Twins trust. We support twins, triplets and more...

NICE Works II

Transforming Maternity Care for Multiples

This report builds on Twins Trust's original 'NICE Works' report (2019), which highlighted that maternity units provide better, safer care for multiple pregnancies when following NICE guidelines.

Executive Summary

Since 2017, Twins Trust has, through its Maternity Engagement Project, supported 36 maternity units to improve the outcomes for twin and other multiple pregnancies by ensuring multiple pregnancy care is delivered in line with NICE Guideline 137 (NG137) and NICE Quality Standard 46 (QS46). Adhering to NICE guidelines (NG137) is shown to improve pregnancy outcomes for multiple birth families.

By participating in the Maternity Engagement Project, units are supported by Twins Trust to take action to improve their services. 33 units (92%) took action to improve practice in one or more of the six priority areas measured.

By taking action, all but one of the 36 units measured improved their overall NICE QS46 adherence. In total, there was a statistically significant improvement in overall adherence of 16.4 percentage points. In addition, there is a moderate but positive correlation between the proportion of required actions that units implemented and their levels of increased adherence.

Twelve months after starting the project, units, on average, see a small decline in their rate of multiple neonatal deaths and multiple emergency caesarean sections.

Three years after starting the project, units, on average, see their rates of multiple stillbirths and multiple neonatal deaths both decline by 0.3 percentage points, their rate of multiple neonatal admissions fall by 10.4 percentage points and their rate of multiple emergency caesarean sections fall by 6.7 percentage points.

Units report how useful they found working with Twins Trust as a partner. The initial audits revealed areas of adherence that required attention, units were effectively supported to implement changes to address those issues and the prospect of a re-audit helped to focus minds on improving services. Most units felt that working with Twins Trust had been a catalyst for change and without having the charity as an external partner they would not have achieved as much positive change.

92%

of units took action to improve practice in one or more of the six priority areas measured.

54%

of twin perinatal deaths could have been avoided

Background

Multiple pregnancies are high risk

The risks associated with multiple pregnancies are evident in the latest data from the MBRRACE-UK Perinatal Mortality Surveillance Report for births in 2021, published in September 2023[1]. The data shows that although twin pregnancies make up 1.4% of all pregnancies, they account for 6.4% of stillbirths and 13.5% of neonatal deaths.
In addition, The MBRRACE Perinatal Confidential Enquiry into twin deaths, published in January 2021, showed that 54% of twin perinatal deaths could have been avoided[2].

The Ockenden Report review of Maternity Services (March 2022)[3] stated that "Multiple pregnancies are known to be at greater risk of adverse obstetric outcomes and so additional antenatal care is required" and detailed that Trusts must "provide services for women with multiple pregnancy in line with national guidance", "have in place specialist antenatal clinics dedicated to accommodate women with multifetal pregnancies" and "have a dedicated consultant and dedicated specialist midwifery staffing".

The National Institute for Care and Excellence (NICE) published eight quality standards (NICE QS46) in 2013 (last updated in September 2019) covering the additional antenatal care for women who are pregnant with twins or triplets that is offered alongside routine antenatal care and describing high-quality care in priority areas for improvement.

Twins Trust's Maternity Engagement Project

Overall evidence suggests that adherence to clinical guidelines in maternity care saves lives and improves outcomes for multiples and their families, whilst promoting good, safe, quality care for all. Since 2017, Twins Trust has supported 36 maternity units across England (33), Scotland (1) and Northern Ireland (2) with its Maternity Engagement Project which aims to improve the outcomes for twin and other multiple pregnancies by ensuring multiple pregnancy care is delivered consistently and in line with NICE QS46.

