

# Working with Birthrate Plus®

How this midwifery workforce planning tool can give you assurance about quality and safety



*The Royal College of*  
**Midwives**

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Every NHS Trust must decide for itself how best to staff its maternity service taking into consideration the needs of women, local geography and patterns of care. Every Chief Executive must be able to assure the trust Board that staffing levels are adequate to provide safe high quality services that maximise productivity and efficiency.

In England the CNO's Compassion in Practice strategy includes 'ensuring we have the right staff, with the right skills in the right place'. It recommends that Boards sign off and publish evidence based staffing levels at least every six months, providing assurance regarding the impact on quality and experience of care. Heads of Midwifery and Directors of Nursing should agree appropriate staffing levels through the application of evidence based tools such as Birthrate Plus®. All nursing and midwifery staffing levels and quality experience metrics should be discussed at public board meetings.

Birthrate Plus® is currently the only midwifery specific, national tool that gives the intelligence and insights needed to be able to model midwifery numbers, skill mix and deployment and to inform decision making about safe and sustainable services. Based in a sound evidence base, more than 20 years of application and used by over 100 Trusts I believe Birth Rate Plus® is a valuable resource that can routinely support operational and strategic decision making in maternity.

## WORKING WITH BIRTHRATE PLUS®

### *A USER'S MANUAL*

#### Introduction

Birthrate Plus® is the only national tool available for calculating midwifery staffing levels. It is based on data that has been collected over many years and has been used by the Royal College of Midwives (RCM) to argue for adequate national and local midwifery staffing ratios. By working with individual trusts to understand their activity, case mix, demographics and skill mix Birthrate Plus® can calculate an individual ratio of clinical midwives to births for maternity services. Birthrate Plus® ratios give a good starting point to understanding the needs of any given service and to comparing its staffing, skill mix and models of care with neighbours or units of similar size. However, the way Birthrate Plus® works and the difference between a national ratio and the need for local ratios calculated on the basis of specific local circumstances is often misunderstood.

This guidance has been produced by Jean A Ball and Marie Washbrook in collaboration with the RCM to clarify the issues and to ensure optimum use of this valuable tool. The guidance is designed to be of assistance to:

- **Workforce Planners & Commissioners of Student Midwives**
- **Commissioners of Maternity Services**
- **Trust Board Members and Executive Directors**
- **Senior Midwifery Staff**
- **RCM Stewards**

## Contents

Section Number	Page	Title	Content
Section 1	10	The development of Birthrate Plus®	A brief overview of the development of Birthrate Plus® indicating how the tool changed in 2006 in recognition of the fact that women may receive care antenatally and/or postnatally from a Trust other than that in which they deliver. This means that workforce calculations must be based on total activity not just births.
Section 2	15	The Birthrate Plus® Methodology	Describes how to undertake a detailed local assessment of staffing needs. Such an exercise requires data collection of maternity activity over a 4-6 month period.
Section 3	27	Developing Tools for Strategic Planning	Describes how the data generated from detailed local work has established generic ratios which can be applied to hospital and community workloads in a 'top down' approach. These ratios can be used at a strategic planning level to calculate midwifery numbers based on projected births.
Section 4	37	Applying skill mix in maternity services	Introduces the concept of skill mix and outlines the principles to be followed when support workers are included in the skill mix.
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Section 7	53	Using differentiated ratios and the Intrapartum Acuity Tool	Describes how to use differentiated ratios with the Intrapartum Acuity tool in order to provide a complementary picture of both overall staffing need and managing peaks and troughs of activity on labour ward.
Section 8	56	Using Birthrate Plus® in the day to day management of maternity services	Provides advice and guidance on how Birthrate Plus® can give managers and Trust Boards assurance about appropriately balancing the unpredictable nature of maternity care with the numbers of available staff.

## Key points

- Birthrate Plus® measures the workload for midwives arising from the needs of women starting from the initial contact in pregnancy until final discharge from midwifery care in the puerperium.
- Throughout this document the terminology used is as in Birthplace in England<sup>1</sup> i.e. obstetric unit (OU), alongside midwifery unit (AMU), freestanding midwifery unit (FMU) and homebirth.
- AMUs and FMUs are treated differently in terms of applying ratios. This is because AMUs are generally more similar to OUs with women receiving antenatal and postnatal care in areas other than the labour ward whereas in FMUs women receive care in a more holistic fashion akin to homebirth.
- Birthrate Plus® can be used in three ways:
  - i. At a national/regional level using agreed average ratios of births to midwives to guide decision making about the total number of midwives required to deliver total maternity services across a given geography.
  - ii. At the level of individual Trusts to provide detailed local calculations of workload need based on the needs of the resident population.
  - iii. At a local level, using aggregated data but factoring in individual variations in clinical profile, cross border flows and models of care and calculating differential staffing needs across different care settings. This approach to workforce planning is a simpler and quicker one than in (ii) whilst remaining robust.
- **It is based on an understanding of the time required to care for women. Using NICE guidance and available evidence and best practice, Birthrate Plus® calculates how many midwives would be required to meet the needs of women including:**
  - All antenatal and postnatal care, including parent education.
  - Antenatal outpatient activity, including clinics and day units.
  - Antenatal inpatient activity and ward attenders.
  - Delivery in all settings, depending on type of birth (including inductions, escorted transfers and non-registered births).
  - All postnatal care in hospital including readmissions and ward attenders, transitional care and the neonatal examination of the newborn.

<sup>1</sup> Hollowel J. Birthplace programme overview: background, component studies and summary of findings. Birthplace in England research programme. Final Report part 1. NIHR Service Delivery and Organisation programme; 2011.

- **A composite workforce figure includes:**
  - i. Numbers of midwives required for hospital and community workloads, taking into account additional midwives needed for births at home and in FMUs.
  - ii. A percentage addition for sickness, study and leave allowances, plus the supervision of midwives. There is no standardised percentage recommended by Birthrate Plus® however, benchmarking suggests a range of between 17.5 - 25% is normal.
  - iii. An adjustment for skill mix.
- **Birthrate Plus® makes a distinction between midwives who provide direct clinical care and those employed in management, development and governance roles, essential to the safe running of the service but not directly involved in clinical care of women. The Birthrate Plus® ratio is based only on clinical staff and therefore excludes:**
  - Midwifery management in non-clinical roles. Individual organisations will determine their own level depending on the corporate arrangements within the trust.
  - Clinical governance and audit midwives in non-clinical roles.
  - The percentage of time of each specialist and consultant midwife's time not spent in direct care (as with management time, this will vary from individual to individual).
- **Aggregated data currently suggest the following ratios can be used if a national 'top down' approach is needed:**
  - A mean national ratio of 29.5 births per whole time equivalent (wte) midwives for hospital and AMU births.
  - A mean national ratio of 35 births per wte midwives for FMUs and homebirths.
- **Aggregated data currently suggest the following ratios can be used to build up an average staffing profile for an individual service:**
  - For hospital birth activity only:
    - » **Tertiary services: 38 births per wte midwife.**
    - » **DGH with > 50% in category IV and V: 42 births per wte midwife.**
    - » **DGH with < 50% in category IV and V\*: 45 births per wte midwife.**
    - » **Homebirths and MLUs: 35 births per wte midwife.**
  - For community services activity only (not involving birth):
    - » **96 births (cases) per wte midwife.**
  - The additional percentage suggested for additional midwifery roles not giving clinical care is:
    - » **Tertiary services 10%.**
    - » **All other units 8%.**

\*For a definition of all categories see page 11.

- **Birthrate Plus® recognises that not all of the clinical work in maternity needs to be undertaken by midwives and that by enriching skill mix to include maternity support workers (MSWs), nursery nurses, general nurses and others, midwifery time and expertise can be better focused and targeted. Individual units will make their own judgement about the proportion of midwifery time that can safely be replaced by other roles, but Birthrate Plus® currently recommends factoring up to 10% of appropriately trained and competent MSWs working predominantly in hospital postnatal care. Thus if the Birthrate Plus® calculation concludes 100 clinical midwives are required, it is acceptable to employ 90 clinical midwives and 10 other appropriately trained and competent staff.**
  - The suggested skill mix adjustment is 90:10 for clinical support staff who replace midwifery hours.
  - Support staff who assist midwives but do not provide direct care e.g. clerical staff and housekeepers should not be included in this ratio.

## Working with Birthrate Plus® results

- **The detailed analysis that sits behind Birthrate Plus® ratios indicates where, for any given service, its staffing challenges may lie. For example units which have poorly developed skill mix may not require additional midwifery staff but the incorporation of MSW roles to support midwives.**
- **Where staffing levels are significantly different to Birthrate Plus® recommendations it is advisable to seek assurance about the sustainability of service quality including:**
  - The number of women receiving one to one care in labour. This is proven to lead to improved outcomes and reduced interventions in labour.
  - The number of women booked before the completed 13th week of pregnancy. Early booking is associated with early identification of risk and appropriate care planning, including referral to other support services and medical expertise.
  - Availability of continuity of carer during antenatal and postnatal care. Minimising the number of different midwives that women see routinely during their pregnancy and after the birth leads to consistent advice and better uptake of important public health interventions.
  - Availability of a supernumerary ward coordinator as recommended by best practice, to oversee safety on delivery suites. This is an experienced midwife available to provide advice, support and guidance to clinical staff and able to manage activity and workload through the labour ward.
  - Specialist roles such as safeguarding lead, breastfeeding advisor, governance and audit midwives do not provide direct clinical care but provide the underpinning to a safe service, ensure all pathways and protocols are up to date and complied with and have relationships with other agencies that protect maternal and child welfare.
  - Consultant midwives, practice development midwives and midwife educators keep local policies, protocols and practice under constant review, are the focus for innovating and developing both services and individual staff.
  - Levels of vacancy and turnover as retention, staff morale and sickness levels are all known to be adversely effected when there are insufficient staff.

## WORKING WITH BIRTHRATE PLUS®

### *Section 1: BRIEF OVERVIEW OF THE DEVELOPMENT OF BIRTHRATE PLUS® FROM 1986 TO THE PRESENT DAY*

#### I. The origin of Birthrate Plus®

The Short Report (1980) first highlighted the need for women to receive one to one care from a midwife throughout labour (recommendation 103). This standard of intrapartum care has been repeated in numerous reports since that date.

The Short Report also recommended that workload related norms be introduced to reveal “staffing deficiencies in midwifery staffing” (recommendation 68).

Midwifery staffing establishments were largely historical, having grown up over time irrespective of changes in demand or patterns of work for midwives. It was to meet the need for a workforce planning system relevant to midwifery care that Birthrate Plus® was created.

#### II. What does Birthrate Plus® Workforce Planning and Decision Making Methodology produce?

- Birthrate Plus® measures the workload for midwives arising from the needs of women starting with the initial contact in pregnancy until final discharge from midwifery care in the puerperium.
- Identifies patterns of work and thus enables managers to review the most effective use of staffing resources.
- Calculates the number of wte hospital and community midwives required to match the workload and provide an agreed quality of midwifery care.

