Overview of the Saving Babies Lives Care Bundle version 2

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Abstract

Saving Babies Lives Care Bundle version 2 is a care bundle developed by NHS England. It aims to reduce stillbirths and neonatal deaths by improving the health of pregnant women and identifying areas of care where there is evidence or best practice aimed at reducing perinatal mortality. The care bundle consists of 5 elements, element 1: smoking cessation, element 2: fetal growth restriction, element 3: reduced fetal movements, element 4: fetal monitoring and element 5: prevention of preterm birth. This article is focussed on version 2 of the care bundle with the care bundle being updated following an evaluation of version 1, which highlighted that although it was likely Saving Babies Lives Care Bundle version 1 had reduced still birth rates there had been increases in interventions, including ultrasound scans, induction of labour (IOL) and caesarean section (CS). This article aims to provide a summary of the recommendations within the care bundle and highlight the important points.

Keywords care bundle; neonatal death; perinatal mortality; saving babies lives; stillbirth

This second version of the Saving Babies Lives Care Bundle version 2 (SBLCB v 2) was published in March 2019. This aimed to build upon the success of the first care bundle, but address some of the issues identified within the SPIRE review and its recommendations and implementation into clinical practice. Adoption of SBLCB v1 was associated with a fall in stillbirth cases by approximately 20%, and whilst this cannot be directly attributed to the care bundle it is likely to have contributed. However, alongside the decrease in stillbirth rates, the evaluation demonstrated a concomitant rise in preterm birth, ultrasound scans, IOL at early term (37−39 weeks) and caesarean sections. Thus, by seeking to capture all fetuses at risk, the rate of pregnancy intervention increased in women who were at only marginally greater risk of fetal growth restriction (FGR) related stillbirth. Increasing rates of early term induction of labour increased the risk of admission to the neonatal unit and potential

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long term adverse effects e.g. special educational needs. Using early term induction of labour as the intervention, the number needed to treat (NNT) was 700; ie 700 inductions were needed to prevent one stillbirth. For every 10 inductions at 37 weeks gestation, one baby will be admitted to the neonatal unit for supportive treatments. Version 2 of the Stillbirth Care Bundle focuses on identifying the pregnancies the greatest risk and only recommends the offer of induction *before* 39 weeks in these high risk scenarios.

The care bundle consists of 5 key elements, each designed to reduce perinatal mortality through a reduction in stillbirth and neonatal death. Each element details the best available evidence to inform practice and has also established outcome indicators which should be collected and monitored by all maternity providers.

Significant changes from version 1 of the care bundle to version 2 include: i) the addition of a fifth element; prevention of preterm birth, ii) a focus on intervention in pregnancies at the highest risk and iii) outcome measures designed to facilitate continuous improvement. The addition of an element for preterm birth recognizes that in order to achieve a reduction in perinatal mortality we must reduce neonatal death secondary to prematurity by a strategy of "Predict, Prevent and Prepare." Predicting accurately when a preterm birth is likely to occur is important to allow preparation and optimization of care to ensure the neonate is born in optimal condition and in an optimal setting, thus reducing mortality and morbidity.

Smoking in pregnancy is associated with significant fetal mortality and neonatal morbidity. Element 1 focusses on smoking reduction as there is good evidence that reducing smoking improves maternal and fetal outcomes. Smoking cessation, or a reduction in cigarette smoking is directly associated with a reduction in stillbirth, improved fetal growth and a fall in the risk of preterm birth. The care bundle advocates the use of carbon monoxide (CO) testing in all women, to identify those who will benefit from targeted intervention to reduce exposure, with testing at booking and at 36 weeks. Women with elevated CO readings (4 ppm or above) should be referred to a smoking cessation service on an opt out basis. The smoking cessation service should be a specialist service for pregnant women, which includes feedback and follow-up of women. The process indicators in this element aim to ensure all women have CO testing at the recommended time points with the outcome indicators reviewing the success of this process in reducing smoking. The overall success of this element depends on both the recording of CO levels in pregnancy but also availability of interventions to reduce smoking.

Element 2 focusses on fetal growth, and outlines risk assessment, strategies for prevention and fetal surveillance, for those at risk. The SPIRE evaluation identified that version 1 resulted in a 59% increased antenatal detection of small for gestational age (SGA) babies but with a resultant increase in the number of ultrasound scans and interventions at or around the time of birth (including inductions and caesarean sections). Prevention of fetal growth restriction is central to reducing both stillbirth and prematurity. In addition to smoking reduction as detailed in element 1, one of the most effective preventative strategies is the prevention of pre-eclampsia through the administration of low dose aspirin in women with risk factors.