Participating units were audited and supported to implement an agreed action plan. Follow up re-audits were carried out approximately one year later to assess the changes made and their impact. Data was collected from 36 sites during the two audits relating to their adherence to the NICE guidelines[4], actions taken to improve adherence and patient outcomes (namely rates of stillbirth, emergency caesarean sections, neonatal admissions, and neonatal deaths). Statistical analysis was undertaken to understand:

- What changes happened between the two audits (relating to six areas of practice)
- Relationships between actions taken, improved adherence and changes in patient outcomes.

1 https://www.npeu.ox.ac.uk/mbrrace-uk/reports/perinatal-mortality-surveillance
2 https://www.npeu.ox.ac.uk/assets/downloads/mbrrace-uk/reports/perinatal-report-2020-twins/MBRRACE-UK_Twin_Pregnancies_Confidential_Enquiry.pdf
3 https://www.ockendenmaternityreview.org.uk/wp-content/uploads/2022/03/FINAL_INDEPENDENT_MATERNITY_REVIEW_OF_MATERNITY_SERVICES_REPORT.pdf
4 NICE adherence was recorded (at both baseline and re-audit) with respect to seven key NICE QS46 statements (three of which were split into different parts). During the project, several updates to the statements have been made. Analysis was undertaken on adherence to the guidelines in place at the time the unit was audited.

Key Findings

Actions taken by unit

33 units (92%) took action to improve practice in one or more of the six areas measured[5]. Across all 36 units, **168 actions were recommended following the baseline audit, 109 (65%) of these were actioned** (either introduced or improved) in the period between audit and re-audit.

Changes to overall NICE Adherence[6]

All but one of the 36 units measured improved their overall NICE QS46 adherence between the baseline audit and the re-audit 12 months later. **In total, there was a statistically significant (p<0.001) improvement in overall adherence of 16.4 percentage points[7].**

Changes in adherence by statement

Across all 36 units, average adherence increased in all the NICE Q46 statements measured.

In ten of the 13 areas[8] measured, these increases were statistically significant at the 5% level.

The biggest increases were in QS5c monitoring by someone qualified to detect TTTS and QS3c women seen by a specialist sonographer.

Statement	Units	Baseline	Re-audit	"Change (% points)"	Statistically signiaficant?	P-value
1. Chorionicity/amnionicity determined <14 weeks	36	91%	95%	+4	No	0.012
2. Fetuses labelled and recorded <14 weeks	36	27%	40%	+13	Yes	0.008
3. Overall – care by specialist MDT	36	38%	58%	+21	Yes	<0.001
3a. Women seen by specialist obstetrician	36	67%	74%	+7	No	0.218
3b. Women seen by specialist midwife	36	16%	38%	+22	Yes	0.001
3c. Women seen by specialist sonographer	36	31%	64%	+33	Yes	<0.001
4. Care plan specifying scans and appointments	36	43%	60%	+18	Yes	<0.001
5a. Women monitored for fetal complications	36	76%	92%	+16	Yes	<0.001
5b. Monitoring carried out by the same person	36	24%	52%	+29	Yes	<0.001
5c. Monitoring by someone qualified to detect TTTS (to 2019)	27	58%	100%	+42	Yes	<0.001
5d. Growth discordance recorded at scans (from 2020)	9	53%	69%	+16	No	0.273
7. Pre-term labour discussion by 24 weeks	36	55%	72%	+17	Yes	0.001
8. Timing and modes of delivery discussion by 32/28 weeks	36	64%	80%	+17	Yes	0.004

All but one of the 36 units measured improved their overall NICE QS46 adherence

5 Provision of an antenatal care plan, an antenatal clinic, specialist multiple pregnancy obstetricians, midwifes and sonographers and effective positional labelling.

6 In the following analysis "p-values" help to determine the statistical significance of the results. A 5% (0.05) significance level has been applied to the calculations. If the p-value is smaller than this, the result is said to be statistically significant (i.e. it is unlikely to have occurred by chance alone).