#### III. How is the demand for midwife care measured and defined?

##### a. Intrapartum Care: Developing the Birthrate Plus® Intrapartum Classification system

###### i. Outcome measures:

It was found that the usual records of processes and outcomes were not appropriate e.g. normal delivery, forceps, caesarean, epidural etc. because (a)

they record the outcomes or processes separately; and (b) in terms of midwifery workload a woman may achieve a normal delivery after 6 or 16 hours of labour, she may have needed epidural and episiotomy or intravenous infusion or she may have needed none of these. Another issue was the condition of the infant at birth and whether or not there were any post-delivery emergencies.

Therefore a classification system was designed which accounts for a composite of key clinical factors of process and outcome, and provides a retrospective scoring system which allocates mother and baby into one of five outcome categories.

Details of this are contained in Appendix 1. Table 1 summarises these categories.

Category	Process/Outcome indicators
Category I	This is the most normal and healthy outcome possible. A woman is defined as Category I [ <i>lowest level of dependency</i> ] if: The woman's pregnancy is of 37 weeks gestation or more, she is in labour for 8 hours or less; she achieves a normal delivery with an intact perineum; her baby has an Apgar score of 8+; and weighs more than 2.5kg; and she does not require or receive any further treatment and/or monitoring.
Category II	This is also a normal outcome, very similar to Category I, but usually with a perineal tear [score 2], or a length of labour of more than 8 hours [score 2]. IV Infusion [score 2] may also fall into this category if no other intervention.
Category III	Moderate risk/need such as Induction of Labour with Syntocinon, instrumental deliveries will fall into this category, as may continuous fetal monitoring. Women having an instrumental delivery with an epidural, and/or Syntocinon will become a Category IV.
Category IV	More complicated cases affecting mother and/or baby will be in this category, such as elective caesarean section; pre-term births; low Apgar and birth weight. Women having epidural for pain relief and a normal delivery will also be Category IV, as will those having a straightforward instrumental delivery.
Category V	This score is reached when the mother and/or baby require a very high degree of support or intervention, such as, emergency section, associated medical problem such as diabetes, stillbirth or multiple pregnancy, as well as unexpected intensive care needs post-delivery. Some women who require emergency anaesthetic for retained placenta or suture of third degree tear may be in this category.

ii. Midwife time to meet defined needs:

Based upon the principle of one to one care, the measure of midwife time needed to care for the women and infant(s) in each category was based upon the length of time each woman spent in the delivery suite from the onset of established labour until transfer to postnatal care. Increased ratios of care were then allocated to women who ended up in the higher need categories of III – V.

iii. Other workload in the delivery suite:

Birthrate Plus® studies identified a significant volume of activity in the delivery suite, much of which was generally overlooked or not recorded before the Birthrate Plus® data was collected. This activity arose from the admission of women who needed some attention, but did not give birth during this episode of care. This activity includes women who usually self-admit with some signs of labour but do not progress further (category X), women in need of emergency antenatal care and generally unplanned care (categories A1 and A2), women readmitted for treatment after giving birth (category R\*), and women who need to be transferred to other hospitals either pre or post-delivery with midwife escort.

The birth outcome category (I – V) provided a basis for assessing midwife hours and length of stay for postnatal care in hospital and for the subsequent community midwife care.

**b. Other hospital services**

Other aspects of work in hospital such as antenatal clinics and admissions to the antenatal ward along with ward attenders, or where midwives are undertaking the neonatal examination of the newborn etc., were measured by agreed hours per unit of care determined by the “expert group” approach. This allowed for variation in care policies in different services.

**c. Community midwives and home births**

A similar approach was taken to assessing community midwife hours for antenatal and postnatal care for women who gave birth in hospital or at home. An assessment of the hours needed for intrapartum care for home births included the possibility of a second midwife being present at the birth and the immediate follow-up visit after the birth. An allowance was also incorporated to allow for the time spent by community midwives in travelling between their clients and some variation allowed for those working in widespread rural areas.

#### IV. Issues raised as a result of using Birthrate Plus® Methodology within the NHS which impact on local needs and strategic planning.

As NHS Trusts began to use Birthrate Plus® to assess staffing needs, a number of issues were found which impacted upon local (and later strategic) planning for the midwifery workforce.

##### a. Variation in the work of community midwives: impact of cross border activities on both community and hospital services staffing needs

Community midwives are employed by one NHS Trust, but they provide care for women in their catchment area irrespective of where those women give birth. This means that the workload of community midwives includes women who do not appear in the birth figures for the hospital. "Cross border" activity has two significant implications:

- a. Cross border exports; the hospital may have a significant percentage of women giving birth within it, who do not receive community care from local midwives. This affects the total number of midwives required by the service provider. The degree of cross border exports varies considerably but in some instances this has been as high as 50% of total births.
- b. Cross border imports; this term is given to those women who give birth in one service provider but receive their antenatal and postnatal care from local community midwives. In some instances the numbers of midwives required for this "imported" work has required extra 10-20 wte midwives.

The reasons for these patterns vary. In tertiary units a number are due to client medical or obstetric need, in others it is due to women having the choice of several nearby maternity units.

**The outcome is that producing a ratio of births per wte midwife solely on the basis of the numbers of local hospital births does not reflect the total workload.**

##### b. Analysing data to predict possible distinctive staffing ratios

The data gathered from a wide range of maternity services were entered into a database and analysed to identify some of the issues which affect future planning.

\*For a definition of all categories see page 18.

Ratios of births per wte midwife had been produced for national planning (Ball 2003) for hospital and home births which did not take note of local issues such as the cross border activity noted above.

In view of that situation and the wide variation at local service level from 2006 onwards, distinctive ratios of a) hospital births to wte midwives and b) number of cases per community midwife have been produced based upon their total workload.

These ratios, which are reviewed regularly, have now been successfully used by Health Authorities/Boards to assess the needs of the various NHS Trusts within their region and are discussed further in Section 3.

### V. Continuing review and further development of methodology

Working with NHS Regions and Primary Care Trusts and with midwifery colleagues at all levels has enabled Birthrate Plus® to be refined in accordance with changes in care patterns arising from NICE guidelines and other reports.

More recently, there has been the development of a real time clinical assessment tool within a delivery suite. This is an adaptation of the classification system to enable managers to assess the numbers of midwives required to meet the measured demand within the delivery suite.

## WORKING WITH BIRTHRATE PLUS®

### *Section 2: THE BIRTHRATE PLUS® METHOD*

This section focuses on the use of the Birthrate Plus® Workforce Planning and Decision Making Methodology in determining staffing needs based upon local patterns of care.

#### I. Principles underpinning the Birthrate Plus® Workforce Planning and Decision Making Methodology

Workforce planning systems often focus upon the activity of staff in relation to the needs of clients. This requires time consuming activity analysis and often begs the question of whether the activity being measured is meeting the needs of patients at a satisfactory level of care. Some systems have sought to overcome this issue by combining activity analysis with concurrent assessment of the standards of care being provided. A review of nursing workload systems can be found in Hurst (2003).

The method for Birthrate Plus® was founded upon the principle of one to one care for women during labour and thus focuses upon what women need rather than the activity of midwives, and makes allowances for different degrees of need related to the events of the labour and delivery.

#### II. Measure of the needs of individual women during labour and delivery: the Clinical Indicator Method.

- a. **The scoring system:** In order to fully reflect the varying needs and events of labour and delivery a clinical classification system was designed which records normal processes of labour and delivery and interventions. As stated in Section 1, the usual outcome measures of normal delivery; instrumental; caesarean section etc. do not fully reflect the needs of women during labour or events which may occur and may need rapid intervention and the need at times for more than one midwife.
- b. **The clinical indicator score system** is designed to be objective and can be readily validated by comparison with clinical records.

- c. Scores of 1, 2, 3 or 5 are given to each clinical indicator which reflects the degree of need identified by the indicator. For example; a woman may have had a fairly normal labour, but then needs a forceps delivery and the baby may need some resuscitation. A score of 5 indicates a major issue, such as blood transfusions irrespective of the event producing the need for same, or a general anaesthetic, or a stillbirth. The scores for each section of labour; admission and labour, the birth, the health of the infant(s) and any emergency post-delivery care are then added to produce a total score which determines the outcome category. Categories I and II reflect normal labour as an outcome whilst categories III, IV and V reflect a variety of events which increase the need for midwifery and obstetric care.
- d. A score sheet is completed for each woman at the end of labour as part of the completion of records before the woman and baby leave for postnatal care. This includes the Birthrate Plus® outcome category and the length of time spent within the delivery suite.

*Details of the scoring system for intrapartum care and for other workload in the delivery suite can be found in Appendix 1 at the end of this section.*

### III. Measure of midwife time for intrapartum care for each woman

The amount of midwife time needed to provide one to one care is produced by recording the total time the woman and baby are being cared for in the delivery suite, from the onset of established labour until discharge to postnatal care either in the hospital or at home. This measure of time needed covers all the direct and indirect care of the woman, her baby and partner, administration, liaising as needed with other midwifery or medical colleagues and completing all necessary paperwork.

#### **Increased ratios of midwife time for women in the higher need Categories III-V**

Women with complex health needs will require the care of more than 1 midwife during their labour. Whilst this may vary from case to case the Birthrate Plus® methodology applies increased ratios of midwife time as follows: Category III has the ratio of 1.2 midwives per woman; Category IV has a ratio of 1.3 and Category V has a ratio of 1.4. These increased ratios reflect the work of other senior midwives within the delivery suite plus the shift co-ordinator.

The effect of these additional ratios can be seen in the table below. It is based upon a sample of women who each spent eight hours from onset of labour to discharge but were in higher need groups. Data collected from different hospital services have shown a consistency of hours per category and provided an extra assurance of the validity of the system over time.

**Please note:** *this is an illustration only as women in the higher need groups generally spend longer than eight hours in the delivery suite and women in lower needs groups spend less.*

Woman	Birthrate Plus® category	Hours in delivery suite	Ratio of midwife time	Total midwife time allocated
A	I	8	1.0	8.0
B	II	8	1.0	8.0
C	III	8	1.2	9.6
D	IV	8	1.3	10.4
E	V	8	1.4	11.2

**Please note:** *the figures in the ratio column do not indicate a whole time equivalent midwife. This has been a misunderstanding in the past and erroneously quoted in some documents. The above hours are just to illustrate the method and do not reflect actual hours produced from data collection.*

#### IV. Collecting data to produce the case-mix and mean midwife time needed per outcome category

The collection of intrapartum and other related data activity is undertaken for 4/6 months in order to cover the fluctuation over time of admissions and births. This includes time for the midwives to become familiar with the Birthrate Plus® system and for regular reliability and validity checks to be carried out.