Prediction focuses on identifying risk factors for fetal growth disorders and distinguishing between SGA and FGR, and between early and late onset FGR. SGA is defined as weighing <10th centile but most unborn babies in this group are healthy small babies, where intervention is not indicated. Fetal growth restriction is a pathological state associated with an increased risk of stillbirth. It can occur at centiles above the 10th, although the risk of stillbirth is greatest for growth restricted babies which are also SGA. One of the reasons that the NNT is so high in the prevention of stillbirth is that we are very bad at distinguishing between healthy small babies, and those which are truly growth restricted. Pregnancies deemed at low risk of fetal growth disorders have serial symphysio-fundal height (SFH) measurements, and those at moderate or high risk are offered serial ultrasound scans. For those in the moderate risk group the key concern is of *late* onset FGR and scans start at 32 weeks of gestation. Within the high risk group there is a need to scan earlier, from 28 weeks gestation. However, if uterine artery Doppler measurements taken at the time of the mid-trimester ultrasound scan are normal, then serial scanning can be deferred again until 32 weeks. The outcomes for this element involve auditing the process of risk assessment and by measuring the proportion of babies detected before birth who have a birthweight <3rd centile at >37+6 weeks gestation. RCOG guidance provides recommendations for the monitoring of SGA and FGR fetuses, with the care bundle highlighting that delivery should not occur prior to 39 weeks unless there is evidence of FGR (as opposed to just SGA).

Element 3 provides guidance regarding reduced fetal movements (RFM) and gives guidance on raising awareness among pregnant women and ensuring providers have protocols in place for women presenting with RFM. RFM have been retrospectively associated with stillbirths, yet it is difficult to determine which women who present with RFM are at increased risk. The first part of this element is to ensure all women receive information regarding monitoring fetal movements and get given an information leaflet describing normal fetal movements. Each unit must have a pathway developed for managing RFM. The AFFIRM study evaluated fetal ultrasound assessment of growth, liquor volume and umbilical artery Doppler in women who presented with RFM after 26 weeks' gestation, combined with IOL for recurrent episodes of RFM after 37 weeks' gestation. This did not significantly reduce stillbirths and was associated with an increase in IOL and caesarean section. Although no difference in stillbirth was detected this care pathway reduced the number of SGA fetuses born at or after 40 weeks' gestation.

The RFM element advocates the use of the *computerized* CTG to remove human error in interpretation. There is currently limited evidence to assess the role of ultrasound in RFM however it is recommended by SBLCBv2. IOL should be offered to women with recurrent RFM after 38+6 weeks gestation, and women presenting for the first time after 38+6 should be assessed for other risk factors and IOL discussed. The process indicators for this element include audit of the number of women who receive information on RFM by 28 weeks, and the number of women with RFM who are appropriately monitored with a computerized CTG. The RFM outcome measure includes the number of women who experience stillbirth where RFM were thought to complicate the pregnancy, and the number of women induced with RFM where this was the only indication.

Element 4 provides guidelines and standards for effective fetal monitoring in labour with the aim of reducing avoidable fetal morbidity and intrapartum stillbirth. It responds to data from the RCOG's Each Baby Counts report and subsequent recommendations that recognize that for fetal monitoring to be effective women need to be appropriately risk assessed at the start of and during labour, and that whatever monitoring is employed [intermittent auscultation (IA) or continuous electronic (CEFM)] this needs to be effective, interpreted correctly and appropriate action taken when there are concerns. This element contains guidance for a programme of training around risk assessment and interpretation of monitoring, and a need for an assessment of competence. It highlights the need for a fresh eyes (CEFM) and fresh ears (IA) approach. The process measures for this element are monitoring of staff training and the outcome measures review failures in CTG monitoring in the intrapartum setting.

Element 5 is the new element within SBLCBv2 and was developed primarily to facilitate a reduction in preterm birth. As this element developed it was expanded to include recommendations on prediction, prevention and preparation for preterm birth aiming to not only reduce preterm birth but to ensure when preterm birth occurs there is appropriate antenatal optimization to improve neonatal outcomes. All women should be risk assessed at booking to identify factors which might increase the chances of early delivery. Women should be stratified into low, intermediate and high risk of preterm birth. Women with intermediate- and high-risk factors are directed to prediction pathways employing trans vaginal cervical length scanning and interventions such as smoking cessation, use of progestogens and cervical cerclage. In addition, when preterm birth seems very likely, the situation should be optimized for the newborn by the administration of steroids and magnesium sulphate (for neuroprotection) and by ensuring the place of birth is appropriate for the level of neonatal care required.

The process outcomes for element 5 include the percentage of women receiving appropriately timed steroids and magnesium sulphate, and the percentage of women birthing in the correct level unit. The outcome indicators include the rate of second trimester miscarriage and preterm birth.

In summary, SBLCBv2 employs comprehensive strategies to reduce perinatal mortality and addresses the issues raised in the evaluation of the first version. It includes a greater emphasis on continuous improvement and also references other important initiatives such as continuity of carer models, healthy pregnancy messages and personalized care with choice. ◆

FURTHER READING

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