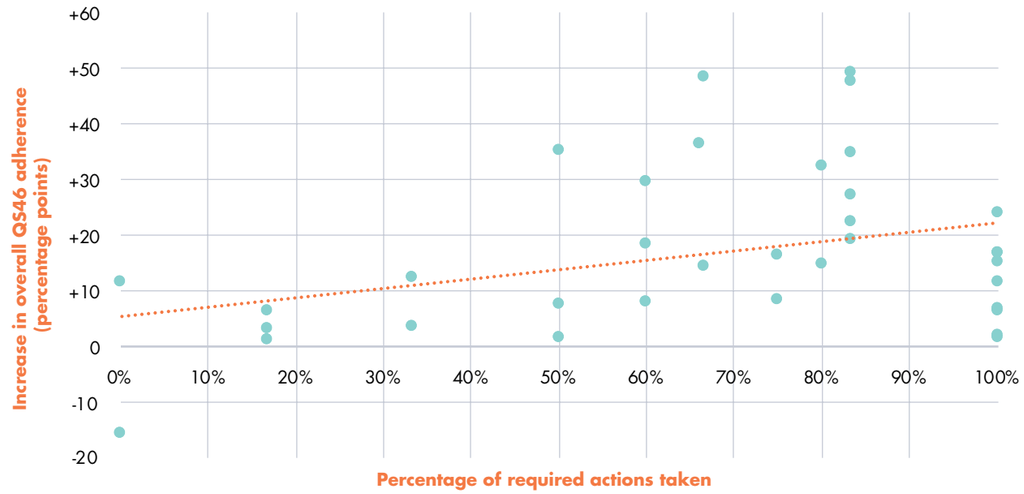
7 It was observed that average baseline adherence across the sites audited since 2019 (9) was higher than those sites audited before 2019 (27). When adherence at baseline is high, there is less 'headroom' for improvement. As a result, more recent participants can see smaller increases in adherence at re-audit which may not be statistically significant but still reflect a positive outcome.

8 Each unit was audited on 11 different statements. In this table, we have included a total for the three QS3 statements and during the project statement QS5c was changed significantly so these are shown separately.

Relationship between proportion of actions taken and overall adherence

Units that implemented a higher proportion of their required actions (i.e. those not present at baseline) tended to see greater increases in their overall adherence.

As can be seen in the graph below, no units that implemented a low percentage of their required actions saw a high positive change in their overall adherence. The trendline shows a moderate but positive correlation between the proportion of required actions units implemented and their levels of increased adherence, estimated to be 0.57 (95% CI = 0.294 to 0.755; p<0.001).



Units that implemented a higher proportion of their required actions tended to see greater increases in their overall adherence.

Relationship between specific actions taken and specific areas of adherence[9]

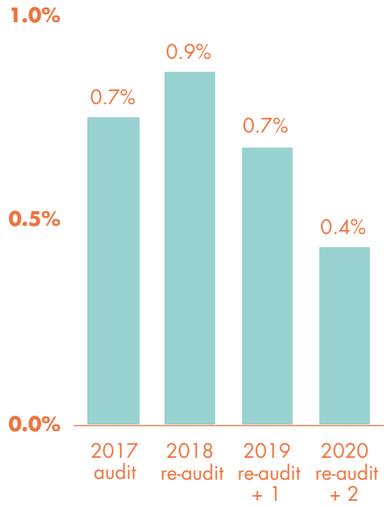
Some required actions related closely to certain QS46 statements. Units that took those specific actions saw the largest increases in adherence in the relevant QS46 statement. For example:

- Those units (7) that introduced care plans saw an average increase of 41 percentage points in their adherence to QS46-4 (care plans specifying scans and appointments). This compares with an average increase of 31 percentage points for those units (12) that improved practice and 23 percentage points for those units (6) that did not make any significant change (and where improved care plans were not evident at re-audit).
- Those units (17) that introduced or improved their specialist midwife provision saw large average increases in their adherence to QS46-3b (42 and 46 percentage points respectively). Those that did not make the change and had no evidence of specialist midwife provision at re-audit saw no increase (essentially 0% adherence at both baseline and re-audit).
- Those units (5) that introduced positional labelling saw an average increase of 30 percentage points in their adherence to QS46-2 (fetuses labelled and recorded before 14 weeks). This compares with an average increase of 12 percentage points for those units (19) that improved practice and 3 percentage points for those units (9) that did not make any change (and where positional labelling was still not present at the re-audit).