Recording the categories provides the maternity service with a detailed case-mix which is useful when reviews of planning or policy are needed or when projecting future changes. These records form the basis for assessing staffing needs and examples are shown over.

### Case mix and mean hours per category from a typical maternity service with 4275 births per annum.

Total births	%Category I	%Category II	% Category III	%Category IV	%Category V	Total
4275	15.7	27.8	10.4	25.1	21.0	100%
Mean hours in labour per category	6.3	7.8	15.1 X 1.2	17.7 X 1.3	20.3 X 1.4	
Mean hours + ratio for higher need categories	6.3	7.8	18.12	23.01	28.42	

A formula is then applied which adds further allowances to allow for fluctuation of workload within a delivery suite, and for management and organisation of staff. The local allowance for annual leave, study and sick leave as decided by each Health Trust is then added, and will vary from 17.5% to 25%.

### Other workload in the delivery suite

A similar approach is taken to calculating the numbers of midwives needed to care for the other women who need care in the delivery suite. Where and how this activity is managed does vary between individual services, but is classed as intrapartum workload. The work of Birthrate Plus® first identified the large amount of work flowing through delivery suites in addition to the care of women in labour (Ball and Washbrook 1996).

Details of the classification can be found in the Appendix 2 but briefly they consist of;

Category X	Women presenting and staying on labour ward NOT in established labour
Category A1 and A2	Women who need varying degrees of assurance and monitoring
Category R	Women who are readmitted post delivery for additional assessment and/or procedures
Prostins/Propess	Women being monitored on the labour ward after induction but who are not yet in established labour
Transfers	Accounting for the midwifery time involved in transferring a woman to another maternity service, usually in an emergency

This table indicates the likely frequency of this activity within an average sized maternity unit and the additional midwifery time required to care for each woman presenting.

Total births	Category X	Category A1	Category A2	Category R	Prostins/proposs	Escorted transfers out
4275	5235	475	120	65	1400	25
Mean hours per woman	1.0	4.0	15.0	6.0	2.5	8.0

## V. Assessing staffing needs in all other aspects of midwifery care

This is achieved by recording midwifery workload in both hospital and community over the same length of time as the intrapartum analysis and applying agreed hours of midwife time for each area based upon the Expert Group approach.

It includes the following:

- **For hospital services: antenatal clinics, antenatal admissions, women attending triage and day care services, ward attenders and those receiving different lengths of postnatal care.**
- **For community care: antenatal care including the initial screening and booking for place of birth, parent education, postnatal care depending upon the length of hospital stay after delivery and all aspects of care for women having a home birth.**

## VI. Using Expert Group/Professional Judgement to assess workload and staffing in other areas of hospital services and for community midwifery

One method of assessing ward or clinic based staffing needs is that of activity analysis studies. This is a very expensive and time consuming process as it needs to be pursued for a considerable time to obtain results and is more suited to medical ward patterns. Another approach is that of using the Expert Group/Professional Judgement approach. (See Hurst 1993)

Expert Group/Professional Judgement has its place within all workforce systems and uses assessment of staff needs by local and more widespread expertise and consultation together with recommendations produced by the Royal Colleges, Government reports and N.I.C.E. guidelines. This has proved to be a strength, as it has harnessed the expertise of

numerous midwives in collaboration with Birthrate Plus® in determining agreed hours for different aspects of care which were then applied in workforce planning studies and found to be acceptable and effective.

One advantage was that the Birthrate intrapartum categories proved to be valid indicators of the degree and length of postnatal care needed in hospital and the follow up care in the community services. The categories for other work in the delivery suite provided a similar basis for indicating antenatal care needs.

Using the Expert Group/Professional Judgement approach made it possible to deal with changes in practice arising from:

- **Responding to the reduction in length of stay in hospital and consequent impact on community services.**
- **Increasing community midwife hours for antenatal care in line with NICE guidelines where they undertake the first interview which includes screening procedures and booking for maternity care.**
- **Assessing the time needed when suitably trained midwives undertake the neonatal examination of the newborn previously undertaken by junior paediatricians.**

## VII. Workload for community midwives

Community midwives provide antenatal and postnatal care for all women in their catchment who give birth in hospital together with all the care needed for women who choose to have home births. Community midwives have an important public health role; they may run specialist clinics/education for teenage or other vulnerable clients; have a vital role in safeguarding and are often involved in case conferences. In view of these varying demands an overall allowance of midwife hours for the different aspects of their work has been agreed and updated as needed by the Expert Group/Professional Judgement approach to assessing staffing needs. *Details of these agreed hours are listed under Parameters in Appendix 3*

1. **Care for women who give birth in hospital.** In most services the community midwife is the first contact made by a woman with the maternity services. The community midwife undertakes the detailed initial assessment and screening of the woman and then undertakes regular antenatal care based upon NICE guidelines and the subsequent

postnatal care once the baby is born. The midwife hours for this work are based upon an agreed allowance of midwife hours for antenatal care, postnatal care which depends upon the birth outcome category and length of hospital stay. This allows for the considerable flexibility which a community midwife needs as she cares for women with varying obstetric and social needs.

2. **Home Births.** The staffing hours for home births are based upon the agreed hours for antenatal care as noted above, a further allowance for intrapartum care which includes the presence of a second midwife at the birth and the first follow up visit, and the continuing postnatal care of the mother and baby. This also allows for time needed if the woman needs to be admitted to hospital with the midwife escorting her.
3. **Geographical issues for community midwives.** Community midwives spend considerable time travelling between their base, various clinics and the homes of their clients. They may be based within a compact urban area or a more widespread rural area or some combination of these two. Accordingly an allowance of between 15 -20% is added to the hours based upon their caseload and depending on the area within which they are working.
4. **Dilemma of cross border activity.** As noted in the Section 1, community midwives provide care for all women in their catchment area irrespective of whether the woman chooses to give birth in her local hospital or a neighbouring Trust. Cross border activity has an impact on the total number of staff needed by the service provider. Women who give birth in a different hospital (imports) may amount to significant numbers and must be allowed for when calculating community staffing numbers. Similarly where numbers of women give birth locally but come from another Trust (exports), the local services do not provide the community care for their annual births.

This creates a dilemma when planners wish to use one generic ratio for calculating the numbers of midwives for their total births per annum. It is for this reason that Birthrate Plus® differentiates between the ratios required for planning of hospital services only (based upon total births) and the community service (based upon the numbers of women within the community midwives' caseloads).

These issues are discussed further in Section 3.

## VIII. How to obtain further information and advice

Information is available on the Birthrate Plus® website – [www.birthrateplus.co.uk](http://www.birthrateplus.co.uk)  
Further advice and support to undertake a Birthrate Plus® review is available from the Birthrate Plus® authors.

### *Appendices*

*Appendix 1 – Score sheet*

*Appendix 2 – Categories of the delivery activity*

*Appendix 3 – Expert assessment of time in antenatal/postnatal activity*

*Appendix 1 – Score sheet*

SCORE SHEET 2		OTHER CATEGORIES	
Please use this form for all other cases as defined below			
Mothers details	Date In	Date out	
	Time in	Time out	TOTAL TIME
For all the cases below, please tick relevant category			
<b>CATEGORY X</b>			
A woman who is seen on labour ward, often self-referral, needs assessment and reassurance, may need monitoring for short time but is not in labour, and is sent home or to the antenatal ward			please tick <input type="checkbox"/>
<b>ANTENATAL CASES</b>			
<b>CATEGORY A1</b>			
A woman who needs some form of treatment e.g. IUI, ECV, etc, who may go home or be admitted			please tick <input type="checkbox"/>
<b>CATEGORY A2</b>			
A woman who is poorly, needs intervention e.g. severe APH, premature labour etc, & who will be admitted for continuing care. Usually stays in delivery suite for MORE THAN 6 HOURS			please tick <input type="checkbox"/>
<b>CATEGORY R</b>			
<b>POSTNATAL READMISSIONS</b>			
A woman who has previously given birth, but returns to delivery suite for assessment / procedure / visit to theatre			please tick <input type="checkbox"/>
Please tick outcome	ADMIT <input type="checkbox"/>	HOME <input type="checkbox"/>	
<b>DON'T FORGET TO RECORD DATE &amp; TIME LEFT LABOUR WARD</b>			

*Appendix 2 – Categories of the delivery activity*

Over the page

SCORE SHEET 1		This form for all women who have given birth, for all other categories use score sheet 2				
Mother's details		Date In	Date out	TOTAL TIME		
		Time In	Time out			
SECTION A		GESTATION / LABOUR / INTERVENTIONS				
Gestation	More than 37 weeks	1				
	More than 34 weeks, less than 37	2				
	Less than 34 weeks	3				
Length of labour	8 hours or less	1				
	More than 8 hours	2				
As required	I.V. infusion [not blood transfusion]	2				
	Epidural in situ	3				
	Elective anaesthetic	3				
	Continuous fetal monitoring	3				
*[see note on multiple birth scores]	Twins *	2				
	Triplets, quadruplets, etc *	5				
	Medical problems needing consultant oversight e.g. diabetes; cardiac; epilepsy; acute mental health; acute drug/alcohol; etc	5				
	Subtotal SECTION A					
SECTION B		DELIVERY				
** MUST be scored for caesarean section	Normal delivery	1				
	Forceps / breech, etc	2				
	Elective caesarean section	3				
	Emergency caesarean section	5				
	** Perineum intact	1				
	Vaginal / perineal tear / episiotomy	2				
	Extended episiotomy / 3rd degree tear	3				
	Subtotal SECTION B					
SECTION C		INFANT[S]				
Apgar assessed at 5 mins.	Apgar score 8+	1				
	Apgar score between 5 and 7	2				
	Apgar score less than 5	3				
Multiple births : score each baby	Birth weight 2.5 kg or more	1				
	Birth weight 1.5kg - 2.49 kg	2				
	Birth weight less than 1.5 kg	3				
As required	Congenital abnormality	3				
	Infant is stillborn / dies immediately after birth	5				
	Subtotal SECTION C					
SECTION D		OTHER INTENSIVE CARE				
	IV Infusion started or maintained post-delivery	2				
	Blood transfusion at any stage of labour	5				
	Emergency general/spinal anaesthetic	5				
	Intensive care not accounted for by any other factor	5				
		Subtotal SECTION D				
ENTER TOTAL SCORE IN THE BOX						
IDENTIFY & RECORD THE CATEGORY FROM THE SCORES BELOW						
Score 6	=	Category I	Score 14 - 18		=	Category IV
Score 7 - 9	=	Category II	Score 19+		=	Category V
Score 10 - 13	=	Category III				
No. of Prostins / Propess		please record 0 if none given				
DON'T FORGET TO RECORD DATE & TIME LEFT LABOUR WARD						

