Resource impact commentary

NICE safe staffing guideline: Safe midwifery staffing for maternity settings
Report on the potential resource implications

Published: February 2015

www.nice.org.uk/guidance/NG4
Summary

1. The Department of Health and NHS England asked NICE to evaluate the possible resource impact of implementing the guideline on safe midwifery staffing for maternity settings (NICE guideline NG4). The guideline makes recommendations on safe midwifery staffing across the whole maternity care pathway and in all maternity settings.

2. The guideline builds on other guidance and requirements that are already in place. Since the publication of the Report of the Mid-Staffordshire NHS Foundation Trust Public Inquiry (also known as the Francis report) and the Keogh mortality review, the NHS has made good progress in introducing safer staffing practices and in planning for their resource impact.

3. Since the publication of the Department of Health report Maternity matters in 2007, the number of midwives in post from March 2008 to March 2013 grew by over 10%, from around 19,000 to 21,400 posts (Investing in people for health and healthcare – workforce plan for England. Proposed education and training commissions for 2014/15 Health Education England). This represented an average growth of 3% per year. This growth was largely as a result of an increase in midwifery education places made available between 2005 and 2009. Subsequent years have seen continued growth and according to Health and Social Care Information Centre figures at January 2015 there were more than 22,100 midwives in post.

4. This commentary outlines the resource implications of the recommendations in the guideline, using the best available evidence and data. It concentrates on the potential total staff cost impact of implementing the recommendation to ‘provide a woman in established labour with supportive one-to-one care’, because this is thought not to be current practice in all services.

5. The approach to estimating the impact of the recommendation to ‘provide a woman in established labour with supportive one-to-one care’ uses 2 different scenarios. Scenario 1 applies the staffing ratio associated with one-to-one care noted in the National Audit Office 2013 report Maternity services in England. Scenario 2 uses the Birthrate Plus ratio (a tool and process used nationally to calculate staffing numbers) associated with one-to-one care.

6. Other recommendations may have a resource impact but because of local variation in service provision and regional differences in midwife numbers, organisations should also evaluate their own progress against the other recommendations in the NICE guideline and assess costs locally. The commentary does provide details of some of the benefits of implementing safe staffing levels for midwives.
**Introduction**

7. Safe staffing levels and practices are the focus of several recent national reviews, including the [Francis report](#), published in February 2013. In April 2014, NHS England and the Care Quality Commission (CQC) issued joint guidance to trusts on the delivery of the Department of Health’s [Hard Truths](#) commitments associated with publishing data on NHS Choices about nursing, midwifery and care staff levels. The joint guidance also covers the frequency with which boards and trusts need to display and evaluate staffing data and publish their reports online, and the dates when audits of their progress will be undertaken. Therefore, there is clear evidence that the NHS has already started implementing safer staffing practices and is planning for the financial and resource impact of safe staffing.

8. This commentary provides 2 scenario-based estimates of the potential resource impact associated with recommendation 1.1.3: ‘provide a woman in established labour with supportive one-to-one care’. This recommendation is considered because the information it contains is sufficient to enable scenario modelling. The most recent Office for National Statistics live birth figures are for the 2013 calendar year. To ensure consistency in approach, the live birth data is modelled alongside Health and Social Care Information Centre midwifery staffing data from the same period.

9. The commentary also provides details of evidence on current NHS planning for safe staffing levels for midwives, noting 2 recent reports from 2013: The National Audit Office’s [Maternity services in England](#) and The Royal College of Midwives’ [State of maternity services report 2013](#). Both of these reports use data from 2012.

10. It also gives details of overall potential benefits nationally of implementing the safe midwifery staffing for maternity services guideline. These benefits range from improved clinical outcomes to improved bed use.