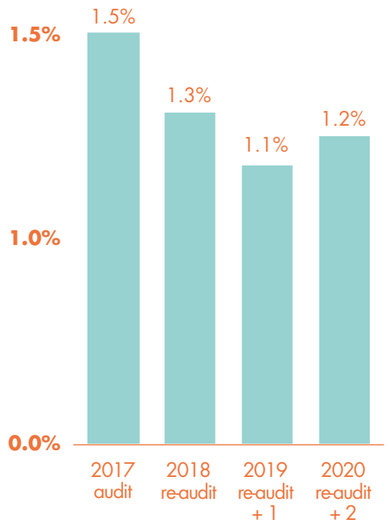
Those units that introduced care plans saw an average increase of 41 percentage points in their adherence to QS46-4.

9 In the nine units audited after 2019, no sites introduced a care plan or positional labelling. These units were more likely to have care plans or positional labelling in place compared to those audited before 2019 and therefore the later units are more likely to focus on improvements rather than introductions.

Stillbirths (22 Units)[10]



Neonatal Deaths (22 Units)



Changes to patient outcomes

Stillbirths

This outcome looked at the proportion of multiple fetuses of over 24 weeks gestation that did not show signs of life. As stillbirths are a rare occurrence, the following analysis should be considered in light of that small sample size. 34 of the 36 units reported stillbirth outcomes at both baseline and re-audit. Across these sites the average stillbirth rate at baseline was 0.6% and at re-audit 0.9% an increase of 0.3 percentage points. This was not a statistically significant change at the 5% level (p=0.330).

For 22 units audited before 2019, we are able to see how the stillbirth rate has changed in the two years following re-audit. In 2020, two years after re-audit, there was an average reduction of 0.3 percentage points amongst these sites when compared to baseline.

Neonatal deaths[11]

This outcome looked at the proportion of multiple fetuses of any gestation with signs of life that died before 28 days of age.

Across all units with data at baseline and re-audit (33), the average change in neonatal death rate was a decrease from 1.4% at baseline to 1.1% at re-audit (0.2 percentage points[12]), though this change was non-significant at the 5% level (p=0.431). Two units did experience statistically significant change:

- Unit 21 decreased from 6/186 (3.2%) neonatal deaths at baseline to 0/132 (0.0%) at re-audit (p=0.043) – a reduction of 3.2 percentage points.
- Unit 15 decreased from 6/189 (3.2%) neonatal deaths a baseline to 0/158 at re-audit (p=0.034) – a reduction of 3.2 percentage points.

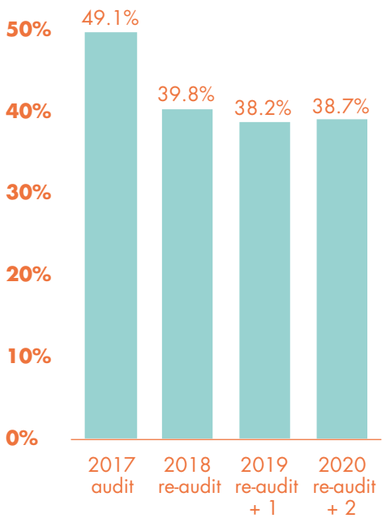
For 22 of the units audited before 2019, we can see that the initial reduction in neonatal deaths at re-audit has been sustained in the two years following.

10 The averages presented in these graphs are for units for which we have multiple audits, numbers shown in brackets.

11 Low neonatal death rates were observed across all units at both baseline and re-audit. The analysis for neonatal deaths should be considered in the light of that small sample size.