### Appendix 3 – Expert assessment of time in antenatal/postnatal activity

#### STAFFING CRITERIA AND USE OF EXPERT GROUP/PROFESSIONAL JUDGEMENT ADVICE USED IN BIRTHRATE PLUS® STUDIES

1. Community services, all booked cases including cross border workload	Agreed hours per woman	Comments	Expert Group oversight for varying agreed parameters
Booking for hospital/home birth	2.0	Deduct if booking not done in community	Yes
Antenatal and parent education	5.5	Parent education may be in clinic session or one to one	Yes
Postnatal care for women with: Short stay in hospital (Category I & II Category III) Longer in-patient stay (Category IV & V)	5 hours 8 hours	(Some Category IV clients may also be short stay)	Yes
Intrapartum care for home births & MLU births in addition to antenatal and postnatal hours above	17 hours per birth	This includes all care in labour, plus & extra midwife for delivery, immediate post birth care to mother and baby and first follow up visit at home or until client discharged from CMU	Yes
Intrapartum care for caseload based births in hospital in addition to antenatal and postnatal hours above	Low risk = 17 hours High risk cases = 24 hours	This includes all care in labour, plus an extra midwife for delivery, immediate post birth care to mother and baby and first follow up visit at home or until client transferred to ward	Yes
1. Time for administration, meetings etc	5% added to total hours	Calculated once total workload has been assessed	Yes
2. Time spent in travel around community area	15% - 20%	Depends upon local geography, rural areas may be 17.5 –20%; urban more often 15%	Local decision
3. Annual leave, sickness and study leave	17.5 - 25%	Local decision often at Trust level	Local decision

2. Hospital services, all births and admissions	Midwife hours & agreed hours per woman	Comments	Expert Group oversight for varying agreed parameter
Antenatal clinics, Parent Education etc	As recorded	Local data on numbers sessions/midwives etc	No, local data
Day Units	As recorded	Local data on days/hours open	No, local data
Antenatal ward admissions Low risk/Category X Moderate risk High risk	3 hrs per stay 6 hrs per stay 15 hrs per stay	Not based on length of stay, but on needs although higher risk women tend to stay longer	Yes
Intrapartum Care; Birthrate Plus® Categories I - V	Mean hours per Category as recorded	Birthrate Plus® study produces % case-mix all categories plus mean hours per category, plus allowances for variability and management	No Local data collected for 4 to 6 mths
Other cases in delivery suite As defined in Birthrate Plus® Category. X, A1, A2, Inductions, Readmissions, Escorted Transfers out	Category X 1 hour Inductions x 2.5 hrs per episode  Other cases as recorded	Birthrate Plus® study produces number of all these categories plus mean hours per category apart from Category X, plus allowances for variability and management	Yes Category X only  No Local data collected for 4 to 6 mths
Postnatal wards 1. Early discharge home Category I+II Category III 30% Category IV,	Category I & II x 4 hours as an average  Category III x 6 hours as an average	Workload assessment depend upon intrapartum case-mix results	Yes & discussed with individual units to see if patterns vary
Postnatal wards 2. Longer stay 70% Category IV all Category V	Category IV x 17 hrs (average) Category V x 24 hrs (average)	Workload assessment depend upon intrapartum case-mix results	No; Policies on length of stay are local decisions
Postnatal wards; neonatal examination of newborn by midwife	0.75 hour	Only applies where midwife does examination previously carried out by paediatrician. Number recorded via Birthrate Plus® study	Yes
Ward Attenders any ward	0.5 to 1 hour per episode	Numbers recorded via Birthrate Plus® study	Local decision
3. Annual leave, sickness and study leave	17.5% - 24%	Individual Health Trust agreed allowance	No

## WORKING WITH BIRTHRATE PLUS®

### *Section 3: DEVELOPING TOOLS FOR STRATEGIC PLANNING*

This section focuses on using Birthrate Plus® data for strategic planning.

#### I. An introduction and overview of the system

Birthrate Plus® was designed to provide an individual maternity service with a detailed analysis of the demands upon it and the number of midwives needed to meet that demand. This may be described as the “bottom-up” approach to workforce planning.

However undertaking a full study does require a prolonged time and there was an increasing demand for a more “off the peg” or “top down” approach based upon the considerable data arising from workforce planning studies throughout the NHS.

This was particularly useful for **strategic planners** dealing with the projection and planning of staffing needs based upon future changes in the birth rate, or when services are merged or closed with resulting impact on the remaining services.

Providing such a “top down” method also provides **local services** with a less time consuming method for assessing needs than undertaking a full Birthrate Plus® workforce study. This is particularly useful when there are projected changes in the number of births or cross border activity or the development of a new maternity unit.

Creating a database: As the number of services undertaking Birthrate Plus® studies increased the resulting data was stored onto a detailed database. This provided the means for comparing the results of different services and identifying the factors which most affected the numbers of midwives required.

#### II. Experience of using these ratios for strategic planning

This approach has been applied within a number of regional strategic planning scenarios. Commissioners and planners have been able to ‘fine tune’ the results by allowing for local issues such as travel and leave allowances which do vary across the NHS. The results have

been found to be a robust and valuable tool in decision making based upon both current and future needs of the services and have been well accepted by workforce planning officers.

The ratios produced from Birthrate Plus® studies in England do not apply to midwifery services in Wales, primarily due to the higher leave allowance of 24% and higher travel in some of the more rural/remote areas. The same differentiated ratios based approach has been applied in most of the Health Boards in Wales, but using their own ratios/cases per wte midwife. The same applies to Northern Ireland.

### III. Using Birthrate Plus® data to aid national and regional strategic planning

In 2010 the mean national ratio based on 87 DGHs and 9 tertiary units in England was defined as **29.5 births per wte midwife** with a range of 27.3 - 31.5 births per wte midwife (Ball and Washbrook 2010). The home birth ratio of 35 births per wte midwife was unchanged.

As other maternity workforce planning studies have been completed, these ratios have been checked and found to fall into a similar pattern. Where there are differences, it is clear from the detailed individual studies that there are local factors, which are not widely found in other maternity services, that impact upon the ratios.

For England as a whole, based upon a ratio of 29.5 births per wte midwife and assuming a projected birth rate of 700,000 births p.a. of which 90% are hospital births the number of wte clinical midwives required is:

630,000 hospital births @ 29.5 births per wte =	21,356 midwives <i>and</i>
70,000 home births @ 35 births per wte =	2000 midwives
Total =	23,356 wte midwives*

### IV. Using Birthrate Plus® data to aid local strategic planning

The nationally derived ratio of 1:29.5 will not be robust enough, of itself, to guide local service planning and delivery. Further work is required at local level to inform strategic decision making about service configuration and the impact of local demographics, patterns of care and women's needs. This section illustrates how the differing staffing needs of

\*This figure excludes midwife managers and specialist midwives without a clinical role

tertiary units (those providing highly specialist care to a wider population) and units servicing higher risk and lower risk populations can be determined. It also explains the different approaches to calculating midwifery numbers required for hospital workload and community workload.

For local strategic planning, it is recommended that the Birthrate Plus® ratios are based on calculating separately and then adding staffing needs for:

- **Hospital services, based on the number of births per annum and the percentage of women in the higher need intrapartum categories.**
- **Community services based on:**
  - a. **the total number of women booked for hospital birth and receiving antenatal and postnatal care from community midwives. These women may give birth in a number of different hospital and do not relate entirely to the local hospital births even though that health trust employs the community midwives.**
  - b. **The number of home births and case loading midwives.**

## Determining hospital based staffing requirements

The main factor in determining differing staffing needs for different hospital services is that of the workload in the delivery suite. Intrapartum care makes the most demand of midwife care in terms of the time needed to care for a woman throughout labour and by the increased ratio of time needed for those in the higher need groups. [The table below illustrates the average % of women nationally falling into each of the risk categories associated with delivery and the average time and midwifery input required to care for them.](#)

Category	% of an Avg. case mix	Avg. hours in delivery	Midwifery input during labour	Total midwifery time required to deliver care
Category I	10.9%	6.6 hours	1 wte MW: 1 woman	6.6 hours
Category II	22.4%	7.4 hours	1 wte MW: 1 woman	7.4 hours
Category III	17.3%	9.4 hours	1.2 wte MWs : 1 woman	11.3 hours
Category IV	25.9%	10.7 hours	1.3 wte MWs : 1 woman	13.9 hours
Category V	23.5%	16.4 hours	1.4 wte MWs : 1 woman	22.9 hours

Birthrate Plus® will calculate for any given service the % of women falling into each category. A higher % of category IV and V women will increase the demands on midwifery time and therefore on the number of midwives required to deliver care.

The intrapartum outcome also impacts upon the staff needed for postnatal care. An increase % of category IV and V women will place additional demands on postnatal wards with more women recovering from interventions during childbirth. Altogether the midwives needed for intrapartum and postnatal care accounts for between 65% & 70% of all hospital midwives.

Another factor is the volume of antenatal care both in clinics and admissions before birth. This has most effect on tertiary units as they provide specialist care for women across a large catchment area. Local decisions to centralise specialist services may have an impact on community workload and therefore staffing levels in neighbouring units.

It has been through applying this methodology that the range of Birthrate Plus® ratios, from 1:27.3 to 1:31.5 has been determined. Units with higher ratios (i.e. those requiring more staff) are consistently found in those services with more than 50% of births ending in Category IV or V. This is often a reflection of the local Caesarean section rate, incidence of associated obstetric/medical problems and induction rates. However, high rates of intervention should not be automatically assumed in Tertiary units, a number of these units whilst having high volumes of high risk women antenatally and undertaking specialist fetal medicine actually have lower levels of intervention in delivery. Looking at the results from Birthrate Plus® studies a good rule of thumb is that expected or likely ratios will be:

### For hospital services only: number of births per wte midwife

- **Tertiary Services: 38 births per wte**
- **DGH with a case mix of more than 50% in Category IV and V: 42 births per wte**
- **DGH with a case mix of less than 50% in Category IV and V: 45 births per wte**

**Note:** Added to this will be the calculation for the number of community midwives required.

## Determining community based staffing requirements

As with the hospital midwife staffing numbers, calculations of community midwife staffing requirements are based primarily in the time needed to provide all of the elements of antenatal and postnatal care to women. However, application of Birthrate Plus® has demonstrated the necessity for refinement to adjust for cross border workload and its effect upon workforce needs together with any home or caseload based births. (RCM 2009 / Ball and Washbrook 2010). The current ratio allowing for some changes in allowances and the NICE Guidance since 2009 is:

- **96 cases per wte midwife**

The term 'cases' is used rather than 'births' as not all women will have delivered in the local maternity unit, so will not be included in the total births for the obstetric unit. The total number of cases will reflect the local population of women having delivered along with those that may not complete their pregnancy.