11. Health Education England reported that the gap between midwives in post and the requirement for staff or establishment was 2.7% or 600 midwives ([Investing in people for health and healthcare – workforce plan for England. Proposed education and training commissions for 2014/15](#)). This factor of 2.7% was applied to scenarios 1 and 2 as an estimate of temporary staffing numbers currently used in maternity settings. The percentage used was the best available data to estimate the effect of temporary staffing. If a higher percentage for temporary staffing is applied, the calculated shortfall will be reduced.

12. Data from the Office for National Statistics and the Health and Social Care Information Centre showed that birth rates and midwifery staffing rates each
increased by 17% overall from 2003 to 2012 (see figure 1). The figures suggest that demand and supply were not matched during this period, which may have led to service problems in a time of midwife shortages and birth rate increases. Since 2012, the number of midwives in post has increased further, standing at over 22,100 in January 2015. It should be noted that there is not clear evidence of a direct link between birth rates and midwife numbers.

13. In 2013, the number of live births reduced by 4.3% from 2012 levels. If this trend continues then trusts would need to reassess midwife numbers to match service requirements, to ensure that there will not be an oversupply.

![Figure 1 Numbers of births and midwives in post between 2003 and 2013](image)

Data for births taken from the Office for National Statistics live birth tables; data for midwives in post from the Health and Social Care Information Centre.

**Estimating staffing impacts**

14. Two different scenarios have been modelled to estimate the impact of the guideline (see appendix 1). The 2013 live birth data from the Office for National Statistics have been used in the modelling because this is the most recent information available. These figures have been modelled against Health and Social Care Information Centre midwifery staffing data from the same period. This ensures that the potential staffing levels estimated are consistent. Although 2014 midwifery staffing numbers are available, live birth data from the same period has not yet been released.
15. The total cost impact for both staffing scenarios has been calculated to estimate the cost of implementing the guideline. The midpoint of a band 6 Agenda for Change post has been used as the assumed midwife salary to estimate the cost impact. The potential costs are expressed in 4 ways (see table 1):

- national cost for England
- cost per 100,000 population
- cost per 1000 births
- cost for average provider trust (300,000 population).

Table 1 Summary of estimated costs of implementing the guideline

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<thead>
<tr>
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<th>Scenario 1</th>
<th>Scenario 2</th>
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<tr>
<td>NICE calculated - using</td>
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<tr>
<td>NAO ratio</td>
<td>-10</td>
<td>110</td>
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<tr>
<td>NICE calculated - using</td>
<td></td>
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<tr>
<td>Birthrate Plus national</td>
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<tr>
<td>ratios</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortfall (WTE) net of 2.7%</td>
<td>-10</td>
<td>110</td>
</tr>
<tr>
<td>reported vacancy factor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National cost of net shortfall (£m)</td>
<td>-0</td>
<td>4</td>
</tr>
<tr>
<td>Cost per 100,000 population (£)</td>
<td>-688</td>
<td>7,489</td>
</tr>
<tr>
<td>Cost per 1,000 births (£)</td>
<td>-526</td>
<td>5,728</td>
</tr>
<tr>
<td>Cost for average trust population 300,000 (£)</td>
<td>-2,064</td>
<td>22,467</td>
</tr>
</tbody>
</table>

16. The scenarios provide an estimate of £0 million (zero) using the National Audit Office ratio (scenario 1) or £4 million using the Birthrate Plus ratio (scenario 2). Note that the scenario estimates were based on data from 2013. Midwife numbers at January 2015 have increased to over 22,100. We do not have the data across all the fields (for example, 2014 birth rates) that we would need to produce a comparable, more up-to-date estimate. However, when the January 2015 midwife numbers are compared with the 2 scenario estimates, and recognising the 2.7% temporary staffing effect, it could suggest that midwife numbers are, at the very least, at the required levels.