12 This is due to rounding to one decimal point. The baseline rate was 1.37% and the re-audit rate 1.14% so an average decrease of 0.23%

Neonatal Admissions (20 Units)



Neonatal admissions

This outcome looked at the numbers of babies admitted to neonatal care as a proportion of multiple fetuses. The following figures relate to the 23 units with complete data audited before 2019[13].

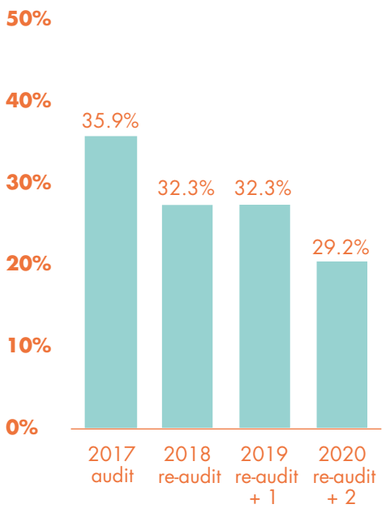
Across the units with data at baseline and re-audit (23), the average change in neonatal admission rate was a decrease from 45.5% at baseline to 39.7% at re-audit (5.8 percentage points), though this change was non-significant at the 5% level (p=0.142). Five units saw a statistically significant reduction in their neonatal admission rate:

- Unit 17 (from 46% to 24%, p<0.0001)
- Unit 15 (from 82% to 69%, p=0.0082)
- Unit 20 (from 58% to 38%, p=0.0066)
- Unit 23 (from 64% to 25%, p<0.0001)
- Unit 30 (from 53% to 19%, p=0.0137)

One unit (19) did see a statistically significant increase in their neonatal admission rate from 12% to 28%, though this was still below the national average calculated in 2014 (36.67%).

For 20 of the units audited before 2019, the reduction of ten percentage points they experienced at re-audit has been sustained over time.

Emergency C-Sections (21 Units)



Emergency Caesarean Sections

This outcome looked at the proportion of multiple pregnancies that required an emergency caesarean section.

Across all test units with data at baseline and re-audit (34), the average change in emergency caesarean section rate was a decrease from 36.8% at baseline to 35.1% at re-audit (1.7 percentage points), though this change was non-significant at the 5% level (p=0.379).

21 units (62%) decreased their rate of emergency caesarean sections. Two of these were statistically significant:

- Unit 13 (from 84% to 32%, p<0.001)
- Unit 36 (from 41% to 11%, p=0.018)

13 units (38%) saw their emergency caesarean section rate increase. Three of these were statistically significant:

- Unit 14 (from 5% to 40%, p<0.001)
- Unit 8 (from 17% to 40%, p=0.005)
- Unit 20 (from 35% to 61%, p=0.015)

For 21 of the units audited before 2019, the reduction of 3.6 percentage points they experienced at re-audit has been sustained over time and had fallen by 6.7 percentage points two years after re-audit.

13 Neonatal admissions data has been gathered from the nine units who have been audited since 2019. However some of this data shows wide variances from the overall trend. We suspect this may be to do with how neonatal admissions have been recorded on electronic systems established between baseline and re-audit and we are working with those sites to review their submissions. Unfortunately we weren't able to collect the updated figures in time for this report.

Feedback from Participants

Interviews were conducted with all the project leads who had implemented the Maternity Engagement Project since 2019.

Motivations for participation

Participants undertook the project to identify how their maternity services for multiples might be developed and patient outcomes might be improved, provide reassurance that services were in line with best practice, benchmark performance against other units, and learn from other units' practice.

Experience of the audits

Units found the audit experience to be easy and straightforward and mentioned Twins Trust providing clear expectations and useful support to conduct the audits. Several mentioned the audits revealing opportunities to improve practice that they had been previously unaware of.