### Example: Illustrating the difference between hospital and community activity

Maternity Unit J		
Total number of local women booked who deliver in the unit	4800	Antenatal, postnatal and intrapartum care provided
Total number of local women booked who deliver in neighbouring hospitals	700	Antenatal and postnatal only care provided
Total number of women from outside area who deliver in the unit	550	Intrapartum care only
Total home births	370	Antenatal, postnatal and intrapartum care
Total births in unit	5350	
Total cases requiring antenatal and postnatal care	5870	

Calculating community staffing for antenatal and postnatal care and homebirths

$$5500 / 96 = 57.2$$

$$370 / 35 = 10.5$$

Total community staffing = 67.4 midwives required

### Producing an overall ratio

Using differentiated ratios as explained above is a different and more detailed approach to applying the frequently quoted 28 or 30 births to 1 wte midwife for all hospital births. As explained, the overall ratio is more appropriate when applied to population data as a means of assessing midwife numbers. However, it is feasible to calculate the overall ratio for a region when using differentiated ratios.

This is achieved by assessing the separate staffing establishments for hospital and community care of all hospital births (excludes home and births in a FMU) using the specific ratios and then adding them together to give a total staffing figures.

Once this figure is available, simply divide the total annual hospital births by the total wte to produce the overall ratio. This approach will confirm how the 'local' ratio compares with the 29.5 births to 1 wte midwife, and indeed demonstrate the degree that local factors and annual activity can affect the ratio.

### V. How to undertake a ratios based approach to workforce planning

Using the differentiated ratios based on the Birthrate Plus® Database provides separate midwifery establishments for hospital and community workload based on current case mix, total births and models of care. The review includes an assessment of skill mix in conjunction with management and professional recommendations. In discussion with the midwifery management team, midwifery hours for governance, general management, project posts and other non-clinical specialist work are calculated to result in a comprehensive staffing summary.

Whilst this method provides a total staffing for hospital and community services, it does not give a detailed breakdown for the individual areas, such as maternity ward, antenatal clinics or the delivery ward. To obtain such detail does necessitate the more traditional approach to workforce planning as explained in Section 2.

However, it does result in an objective and robust assessment of midwifery and other staffing establishments based on agreed standards of care and inclusive of local demographics.

*Note: For Birth Centres, it is necessary to apply components of the Birthrate Plus® methodology as some activity cannot be assessed using ratios. A standalone birth centre often has more ante & postnatal activity than actual births due to its relationship with nearby Obstetric Units. This activity can include peripheral/outreach antenatal clinics with an obstetrician in attendance, management of unplanned antenatal activity to relieve pressure on the obstetric services, and mainly providing community services to all women in the local area. Examples of total activity within Birth Centre can be found in Ball and Washbrook 2010.*

## VI. Other related staffing issues:

To calculate staffing required to undertake roles not involved in direct clinical care (see 5.5 for more details), Birthrate Plus® suggests adding an agreed percentage to the clinical staffing component, usually: 10% for Tertiary Maternity Services and 8% for all other units. The RCM acknowledges this percentage increase in their 2009 Staffing Guidance. **However, this remains for local decision and is not a recommendation of Birthrate Plus®.**

Birthrate Plus® recognises that high quality maternity care is not delivered exclusively by midwives. Section 4 contains further explanation of how to calculate the impact of skill mix on midwifery numbers.

Overall the % of midwives to trained support staff most commonly quoted is 90/10, so this split can be applied to the total clinical establishment as a means to estimate the contribution from non-midwives. **However, this remains a local decision and is not a recommendation of Birthrate Plus®.**

## VII. Examples

### Example: Illustrating the application of differential ratios to services operating across different sites

Trust K comprises a hospital based obstetric unit and a free standing midwife led unit on another site.

#### Activity

Obstetric unit		Free standing midwife led unit	
Births in the unit to local residents	4669	Births in unit	274
Home births	179	Number of women booked who deliver elsewhere	420
Number of local women booked who deliver elsewhere	435		
Number of women from outside the area who birth in the unit	394		
Total birth activity	5060		
Total community activity	5101		

#### Calculating staffing using different ratios

	Number of births/episodes	Ratio applied	wte staffing
Obstetric unit births	5060	1:42	120.47
Obstetric unit home births	179	1:35	5.11
Obstetric unit community cases	5101	1:96	53.13
Sub total			178.71
Midwife led unit births	274	1:32	8.33
Midwife led community only cases	420	1:96	4.37
Sub total			12.70
Total clinical midwifery staffing across whole service			191.41 wte

Overall this service is staffed at a ratio of 1 clinical midwife to 27.8 births, but the calculations demonstrate why this simplistic approach masks differences across the service.

Applying a skill mix model to this staffing would suggest that around 20 of these clinical midwifery posts could be converted to support worker posts.

In addition to these clinical staff this service would require approximately 15 clinical midwifery posts in management, leadership, service development and governance roles.

### Example: Illustrating the impact of changes in clinical practice and outcome to staffing levels in some parts of a service

Trust H has an obstetric unit and an alongside midwife led unit. Through promotion of midwife led care it has achieved a sustained reduction in caesarean section rates from around 29% to around 24%.

#### Activity

Births in the obstetric and along side unit to local residents	3317	Antenatal, postnatal and intrapartum care
Births in the obstetric and along side unit from neighbouring areas	700	Intrapartum care only
Local women who deliver in neighbouring units	700	Antenatal and postnatal care only
Home births	177	Antenatal, postnatal and intrapartum care
Total number of hospital births	3317	
Total number if community care cases	3317	

#### Calculating staffing and impact of changing ratios due to decrease in interventions

	29% caesarean section rate			24% caesarean section rate		
	Activity	Ratio	Staff	Activity	Ratio	Staff
Birth activity	3317	1:41	78.98	3317	1:45	73.71
Home births	177	1:35	5.06	177	1:35	5.06
Community cases	3317	1:96	34.55	3317	1:96	34.55
Total clinical staffing required			118.59			113.02

Overall this service has moved from a clinical staffing ratio of 1:29.4 to a ratio of 1:30.9, but the differentiated ratios show that the impact will not be uniform across the service.

Applying a skill mix model to this staffing would suggest that around 11 of these clinical midwifery posts could be converted to support worker posts.

In addition to these clinical staff this service would require approximately 9.4 wte non clinical midwifery posts in management, leadership, service development and governance roles.

### VIII. How to obtain further information and advice

Information and explanation of the ratios are available on the Birthrate Plus® website – [www.birthrateplus.co.uk](http://www.birthrateplus.co.uk)

Further advice and support to use the ratios for national, regional and local planning is available from the Birthrate Plus® authors.

A ratios based staffing assessment can be completed manually using the appropriate differentiated ratios as stated on the website, although care must be taken to ensure there is a 'good fit' to your midwifery services, by checking against the parameters within the ratios. If required, expert support is provided by Marie Washbrook which will involve completing a dataset to ensure a good match to published ratios, identify any factors that are not within the ratios and how these can be taken into account, calculating the staffing along with a skill mix adjustment, consider future plans for maternity services such as introduction of midwife led models, presentation of results and report. Using external support will provide an objective assessment and help to address local queries and concerns if they arise.

## WORKING WITH BIRTHRATE PLUS®

### Section 4: APPLICATION OF A SKILL MIX INTO MIDWIFERY SERVICES

This section focuses on how to apply a skill mix to the midwifery staffing and retain agreed standards of care:

#### I. Introduction to the Skill Mix Rationale

*Note: the term MSW (Maternity Support Worker) is used to denote the support staff who can replace midwifery hours, whilst HCA (Health Care Assistant) is used for other support staff that do not replace midwife hours. It may be that the appropriate support staff who fit the rationale are others than MSWs, such as Nursery Nurses or Registered Nurses. It is a local decision as to which staff 'fit the skill mix rationale'.*

Due to changes in skill mix and the increasing use of support staff with competence and specific training in maternity care, there is a need to distinguish between those that can replace midwife hours (MSW), and other staff that support the midwife in the care of women and their babies. In all clinical areas the use of Care Assistants (HCA) greatly aids the provision of maternity care, by releasing midwifery staff to be client, rather than ward centered. It is important to distinguish between the situations where a Maternity Support Worker (MSW) assists the midwife and where he/she replaces the midwife.

Birthrate Plus® (1996) makes it clear the ward and clinic staffing levels for midwives are based upon the premise that they are supported by HCAs and clerical staff, and these staffing needs are assessed on a shift by shift basis; not using a clinical dependency method.

The decision about the percentage of midwife time which might be replaced by MSWs must be that of the local service managers. However, a professional consensus facilitated by Birthrate Plus® in 2006 and tested regularly since suggests that 10% of midwifery time could be replaced by appropriately trained and supported MSWs. This is on the basis that their roles and contribution is primarily focused in postnatal care.

In recent years the role and scope of MSWs has been evolving and in many services they now play a part in providing direct care to women antenatally, such as in providing parentcraft advice and in delivering public health interventions and even during labour, for example by accompanying an experienced midwife to a home birth. This would suggest that a split of 85:15 or even 80:20 might be appropriate in some services.

**Note: the application of the 90/10 skill mix split is not a direct recommendation of Birthrate Plus®, but a rationale to apply to provide a sensible and safe staffing model. It remains a local decision to use this rationale.**

Whilst the midwifery profession must revisit and set for itself acceptable and appropriate parameters which maximize productivity whilst assuring safety and quality, Birthrate Plus® can assist in determining the contribution of skill mix in hospital & community settings.

Overall the % of midwives to trained support staff can be applied to the total clinical establishment as a means to estimate the contribution from non-midwives. Care must be taken to avoid working out the midwifery staffing and then adding in a total of MSWs who indeed are undertaking caring duties in the maternity ward and community. This would be duplication of staffing and in excess of what is actually required.

However, if using the Birthrate Plus® **Births/Cases to Midwife Ratios** (see Section 3) to work out the staffing, this will give a TOTAL wte for Hospital & Community. Thus to apply the skill mix rationale, it is advisable to first assess the total establishment & then apply the 90/10 split to this figure to give you the total wte of Midwives & the total wte of MSWs.

Other support staff: As well as having suitably qualified MSWs, it is also essential to have HCAs and clerical/admin staff who provide support to the clinical staff. All hospital areas will certainly benefit from having adequate numbers and to calculate the requirement is done on a 'shift by shift' basis. For example, 2 HCAs in a Delivery Suite throughout the 24 hours and including 21% allowance for 'on costs' equates to 10.84 wte.

## II. Examples of skill mix adjustment

Unit A: 4670 births

Birthrate Plus® determined midwife need: 162.92 wte

Applying 10% to the clinical total of 162.92 wte to reflect the use of appropriately trained MSWs providing clinical care will provide 16.29 wte support staff for postnatal care in the maternity ward and community. This will leave 146.63 wte as midwives.

	Unit W	Unit Y	Unit Z	Total clinical wte
Birthrate Plus® wte	140.42	90.64	53.35	284.41
Skill mix adjustment based on 90/10 split	14.04	9.06	5.33	28.43

Applying the skill mix rationale can readily be done by midwifery management to the current funded establishment and often to the total figure, rather than a specific area. Some maternity services have applied an 85/15 split to the total clinical establishment resulting in an increase in MSWs working across the service.