17. The 2 scenario estimates offer a national view of the resource impact resulting from implementing recommendation 1.1.3. It is not possible to indicate exactly how much NHS organisations have already invested in care improvement and increased staff levels, and to date there is not a precise figure for the rates or cost of using temporary or agency staff. Therefore the 2 estimates provide an indication of the resource impact but more detailed information is needed to enable a more precise calculation.
18. The recent lower birth rate will have affected the finances of provider organisations, because less activity will result in a reduction in income through the payment by results system. The decrease of 29,000 births in 2013 compared with 2012 would reduce national income levels to provider trusts by between £43 million and £64 million depending on the case mix of birth activity. If the birth rate continues to reduce this will add to pressure on income levels and is a consideration for the maternity system at a time when additional staffing resources may be needed to meet the guideline requirements. Local assessments on future staffing requirements should consider including potential variation in future income.

Capturing existing planning within the NHS

19. The NHS has already started implementing safer staffing practices for midwives in maternity settings and is planning for the financial and resource impact of safe staffing. To assess the impact of the guideline we have looked wider and examined other examples of midwifery staff planning within the NHS.

20. To address the shortfall in midwives identified by the Department of Health in Maternity matters (2007), additional education places were made available. From 2009/10 to 2013/14, the output from education increased by 36%. That is, 1,414 midwives completed their training in 2009/10 and 1,918 (an extra 504 midwives) in 2013/14 (see figure 2). The education output from 2014/15 is estimated to be 1,923 trained midwives, rising slightly to 2,030 graduating in 2017/18.

21. In comparison with the above calculations, the National Audit Office reported in the Maternity services in England report (2013) that to meet the national benchmark of 29.5 births per midwife, which is suggested in an established workforce planning tool, 23,400 full time equivalent (FTE) midwives would be needed based on 2012 data. This is an increase of 2,300 midwives on the 2012 staffing levels. The report states that the calculations do not account for temporary bank staff because they are not captured in the workforce data, and including bank staff would reduce the estimated shortfall. After a 2.7% vacancy factor is applied, the shortfall estimate is around 1,700 midwives. If a higher vacancy factor for temporary staffing is applied, the calculated shortfall is reduced further. This estimate does not account for the recent increase in midwives or reduction in births.

22. As a further comparison, the Royal College of Midwives’ State of maternity services report 2013 stated that the required number of midwives was a total of 25,700 FTE. The report indicates that the shortage of midwives was around 4,800, or 4,200 after deducting the vacancy factor of 600, based on 2012 data. This estimate does not account for the recent increase in midwives or reduction in births.
23. It is important to note that although the National Audit Office and Royal College of Midwives estimates provide a useful basis of midwife number requirements in 2012, the estimates were not based on the safe staffing for maternity services guideline recommendations.

24. Health Education England’s workforce plan for 2015/16 indicates that the increase in training places may result in an oversupply in 2016 (Investing in people for health and healthcare – workforce plan for England. Proposed education and training commissions for 2015/16, see figure 3). Trusts need to consider this when assessing recruitment and retention of midwives.

25. Health Education England’s workforce plan for 2014/15 states that providers are forecasting only a small increase of 1.4% in their midwifery staffing requirement from current levels (Investing in people for health and healthcare – workforce plan for England. Proposed education and training commissions for 2014/15). This indicates that trusts are planning for lower levels of staffing than some of the estimates above, and that at lower levels of live births existing plans may give sufficient staffing levels.

26. Health Education England reported in the workforce plan for 2014/15 that there was a requirement from NHS providers for a modest level of growth in midwife staffing in 2013/14 of 1.8%, reducing to 1.4% in 2014/15, and at around 0.5% in future years. From the modelling done to estimate staffing impacts (see table 2), reducing the shortfalls estimated using 2013 data may already be accounted for within existing midwifery staffing growth in provider organisations’ long-term plans. The latest available staffing data from the Health and Social Care Information Centre show that there were more than 22,100 midwives in post in January 2015.
**Figure 2 Health Education England education commissioning 2014/15 – midwifery**

Data taken from Health Education England’s [workforce plan for 2014/15](#).