"The Maternity Engagement Project makes you have a really good look at the care you're giving families and it helps you to take a step back. If I had looked at NICE guidelines prior to the audit, I would have thought 'oh yes, we meet all that', but when you actually look at it, there are things we can improve." (Unit 22)

"The initial audit highlighted to us how many of our multiple pregnancies were actually not being seen in a review clinic and were, due to appointment pressures, ending up in our maternity assessment unit with less experienced staff. So that was a big driver for change." (Unit 34)

Implementing change

In general, units felt improvements to processes and documentation (e.g. improving positional labelling or using the electronic notes system to calculate growth discordance) were easier to implement as they primarily involved raising awareness – "day to day" communication – and reminding colleagues of best practice. Other improvements (such as those involving staffing) were harder to implement. Finances, capacity and competing priorities were often cited as the main barriers to implementation.

"We created a pro forma care plan which specifies the appointments and what happens at each of those visits. So that goes in the front of everybody's notes now." (Unit 21)

"We are trying to ensure they see the same consultant and have some form of continuity and they always have their scans on the same day, so there's the makings of a twins clinic there." (Unit 22)

Support from Twins Trust

All units were very positive about the support they received from Twins Trust, mentioning the availability of expert help to answer queries, speed and clarity of response, provision of useful tools and resources (including patient information), sharing of best practice from other units, information to make the case for change with management and help to bring colleagues on board with the project.

Most interviewees felt that the progress they had made would not have been possible without the input of Twins Trust. Having external input helped leads to drive the project forward within their units. Knowing that the unit would be re-audited in particular helps leads to keep the project high on colleagues' agendas.

"Having somebody come and knowing that you have to do the audit is often the push that sometimes we need as it can be very easy to put something off. 'I'm really busy this month. I'll do it next month' and then next month you are busy again." (Unit 21)

"I think if we had just done the project internally, it wouldn't have been as effective, in fact I don't think it would have happened. Having an external partner helped get people's attention – it helped pull higher up managers into meetings that probably they would never have joined." (Unit 22)

This echoes the feedback received from participants audited before 2019. 90% of professionals agreed that "if we hadn't done the Maternity Engagement Project we would not have achieved as much positive change" (only 6% disagreed) and 74% agreed that "the Maternity Engagement Project was the catalyst for positive change in care for women expecting multiples in our unit" (14% disagreed).

Benefits of participation

Units felt that the main benefits of participating in the project were the changes they had managed to implement to bring their unit closer to the NICE guidelines and improve care for women with multiple pregnancies. Some were using their involvement in the project to reassure women expecting multiples that they would receive good care at their unit.

"I don't know whether appointing a specialist midwife would have necessarily happened or happened as quick as it did without the audit. That's a massive factor and it has improved the service." (Unit 36)

"It's a big selling point to the women that we are involved with the Twins Trust. To have the charity's endorsement to say we've been audited and that we've maintained standards gives the women confidence that the team knows what it's doing." (Unit 35)

Feedback for Twins Trust

All the units were very positive about the support they received, advice for Twins Trust focussed on how the charity could extend their support to units. Several units would have valued a third audit in order to assess progress over a longer period of time (especially when changes take longer to implement) and maintain the progress and momentum they had generated.

Overall satisfaction

"I would just recommend anyone who heads up a service to get in touch with Twins Trust and go for it. I didn't ever feel that they were judgmental. It was a positive experience for us and anybody that wants their service to be as good as it can be would welcome it." (Unit 35)

"The project empowers you to give the women the care that they need and deserve." (Unit 16)

All unit leads recommended that other units participate in the project.

Fiveways

This evaluation was conducted by Fiveways **www.fivewaysnp.com** supported by Select Statistics **www.select-statistics.co.uk**

Fiveways provides the insight for charities to maximise their impact through audience research and project evaluation. Select Statistics use statistical expertise to extract actionable insights from data, improve decision making and drive growth.

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