## WORKING WITH BIRTHRATE PLUS®

### *Section 5: ADDITIONAL NON-CLINICAL MIDWIFERY ROLES*

This section explains the foundation for exclusion of non-clinical midwifery roles to the calculations but reinforces their importance to overall staffing models.

#### I. Introduction to non-clinical midwifery roles

All maternity services require additional roles to manage and provide maternity services, over and above that of clinical care. Such roles include: senior midwifery management; governance and risk; practice development; baby friendly initiative facilitators; antenatal screening coordinators to meet the National Screening guidelines; contributions from consultant midwife and some midwife specialist time for child protection, bereavement, domestic violence, teenage pregnancy etc which involve considerable liaison with other services and coordinating care plans rather than providing direct clinical care.

The reason for distinguishing between the clinical and non-clinical establishments is to avoid duplication of staffing and also to retain sufficient management and specialist roles.

It is advisable to view the non-clinical roles as delivering maternity services rather than midwifery care.

Below is a list of most of the additional roles required by all midwifery services to some degree and often dependent on the type of service.

- **Head of Midwifery and Matrons with some additional hours for the team leaders to participate in strategic planning & wider Trust business.**
- **Increased midwife co-ordination on delivery suite as per Safer Childbirth recommendations.**
- **Practice development role.**
- **Clinical governance role.**
- **Service development such as implementation of the Baby Friendly Initiative, through the production and monitoring of guidelines and undertaking audits.**
- **Additional hours for antenatal screening over and above the time provided in actual clinics.**

- **Contribution from a consultant midwife to service and practice development and innovation.**
- **Coordination for such work as Safeguarding Children, if applicable.**

In contrast **Clinical Specialist Midwives** have a clinical role in a specialised field working across all areas and provide additional care to women in their specialist skill. This will involve collaboration with other midwives to provide expert support and advice to women. Birthrate Plus® calculates staffing based on what women require rather than which midwives are providing the care. Thus as the clinical specialist midwives have a predominantly clinical role, they are included in the total clinical establishment.

A common error is to calculate the clinical midwives required for a service and then add in specialist midwives, such as Breast Feeding Advisor, Diabetic Specialist, and Smoking Cessation Midwife indicating that they are extra to the total clinical numbers. However, it is important that these roles are 'mainstreamed' as part of the clinical total wte and thus the Birthrate Plus® Method ensures they are within the clinical numbers. It is a local decision as to how such posts are deployed, as often the midwives are working in all areas of care so span ante, intra and postnatal services.

The actual requirement for non clinical midwifery roles is determined locally and will vary between maternity services often dependent on local factors, such as socio-economic groups, type of service, clinical profile. A Trust with more than one maternity unit may well have roles that work across the services.

Birthrate Plus® recommends assessing these roles by adding a % of the total clinical midwifery wte, usually 10% for Tertiary Maternity Services and 8% for all other units. The reason for the slightly higher percentage in Regional Tertiary Services is based on the likelihood of there being more research underway and perhaps more than 1 consultant midwife employed. However, this remains a local decision as to the % to add in to the clinical total wte. The RCM acknowledges this % increase in their 2009 Staffing Guidance. Please note that calculated births/cases to midwife ratios do not include the additional non-clinical midwifery roles (see Section 3), as the ratios are based on the clinical care to women and their babies.

## II. Examples

### Using a ratio based approach

	No. of births / episodes	Birthrate Plus® wte staffing
Hospital births	3984	96.75
Home births	32	0.93
Community cases	4535	48.18
Total recommended clinical staffing = 145.86 wte		

To calculate for non clinical midwifery roles, add in 8% to 145.86 wte which equates to 11.66 wte, thus making a total of 157.52 wte midwife posts.

However, if applying a skill mix adjustment, then this is applied to the 145.86 wte and not to the 157.52 wte because the non-clinical post cannot be undertaken by non-midwives.

This addresses the requirement to have management and specialist roles that are out with the clinical total establishment, and to avoid duplication. Experience of working with NHS Trusts and Commissioners has shown that the rationale is acceptable to Senior Management and Commissioners, with the actual deployment being left to the Heads of Midwifery and Senior Midwifery Team.

## WORKING WITH BIRTHRATE PLUS®

### Section 6: THE BIRTHRATE PLUS® INTRAPARTUM ACUITY® TOOL

#### I. Introduction and Overview

Birthrate Plus® has developed a method for Intrapartum Services whereby an assessment of midwives required is made prospectively at regular intervals throughout the day and night, thus being 'real time' staffing. The method is based upon its well established workforce planning methodology for midwifery services (Ball and Washbrook 1996). The tool is informed by clinical indicators and enables a more proactive and prospective approach to management of risk factors and better utilisation of staffing within the delivery suite, as well as informing workforce planning within the wider midwifery service.

\*ACUITY is defined as:

A measure of the intensity of need arising from the number and clinical status of women and the infants during labour and delivery.

The Birthrate Plus® Intrapartum Acuity system consists of:

- a. **A method of classification of clients and prospective scoring system to produce an acuity assessment, together with the ratios of care required for each category of client. This includes clients receiving intrapartum care and other clients admitted to the delivery suite, but not giving birth during their time within the suite.**
- b. **Guidance and training instructions for use of the system by midwives.**
- c. **Methods of ensuring reliability and validity of use of the score system.**

#### II. What does the Intrapartum Acuity Tool do?

The Intrapartum Acuity Tool provides an objective assessment of the complexity and risk of women during intrapartum care, in order to calculate the number of midwives required to achieve the agreed staffing standard of one midwife to one woman during labour and delivery. An assessment of the workload and associated risk is made at regular times throughout the 24 hours, usually 4 hourly, to enable adjustments to staffing levels

if the number of midwives available is less than the acuity calculates are needed. Midwife coordinators and managers are able to make clinical decisions and manage resources as well as workforce decisions based on the 2 or 4 hourly assessment. If the women fall in the higher need categories at any stage in her intrapartum episode, this can be an indicator to increase the ratio of midwife to women.

The number of women in the delivery suite is not necessarily the same as the actual workload arising from the total number. If all women are straightforward, uncomplicated and in established labour at term, then the number of midwives needed would likely match the number of women at the time. However, this may not always be the case and there may be unexpected peaks of activity or a number of higher risk births presenting at the same time. The acuity tool has been designed to help units understand their work flow and their case mix in order to ensure staff and skill mix is appropriately deployed.

Most delivery suites not only care for women in labour, but have significant additional activity throughout the 24 hours and 7 days a week. On occasions, there are more women not in established labour than those women in actual labour. Responding to the 'peaks and troughs' of a busy delivery suite is challenging for managers and midwife coordinators, and it is often said by midwives that it is not possible to cope with such variability in workload and demand. To staff to an optimum level is not equitable or efficient, and may affect adequate staffing in other areas, especially in the postnatal ward. Having midwives 'just in case' is not a feasible and efficient option and so there has to be a means of adjusting the staffing at peak times of activity and risk, but not to the detriment of other areas.

However, it is essential that during the 'peaks' in the delivery suite, the midwives are available to meet the 'acuity' in order to reduce/avoid clinical risk and ensure the woman has a midwife to care for her throughout her labour and delivery episode. This applies to women in labour and those that have an acute need as an antenatal or postnatal readmission.

Experience of using the Acuity Tool in maternity units has shown that it is possible to match the midwifery staffing to the acuity during the busy periods, and to have information on which to look at trends in activity to inform better deployment. It also enables a fairer allocation of midwifery resources and better management of non-labouring women.

### III. How to use the Intrapartum Acuity Tool

*Birthrate Plus® can provide further guidance and training material to enable units to use the Intrapartum Acuity Tool.*

#### The software:

The Acuity Tool is an Excel file; two versions of the tool are currently available. One version is for those using Excel 97\_2003; it is also available to run with Excel 2007, or later versions.

The master file for data collection is sent via email; the file is password protected and it is recommended that this approach is maintained in line with individual Trust policies on data protection. A further file can be provided for Units that have a midwife-led service; the file has been adapted to reflect the more specific criteria, and categories, of women cared for in these settings.

The master file provides data entry for one-week; it is very useful to maintain a master file. The principle is that a new file is set-up for each week; this can be done in advance and one month's files stored within a folder on the designated computer. Basic reports available within the tool provide a good overview of activity; the information is presented in tables and charts that can be easily shared, or printed, as necessary. To produce the built-in reports no additional skills are required by the user – just select from the report options available and review.

#### Working with the Acuity Tool

The Acuity Tool only applies to workload in the delivery suite which may include a Triage Service, but should not be used in other wards or assessment areas even if women there are in early labour. This is because the tool has been developed and validated for delivery suite activity only.

Wards where women may be admitted before transfer to the delivery suite will also have numbers of antenatal and postnatal women, and it would be difficult to distinguish the different patterns of care and the midwives needed. Once the woman is admitted or transferred to the delivery suite, she enters into the acuity record.

The Acuity should not be recorded on paper and later transferred to the Excel file by a midwife or ward clerk, as this will not meet the purpose of using the tool. Data entry must be 'live' in order to provide information needed to match midwives to the acuity.

Regular assessments are undertaken either 2 or 4 hourly throughout the 24 hours and at times to suit the local services, so can coincide with shift changes; consultant rounds and other practices. The frequency of assessment favours 4 hourly and although some of Category X activity being short stay may be missed, the significant workload is recorded within the 4 hourly periods.

At the agreed times in the 24 hours, the midwife coordinator enters the number(s) of women in the various categories with the emphasis on the appropriate category being what the woman is at the time, so is a real time assessment and not what she may be at the end of her stay in the delivery suite. The number of midwives available at the time including herself are entered and the acuity immediately shows the midwives required and if insufficient with a minus sign.

*This differs to using Birthrate for workforce planning when the midwife records the category only once on transfer from the delivery suite.*

If the Acuity is in the red, it is important to choose from the list of coded reasons for the staffing shortfall and actions required as this will be analysed and provide valuable information for review by managers. The list of possible situations and actions has been provided by some experienced users of the acuity and gives the most common factors. There is a free text diary page for reporting events, actions and outcomes that are out of the ordinary.

The Acuity Tool can be accessed by managers from their own PCs if a situation cannot be resolved by the midwife coordinators/shift leads, so they can assess and decide on the appropriate course of action.

Full guidance on its use is available within the tool and relevant information sheets can be printed out to support training of newly rostered midwives to the delivery suite.

#### IV. What information is provided by the Tool?

*Examples of the information provided are available as a PowerPoint presentation from the Birthrate Plus® authors and via the website ([www.birthrateplus.co.uk](http://www.birthrateplus.co.uk))*

The Acuity Tool provides a wealth of information for day to day management of workload demand in the delivery suite as well as advising Heads of Midwifery and senior midwifery managers of the overall results and trends over a period of time. As data is entered into the daily acuity record by the shift coordinator, the results are updated so a continuous analysis is providing up to date information.