**Figure 3 Health Education England Midwifery forecast supply 2010 to 2019**

Graph taken from Health Education England’s [workforce plan 2015/16](#).
**Benefits of implementing the guideline**

27. The staff costs and impacts outlined above exclude savings from improved outcomes and other benefits of safe midwifery staffing for maternity settings. Financial benefits from implementing the guideline will reduce the net cost impact. Safer care has the potential to significantly reduce costs to the NHS in the long term.

28. The economic analysis undertaken during guideline development showed that midwifery staffing levels were positively associated with healthy mother and delivery with bodily integrity outcomes and the association was statistically significant, although the relationships were weak (Cookson et al. 2014).

29. Evidence of associations was also found between levels of midwifery staffing and:

   - increase in attendance by a known midwife during labour (NSCCRT 2000)
   - increase in the duration of labour (NSCCRT 2000)
   - reduced decision to delivery times for emergency caesarean sections (Cerbinskaite et al. 2011)
   - decrease in emergency caesarean sections (Cerbinskaite et al. 2011)
   - decrease in maternal re-admission within 28 days (Gerova et al. 2010).

30. A common reason for maternity negligence claims is mistakes during the management of labour (Maternity services in England 2013). If providing a care model that supports one-to-one midwifery care in labour reduced these errors, there may be a reduction in the number of claims.

31. Litigation relating to maternity care claims is increasing – the number of claims increased by 80% in the 5 years to 2012/13 and now equates to one-fifth of spending on maternity services. The cost to the NHS for litigation cover against maternity claims totalled £482 million in 2012/13 (an average payment of £277,000 per claim and around £700 per birth) (Maternity services in England 2013). Therefore if even a relatively small number of claims are prevented, there could be savings from fewer claim settlements and reduced insurance premiums.

32. Having one-to-one midwifery staffing during established labour is likely to reduce adverse events during intrapartum care. This would improve the mother’s experience and potentially reduce costs for the provider associated with the adverse events.

33. The maternity care services pathway payment system gives providers a payment for each woman receiving care for each of the antenatal, intrapartum and postnatal periods. Payment for the delivery is calculated using specific...
codes for the intrapartum period, and is applied for after the woman has given birth. There are 2 levels of payment: a birth with complications or comorbidities is £2,161 compared with £1,477 for a birth without (national tariff, 2014/15). Implementing the guideline may reduce the number of births with complications or comorbidities, resulting in a saving to commissioners and improved use of resource for provider trusts.

34. Implementation may lead to a reduction in bed days by providing more effective care. Potential resources released as a result of a reduced hospital length of stay have been estimated at £371 per bed day (national tariff 2014/15).

35. Midwifery staffing is associated with a decrease in maternal re-admission within 28 days (Gerova et al. 2010). A reduction in re-admissions would reduce a provider trust’s exposure to unpaid activity, because certain re-admissions within 30 days are not paid for by commissioners. The avoidance of re-admissions also enables provider organisations to use the freed-up capacity more effectively. For commissioners, re-admission reduction helps to drive harm reduction and quality improvement and ensures more effective and efficient use of resources.

36. Implementing the guideline has the potential to reduce neonatal admissions to high-care beds: intensive care unit bed day cost is £1,118; high dependency unit bed day cost is £791 (reference costs 2012/13). This would reduce costs for commissioners and give provider organisations increased capacity for these high-care beds.

37. There may be longer term benefits if women feel more supported immediately after the birth:

- Increased take-up and duration of breastfeeding. The positive effects of breastfeeding can lead to a reduction in the incidence of certain childhood diseases, such as otitis media, gastroenteritis and asthma. The costing report for the NICE guideline on postnatal care (CG37) calculated that a 10% increase in breastfeeding may lead to an annual saving of £5.6 million in England.
- Potential reduction in postnatal depression.
- Better care transition to post-maternity settings, for example linking with health visitors and better signposting to clinics.
References


About this commentary
This commentary accompanies the NICE guideline on safe midwifery staffing for maternity settings (NICE guideline NG4).

