of 178 units, 126 returned the completed survey providing a response rate of 71%. The geographical locations of the units were mostly urban (37% $n=47$) or a combination of urban and rural locations (42% $n=53$). Most units were District General Hospitals (82% $n=104$) and fifty-two units (42%) were university teaching hospitals. The size of the unit was categorized by the number of births per annum: <3,000 births (51% $n=64$); 3–5 000 births (42% $n=53$); >5 000 births (7% $n=9$).

Figure 1 demonstrates that a partogram is used across the majority of birth place settings. Only 11 birth place settings do not record progress of labour on a partogram (1 high risk unit; 2 low risk units; 2 integrated midwife-led units (MLU's); 3 free-standing MLUs and 3 homebirth settings). Only 7 birth settings (9%) used a different partogram for multiparous and primiparous women. No two partograms contained identical details.

Units were requested to forward a copy of the partogram

that they used along with any written guidelines, if available, when they returned the questionnaire. In total 62% ($n=78$) returned their partogram and 34% ($n=43$) returned their written guidelines.

The median number of hours recorded on the partograms was 24 (range from 10 to 27 hours). Only 13 of the units indicated that lines were used; 6 used alert lines only, 1 used an action line only and 6 used alert and action lines. Five partograms included an identified latent phase. The start of active labour, as defined in the guidelines, was 3 cm dilated ($n=18$) or 4 cm dilated ($n=5$); most did not state how the start of active labour was defined ($n=55$). Rate of progress was usually not stated ($n=54$) but those that did, stated normal progress as 1/2 cm an hour ($n=8$) or 1 cm an hour ($n=16$).

A wide variety of formats of partograms were seen, many containing common information as can be seen in Figure 2. However some partograms had unique factors. Figure 2 demonstrates that current partograms are designed to record outcome measures which are likely to identify complications, for example, blood pressure, urinalysis and temperature. However few are designed to alert or prevent such outcomes, for example, oral fluid intake, colour of liquor, station of the presenting part, strength of contractions and emotional state.

Some details were infrequently seen on partograms such as:

- Maternal mobility
- Position of presenting part
- Diamorphine observations (pain, respirations and sedation)
- Duration and relaxation of contractions
- Vomiting
- Ability to cope with pain
- Use of intra-uterine pressure catheter
- Recording of four reassuring fetal heart factors (rate, accelerations, decelerations, variability)

Some units used colour coordination for a variety of factors and one partogram was carbonated for midwifery audit purposes.

Conclusion

This national survey demonstrated a wide variation in practice. This is unsurprising given that there is lack of evidence to support current practice. There are currently only two randomized controlled trials that have published data comparing partogram with no partogram (Windrim et al, 2006; Walss-Rodriguez et al, 1987). The Canadian study (Windrim et al, 2006), which was the stronger of the two in terms of methodological quality, found no benefit in terms of maternal and neonatal outcomes when the partogram was introduced. Despite the lack of prospective evidence, most units in our survey use a partogram. This may be, as suggested by us in a previous study, that partograms are useful for practitioners (Lavender and Malcolmson, 1999) rather than a tool that may improve maternal and fetal outcomes. Alternatively, as the partogram was introduced in the UK at a time when an evidence based culture did not prevail, it was accepted uncritically. The partogram is now entrenched in our practice and used without question; a factor that

Figure 1. Birth place options and the use of partograms.

Figure 2. Information recorded on partograms (n=78)

has previously been identified in Australia (Groeschel and Glover, 2001). Of the 11 settings which chose not to use a partogram, 10 were considered 'low risk.' Given the origins of the partogram this is surprising; the partogram was introduced to observe straightforward labours and to ensure timely recognition of problems and early identification of women who need to be transferred from low to high risk care. Therefore it is the units that the partogram was designed to help that are not using it.

Unfortunately the number of units that provided their actual partogram and/or the associated guidelines was limited. However cross-sections of replies were received from across England and from different types and sizes of units. As such, a number of useful recommendations can be made. If partograms are to be used they should be re-evaluated in light of the Intrapartum Care Guidelines (NICE, 2007) and amended accordingly. For example, the NICE guidelines state that while the length of established labour varies between women, it is unlikely to last over 18 hours for first labours and 12 hours for second and subsequent labours. However, many of the partograms in this survey did not have space to record labour details for that amount of time. Additionally NICE recommends that a partogram should only be used in established labour

(regular, painful contractions and progressive cervical dilatation from 4 cm). However our survey showed that some partograms (n=5) included a latent phase and only 5 units used a working definition of 4 cm and above for diagnosing established labour.

Furthermore NICE (2007) recommends that in order to diagnose delay in first stage of labour, the following aspects need to be considered:

- Rate of cervical dilatation
- Descent and rotation of the fetal head
- Changes in the strength, duration and frequency of uterine contractions.

However, interestingly, many of the partograms did not record such basic details. A further consideration is whether different partograms should be used according to parity. Only a minority of units did this, despite guidelines acknowledging the likely differences in progress.

The Intrapartum Care Guidelines (NICE, 2007) suggest that, in the absence of further evidence, a four-hour action line partogram is a reasonable option for practice. Only a minority of units used alert and/or action lines. However some guidelines provided suggest that midwives draw lines on their charts or imagine 'hypothetical lines' based on their recommended rate of progress. Furthermore some guidelines dictated progress rates and timing of intervention that was consistent with the WHO (1994) alert and action lines.

Following implementation of the Intrapartum Care Guidelines (NICE, 2007) it would be useful to repeat this survey to describe changes in practice. However, more importantly, empirical research is required to determine whether a partogram is a necessary tool in labour and, if so, what it should look like.

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Key Points

- Partograms, in various formats, are used throughout England, regardless of birth setting or geographical location.
- The fact that no two partograms were the same is indicative of the lack of evidence on which to inform practice.
- Units should re-evaluate their own partogram, in line with the NICE Intrapartum Care Guidelines, until further evidence is available.

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