For the midwife coordinator, the prime responsibility is to act upon the day to day acuity results for managing the midwife resources available throughout the 24 hours, and to enable appropriate decisions if the acuity is showing a shortfall of staff.

The information will help to match the midwife numbers to the acuity, and to decide on an appropriate course of action if the acuity is greater than the midwives available. As the acuity is updated at the agreed periods, and the numbers of women in the various categories entered into the file, the acuity will be updated. The weekly 'Traffic Light' summary (*courtesy of Mid Cheshire NHS Trust*) provides an excellent weekly analysis of the 2 or 4 hourly periods of assessment and if there are certain periods of the 24 hours when the acuity is not equal to midwives, and to what degree is the shortfall. Certainly trends in workload and staffing will emerge so helping with better deployment of midwives at peak times.

The ward co-ordinator will need to assess the likely future workload and the numbers of midwives available. If at the time of assessment, the number of midwives versus the acuity is showing a positive result, then no immediate action is needed. However as time passes the co-coordinator will be aware of changes in the numbers and needs of the women in the delivery suite and the acuity assessment acts as a "early warning system" if there is need to call on midwives from other areas. If however the next acuity assessment confirms a shortfall of midwives then immediate action has to be taken to supplement the existing allocated staff.

The degree of shortfall will indicate what action is appropriate. There are local decisions to make as to what constitutes a minor, moderate or significant shortfall and the information will enable the management of such circumstances to be recorded within the Escalation Policy, so enabling the midwife coordinators to deal with the situation at the time of assessment.

For the Head of Midwifery and management team, the information provided will summarise the results over weekly, monthly, 2 monthly and 3 monthly periods so producing an overall acuity result. In addition, the actions taken and outcomes are collated to indicate frequency and significance.

What % acuity score should be achieved is a question often posed by Heads of Midwifery. In discussion with some, it is realised that to attain 100% adequate staffing is not possible, so it has been suggested that over a period of time (to be set locally), the aim is to have 85% of staffing meeting the acuity with clear protocols for escalating. The target can be decided by local management and may depend on the type of maternity service and other factors.

Soon after implementing the Acuity Tool it is advisable to consider incorporating it into the policies and guidelines within the department, with particular reference to the Escalation policy. This will guarantee the information is used to full benefit and not just be a 'paper exercise' or something else for midwives to record and thus be of little, if any, value to improve care of women and their babies.

The acuity results will indicate if there are related staffing and management of activity issues. The actions recorded by the midwife coordinator will indicate if there are issues that suggest there are wider workforce issues as well as poor deployment practices; high sickness levels. Thus it is important to involve the Management and Executive Teams in reviewing the results.

Over the page is a brief description of what information is provided and examples can be seen in the PowerPoint presentation.

## % acuity

A weekly % acuity score is produced which states the number & % of occasions out of the total possible assessments when the staffing meets the acuity, and those occasions when it is less than required. In discussion with Heads of Midwifery, an acceptable level has been set at 85% of adequate staffing over a defined period of time, but this can be local decision.

The compliance with data recording is collated for the week, so giving robustness to the overall acuity score. The number of assessments should be 85% or more to have confidence in the results; a % set by an Expert Group.

## Case mix and other activity

The weekly graph reporting the acuity % also shows the breakdown of the various categories, namely; the births & high risk antenatal cases that require 1 to 1 midwife care or more; the post-delivery cases that are on the delivery suite either due to clinical need or a clinician's decision; postnatal women who are either transferred home directly or are unable to transfer to the ward due to lack of postnatal beds (*a common result*); and those that have a moderate need such as women having an induction of labour or presenting with a problem often associated with needing to confirm if in labour.

## Staffing status by colour code and shortfall (Traffic Light system)

This table provides a detailed analysis of the 2/4 hourly assessment periods in terms of midwife shortfall and is colour coded into green, amber, yellow and red. The colour coding or traffic light reporting matches the shortfall as follows:

- **Green = no shortfall**
- **Amber = up to 1 midwife short**
- **Yellow = 1 & up to 2 midwives short**
- **Red = 2 & more than midwives short**

The traffic light reporting provides an immediate view of when the different situations occur and will show if there are certain periods in the 24 hours and/or days of the week when the staffing is 'in the red', yellow, amber or green. Do trends show? Does a pattern emerge with several weeks' data?

*The Traffic Light system can be adapted locally as the degree of shortfall will vary with the annual number of births and at what levels it is felt the staffing is unsafe. The version launched in May 2013 enables the Traffic Light system to be set locally as with the reasons for the shortfall and actions taken.*

### Staffing issues and actions

All staffing issues and actions recorded by the coordinator in the daily record are collated to produce a graph, so the frequency is shown and indicates if such actions as deploying from the maternity ward or community are the most often option; or is there a delay in inductions or elective cases. Having this information will enable the managers to review other areas of service to ensure appropriate levels of staffing, and indeed may necessitate a review of staffing in all areas using the Birthrate Plus® workforce planning methodology via a full study or the differentiated ratios.

### 3 Monthly results

All of the above results can be produced for a monthly, 2 monthly or 3 monthly period by simple transfer of the weekly results into a separate file. Having a longer period of information is much more useful to show trends in activity and acuity for making management decisions and for sharing with the Trust Directors and Executive Board.

*It is not feasible to electronically transfer this data, but re-entering the data is easy and quick.*

## V. How to obtain the Birthrate Plus® Intrapartum Acuity Tool

The Acuity Tool is available from the Birthrate Plus® authors and contact details are on the website ([www.birthrateplus.co.uk](http://www.birthrateplus.co.uk)).

Prior to being given the tool, it is necessary for the intellectual copyright of the Acuity System to be protected, so the Intrapartum Acuity Tool is made available to maternity services with certain conditions.

The Birthrate Plus® authors offer support with implementation for a three month period. After this period, you will be self-sufficient and not require further external support/advice. The Acuity Tool is meant to be an operational one and become part of the day to day management of a delivery suite.

## VI. Comments from users of the Intrapartum Acuity Tool

The Acuity Tool has been invaluable; it has allowed us to look at our activity levels on a regular basis. This has both supported maintaining a safe service by delivery suite coordinators being able to demonstrate activity verses staffing. This supports management decision making processes of escalation and transfers of activity. The tool gives a quick concise evaluation of the overall workload on delivery suite and its complexities without having to go into each and every detail. This figure coupled with the bed state gives back more time to the coordinator enabling them to manage the workload whilst the escalation process is taken over by the management team.

Traditionally the number of deliveries per day, week, month or year has been used to determine the overall activity levels. The acuity tool allows a much more in-depth look at the complexities of a modern day maternity service. The capture of an improved data set provides an overarching picture, it includes a score for all women on labour ward, not just those in labour, allowing potential patterns to emerge and a better overall picture to base staffing around. In the long term following other maternity units adapting the use of the acuity tool it will become a common language and potential to compare like for like services.

Implementation was achieved by discussing the above and a desire by all the staff to be able to clearly demonstrate activity levels beyond deliveries alone. We remained very clear that this will assist in business cases to support the requirements for further investments in midwives but this was not the sole or primary purpose of investment in the tool.

*Gemma Bosio*

Former Senior Midwife Intrapartum and Inpatient Services at the Leicester Royal Infirmary

Workload on the labour ward fluctuates immensely and prior to implementation of the Acuity Tool, coordinators could rapidly find themselves in a situation where workload exceeded staffing. The Acuity Tool provides a real time figure to measure this.

An escalation policy was written to ensure the acuity data was used proactively. A 'traffic light' system is used and the acuity figure, together with maternity beds and neonatal cots available correlates to a level of escalation. At each level there are specific measures to take and people to inform to actively prevent escalation to the next level. The escalation policy was agreed by all management levels, midwifery and medical staff. This enables the coordinators to convey the workload on the labour ward quickly to non-clinical managers when diversion is recommended. Using the acuity data enables proactive management of the workload to reduce risk and provide a safe environment for both patients and staff.

Implementing the acuity was quick and easy and we have a 100% completion. Initially the midwives were asked to record and update the acuity of their patient on the office whiteboard. This was difficult to maintain so the coordinators took on the task. Acuity is entered every 2 hours on an Excel file which takes approximately 2 minutes. They find this a powerful tool to measure the workload at any given time on the labour ward and effectively manage the resulting situation.

Acuity is also useful in review of incident reports and over time to review any trends in workload versus staffing

*Cath Murray*

Advanced Midwife Practitioner (Clinical Lead Labour Ward)  
Leighton Hospital (Mid Cheshire Hospitals NHS Trust)

We have used the Acuity Tool on the labour ward at Rotherham now for over 2 years. Although its implementation into practice took a little time to get used to for the labour ward coordinators it is now a part of their everyday working practice. Initially the coordinators felt that the acuity needed to be measured more frequently as the workload can change dramatically in a 4 hour period and felt that it may miss periods of high activity but realistically it would be too much to do it more frequently and the potential for it not to get completed. There are only infrequent times when it is not completed and I would say this is at really busy times when actually this is when you need it completing the most.

It has allowed the labour ward coordinators to use the Acuity Tool to escalate staff to patient ratio concerns without it just being their personal opinion about that particular shift or part of that shift without documented back up. Documentation on the diary page is not often completed, but when it is, it is the coordinator stating they have not been able to be supernumerary or they have called in community staff or Supervisor of Midwives, etc.

It has been an important tool that we have used it when investigating incidents and complaints allowing us to look at the staff to patient ratios and/or the quality of the workload at a particular time or range of times in the shift when the incident occurred.

*Teresa Walker*

Intrapartum Services Manager: Rotherham General Hospital

## WORKING WITH BIRTHRATE PLUS®

### *Section 7: USING DIFFERENTIATED RATIOS AND THE INTRAPARTUM ACUITY TOOL*

#### I. Introduction

Sections 3 & 6 in the guidance explain about Births / Cases to Midwife Ratios and the Intrapartum Acuity Tool, which individually enable a review of staffing and provision of safe staffing levels in the delivery suite.

A more recent approach adopted by Heads of Midwifery and commissioners is to calculate the baseline staffing using differentiated ratios and then to implement the Intrapartum Acuity Tool to assist with deployment of midwives in the delivery suite, where much activity is unplanned and there can be significant 'peaks and troughs' of workload; as well as there being more clinical risk factors to safely manage.

The two methods complement each other and enable an on-going review of staffing via the Acuity Tool which in turn will alert management to a consistent shortfall in the delivery suite. Having this information may indicate the need to review staffing by applying the ratios method.

From experience to date, it is usually the objective to review staffing for the total midwifery services that prompts the use of differentiated ratios as a quick but robust approach to workforce planning. The approach explained in Section 3 will complete the staffing review. Following this exercise, the Intrapartum Acuity Tool can be implemented as explained in Section 6.