Issue date: February 2015.

This commentary is written in the following context
The cost and activity assessments in the commentary are estimates based on a number of assumptions. They provide an indication of the potential impact of the principal recommendations and are not absolute figures.

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Appendix 1: scenarios for assessing the resource impact of recommendation 1.1.3

Two scenarios were modelled to estimate the impact of the guideline on national midwifery staffing levels and associated costs. This was done by assessing the resource impact of recommendation 1.1.3: ‘provide a woman in established labour with supportive one-to-one care’ (summarised in tables 1 and 2).

Table 2 Summary of midwifery staffing scenario modelling

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<th>Scenario 1</th>
<th>Scenario 2</th>
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<tbody>
<tr>
<td></td>
<td>NICE calculated - using NAO ratio</td>
<td>NICE calculated - using Birthrate Plus national ratios</td>
</tr>
<tr>
<td>Data year</td>
<td>2013</td>
<td>2013</td>
</tr>
<tr>
<td>Births</td>
<td>664,517</td>
<td>664,517</td>
</tr>
<tr>
<td>Midwives in post (FTE)</td>
<td>21,833</td>
<td>21,673</td>
</tr>
<tr>
<td>Calculated required midwives in post (FTE)</td>
<td>22,429</td>
<td>22,384</td>
</tr>
<tr>
<td>Shortfall (FTE)</td>
<td>596</td>
<td>711</td>
</tr>
<tr>
<td>Number of vacancies (FTE) - assumed at 2.7% as per HEE</td>
<td>606</td>
<td>601</td>
</tr>
<tr>
<td>Shortfall (FTE) net of 2.7% reported vacancy factor</td>
<td>-10</td>
<td>110</td>
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**Scenario 1: National Audit Office approach**

The first approach taken to estimate the potential staff cost impact of the guideline uses the staffing level ratio in the National Audit Office 2013 report Maternity services in England (see paragraph 18) as the estimate of current staffing across the country. This ratio was applied to the 2013 data for midwifery staffing and live births, giving a calculation for any potential shortfall in midwives.

This method indicates that around 22,400 midwives are needed nationally, indicating a shortfall of 600 FTE midwives against current staff in post. Once the 2.7% vacancy factor is applied to account for temporary staffing, assuming that establishment vacancies are filled by temporary staff, there is no indication of an overall shortfall in midwives in this scenario.

**Scenario 2: Birthrate Plus approach**

The second scenario uses national level ratios stated in the Birthrate Plus tool and the 2013 data for midwifery staffing and live births. The Royal College of Midwives...
guide Working with Birthrate Plus outlines a ‘top down’ approach, which allows ratios to be applied to national level data for planning purposes. Births in obstetric units or alongside midwifery-led units are given a ratio of 29.5:1, and births at home or in a freestanding midwifery-led unit are given a ratio of 35:1. The baseline staffing data used in this scenario included only midwives in post in maternity settings, and excluded staff in education and neonatal nursing posts (a reduction of 160 staff).

The Birthrate Plus tool includes allowances in the ratios for greater than one-to-one midwife capacity during established labour. During guideline development the evidence review found that Birthrate Plus may not calculate sufficient staff to enable one-to-one midwifery care during labour to be achieved. However, the national level ratios were not studied directly and it was agreed that using this method to estimate current staffing levels was reasonable. Currently, Birthrate Plus is widely used throughout maternity services as a decision support tool for determining midwifery staffing requirement and is endorsed for use by several professional bodies, including the Department of Health. However, there is no evidence to validate the methodology that Birthrate Plus uses or to demonstrate that the tool has an effect on outcomes.

After applying the national ratios from Birthrate Plus, the estimate for the number of midwives needed nationally is around 22,380. This suggests a potential shortfall of around 700 staff. After the 2.7% vacancy factor (600 FTE) is applied to the estimated figures, the shortfall is 100 midwives.