### II. What information is obtained

The application of differentiated ratios of births/cases to 1 wte midwife will confirm the total establishment for the hospital services inclusive of all areas, both outpatient and inpatient, and for community services including home births. Births in a stand-alone midwife led unit are calculated using the home births ratio. For other activity taking place in the stand-alone unit, it is necessary to apply components of the workforce planning methodology as explained in Section 2.

Local factors that will impact on the required staffing and thus subsequent use of the published Birthrate Plus® ratios can be considered and dealt with accordingly, by choice of the most appropriate ratio or applying a separate method. It is as important to avoid duplication of activity and workload as it is to underestimate.

To the total establishment produced, a skill mix adjustment can be made as explained in Section 4. Additional midwifery non-clinical roles can be included as stated in Section 5.

The three individual methods will produce an overall establishment of funded posts against which to compare the current funded establishments of Bands 3 to 8. It will not provide information for the deployment of such posts other than what is needed in hospital and what in community services. This is a local decision and will depend on many factors, well known to midwifery managers.

Alongside or following the ratios review of staffing, implementation of the Intrapartum Acuity Tool will provide beneficial information on deployment of staffing resources by identifying: what staff are needed in the delivery suite on a real time basis; practices for deploying midwives from other areas to maintain safe staffing levels on delivery suite thus potentially creating a shortfall in these services; and the number of occasions when it is not possible to redeploy and when activity is adversely affected. With this information, it will confirm if overall staffing establishments are adequate or give more evidence of a known shortfall. If the latter is the reason for the acuity being higher than available staff, then an increase and/or an adjustment in midwives and/or support staff will address the situation and continued recording of the acuity will demonstrate improvements in attaining a lower % of occasions when the staffing does not match the acuity.

### III. How to obtain the tools and advice on implementation

Brief information on both methods/tools is available on the website – [www.birthrateplus.co.uk](http://www.birthrateplus.co.uk) and available from the Birthrate Plus® authors.

A ratios based staffing assessment can be completed manually using the appropriate differentiated ratios as stated on the website, although care must be taken to ensure there is a 'good fit' to your midwifery services, by checking against the parameters within the ratios. If required, expert support is provided by *Marie Washbrook* which will involve completing a dataset to ensure a good match to published ratios, identifying any factors that are not within the ratios and how these can be taken into account, calculating the staffing along with a skill mix adjustment (Section 4), considering future plans for maternity services such as introduction of midwife led models, presentation of results and report. Using external support will provide an objective assessment and help to address local queries and concerns if they arise.

The Intrapartum Acuity Tool is currently available from *Marie Washbrook* along with a training package and levels of support depending what is required to ensure satisfactory implementation. Using the Intrapartum Acuity Tool necessitates minimal external support as it is intended to be used as an operational tool so should be adopted by the delivery suite coordinators within a short period of time.

## WORKING WITH BIRTHRATE PLUS®

### *Section 8: USING BIRTHRATE PLUS® IN THE DAY TO DAY MANAGEMENT OF MATERNITY SERVICES*

There is a greater than ever demand on midwifery managers to maintain quality and safety, meet increasing expectations from the public, ensure effective and efficient allocation of scarcer budget allocations and respond to the changing demographics of the midwifery staff work life balance needs. Ensuring robust, evidenced based accurate workforce planning and analysis has never been a more crucial component of the midwifery manager's role. Daily balancing the unpredictable nature of maternity care with the numbers of available maternity staff, over a 24/7 basis is a familiar but essential key skill.

#### **I. Do I have to use Birthrate Plus®?**

There is no mandatory or statutory obligation on a Health Board or Trust to use Birthrate Plus®. However there is an expectation within organisations responsible for providing care to women in childbirth that they have sufficient practicing midwives and trained obstetricians to meet the clinical needs. There is increasing evidence to suggest that effective workforce planning and analysis is a feature of a high quality high performing maternity service. There is also evidence from many high profile reviews of maternity care that the lack of workforce planning and deficits in midwifery numbers has impacted directly on the safety of their services.

To date there is no other midwifery specific workforce tool than Birthrate Plus®, tools and other disciplines such as nursing are not transferable. Birthrate Plus® has been endorsed by both The Royal College of Midwives and The Royal College of Obstetrics and Gynaecology and the Department of Health in England and the government departments of Northern Ireland, Scotland and Wales (Towards Safer childbirth RCOG 2007). Some areas use the 'Towards Safer Childbirth' ratio which was intended to form a means of national workforce planning as an overall strategic assessment of numbers in post. This ratio is based on data from individual Birthrate Plus® studies, so does not have the robustness of the methodology. In isolation this has proved an insufficient approach to adequate workforce assessment and the more detailed hospital and community service ratios arising from Birthrate Plus® first published in 2007 and 2009 (Birthrate Plus® website, RCM 2009) are detailed in Section 7 in this guidance.

## II. How often should I undertake a Birthrate Plus® review?

In some areas of the UK there has been a historically set standard or understanding that Birthrate Plus® should be completed on a three yearly basis. However the context of maternity care provision is changing with clear evidence of rising birth rates, significant service reconfigurations, changing population demographics such as more complex births in older mothers and in some areas severe recruitment and retention challenges. Some Health Boards/NHS Trusts may through their maternity dashboards or clinical audit data have indications that there may be a shift in their clinical case mix. Any of these factors either individually or collectively should trigger the requirement to undertake a Birthrate Plus® analysis irrespective of previous time-spans. As local confidence is gained in using the Birthrate Plus® methodology and ratios, workforce planning and analysis should be a real time means of informing the maternity services quality, safety, financial and business assurance plan. This may lead to implementation of the Birthrate Plus® Intrapartum Acuity Tool (see Section 6) as a means to assess real time staffing needs.

## III. What information do I get from using Birthrate Plus® Workforce Planning Data?

There is often a perception that undertaking and maintaining Birthrate Plus® plus compliance is sufficient to assure quality and safety within the maternity care settings. Birthrate Plus® does provide accurate data on the numbers of midwives required to meet the direct and indirect care needs together with allowances for managing the service and annual leave etc. It will give you case mix data to further explore opportunities for capacity and demand management and eliminating unnecessary intervention. It will give you data to support appropriate sharing of resources between hospital and community care settings. However this strategic workforce planning data will not:

- **Advise you on how best to deploy your workforce on a daily basis.**
- **Provide solutions to duty roster principles.**
- **Give solutions to maintaining adequate staffing on a 24/7 basis.**
- **Prescribe skill mix requirements outside the overall 90/10 application in clinical environments. For example, clerical/reception cover and healthcare support for cleaning and catering duties.**

Resolving these issues will need local decisions and regular review, and the use of the Birthrate Plus® Acuity tool described in Section 6 of this guidance is a valuable development for monitoring intrapartum care needs.

### IV. How will I effectively use my Birthrate Plus® findings?

Birthrate Plus® workforce planning methodology and other means of establishing funded establishments are not designed to enable you to effectively manage duty rotas on a day to day basis. The peaks and troughs of demand associated with maternity care demands inevitably do cause operational deficits and pressures.

It is entirely possible that units that are fully compliant with Birthrate Plus® recommendations experience daily challenges in meeting their roster requirements for particular environments of care. This may be due to many factors such as pressure of sickness, maternity leave, poor management of annual and study leave allocation. The use of an electronic rostering tool can help significantly in providing assurances and analysis of effective and robust rostering principles and practices. The data obtained should also be used in conjunction with a Birthrate Plus® workforce review to measure pressures in the system and areas for further targeted management support to ensure maximum effectiveness and efficiency of funded establishments. If and how maternity leave is backfilled, availability and rules of accessing bank or pools of staff, amount of internal and external mandatory study leave allocation, EWTD compliance and family friendly policies. Therefore careful checks and balances need to be made against Birthrate Plus® findings and rostering management rules and principles to ensure maximised use of available resources to meet clinical demands. The Birthrate Plus® Intrapartum Acuity tool described in Section 6 provides a valuable resource for managers.

### V. How do I effectively deploy maternity staff to meet changing and unpredictable service needs and demands?

There is increasing evidence to suggest that safe and effective maternity care provision is not just based on robust workforce planning but effective and efficient deployment of staff. Maternity services have in the past been structured and staffed with traditional models and rostering methods. As such little evidence existed to identify how well matched staffing was

to the clinical risks, priorities and needs of women. The recent development of acuity tools such as Birthrate Plus® and the NPSA Scorecard in intrapartum care are providing managers with more informed method for assessing and deploying the maternity workforce. However there remains some inconsistency of their implementation and application in clinical and managerial practice.

However they are an effective means for negotiating with staff sometimes difficult deployment requests. They enable real time and retrospective consideration of staff deficits. This provides robust data to compare with clinical practices or rostering practices that maybe maligned but can and should form part of clear escalation protocols that are used as a conduits between clinical and managerial staff in times of peak activity. They enable a means for attaining accurate data to measure the effectiveness of achieving one to one care in labour. If there is over skill mix between available midwives and other maternity staff, it can indicate if there are safety compromises being made in the provision of intrapartum care within a service. The data can also identify regular themes and traits that might enable a change in rostering principles that reduce the need for often unpopular frequent ad hoc redeployment of midwives.

## VI. How do I apply skill-mix without compromising the care required to be provided by midwives?

Confusion can sometimes result in the interpretation and application of skill mix within maternity services. In nursing workforce systems, bed ratios and skill mix rules are applied and often confusion exists in their transferability to midwifery.

The RCM has issued guidance on staffing required above that of direct clinical care by midwives to ensure a safe maternity service (*Staffing Standard in Midwifery Services: RCM 2009*). The Birthrate Plus® ratios are determined by the direct clinical care required by women from a practising midwife. Applying a 10% skill-mix to this total head count will allow an 80 / 20 midwife to support worker skill mix in hospital postnatal care and 75 / 25 skill mix for postnatal care in the community. This is completely different to what individual ward establishments may look like with support workers and administrative cover which are not included in that skill mix split.

## VII. How do I demonstrate the effectiveness, efficiency and safety of my maternity services?

There are many factors other than adequate staffing that affect the safety and effectiveness of a maternity service. Using approved tools to validate, analyse and evidence quality and safety is essential. Recent developments such as the Birthrate Plus® Intrapartum Acuity tool, RCOG Maternity Dashboard and the NPSA scorecard are increasingly used within maternity services. Triangulation of workforce data with acuity reports, roster analysis reports, NPSA scorecard data, litigation and complaints themes are much more robust measures than workforce figures and compliance alone. Developing quarterly trend graphs with key performance indicators can be a positive means of assurance at every level of an organisation. The *'Safer Births enquiry' (Kings Fund 2009)* identified that leadership at every level particularly getting the board to engage with maternity services affected safety. As such using regular reporting methods with validated tools gives a strong framework of evidence for measure and action.

## WORKING WITH BIRTHRATE PLUS®

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