Safer Baby Bundle Masterclass

- Smoking Cessation
- Fetal Growth Restriction (FGR)
- Decreased Fetal Movement (DFM)
- Side Sleeping
- Timing of Birth

Stillbirth CENTRE OF RESEARCH EXCELLENCE

Safer Baby Bundle
WORKING TOGETHER TO REDUCE STILLBIRTH

Version 9.0 November 2023

Contents

Safer Baby Bundle

WORKING TOGETHER TO REDUCE STILLBIRTH

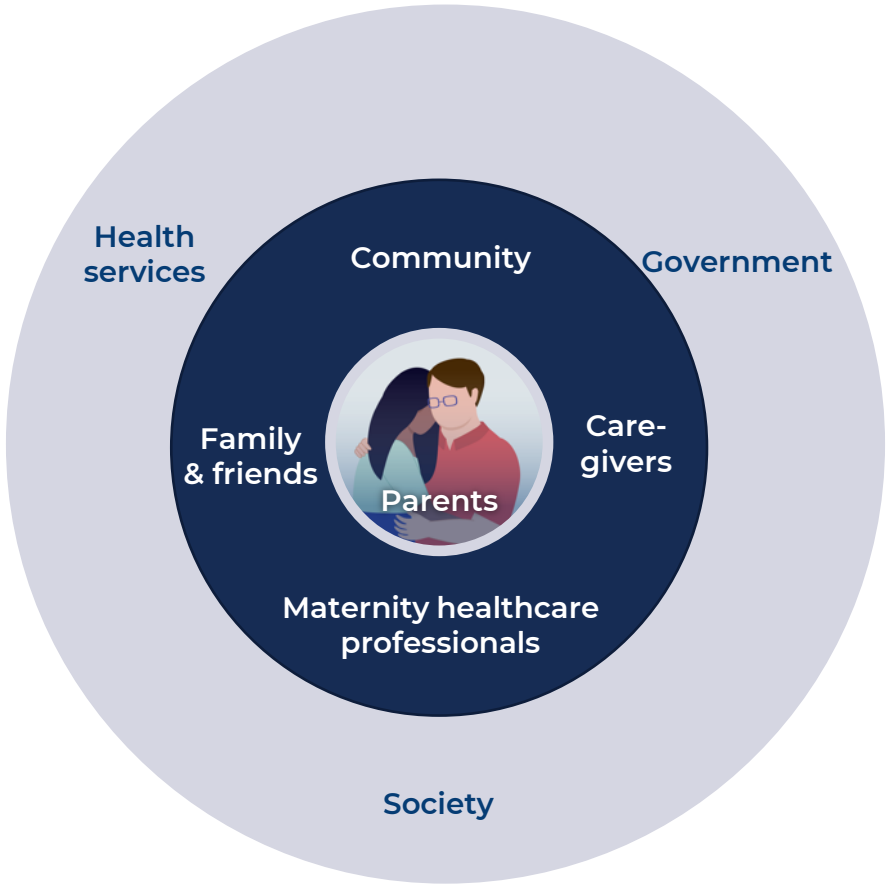
Before we get started

The **Safer Baby Bundle** is based on the best available evidence at the time of its preparation.

- It is being led by the Stillbirth Centre of Research Excellence (Stillbirth CRE).
- The Stillbirth CRE work in partnership with health departments, parent organisations, professional colleges, researchers, clinicians and women.

National Impact of Stillbirth[1-4, 67-68]

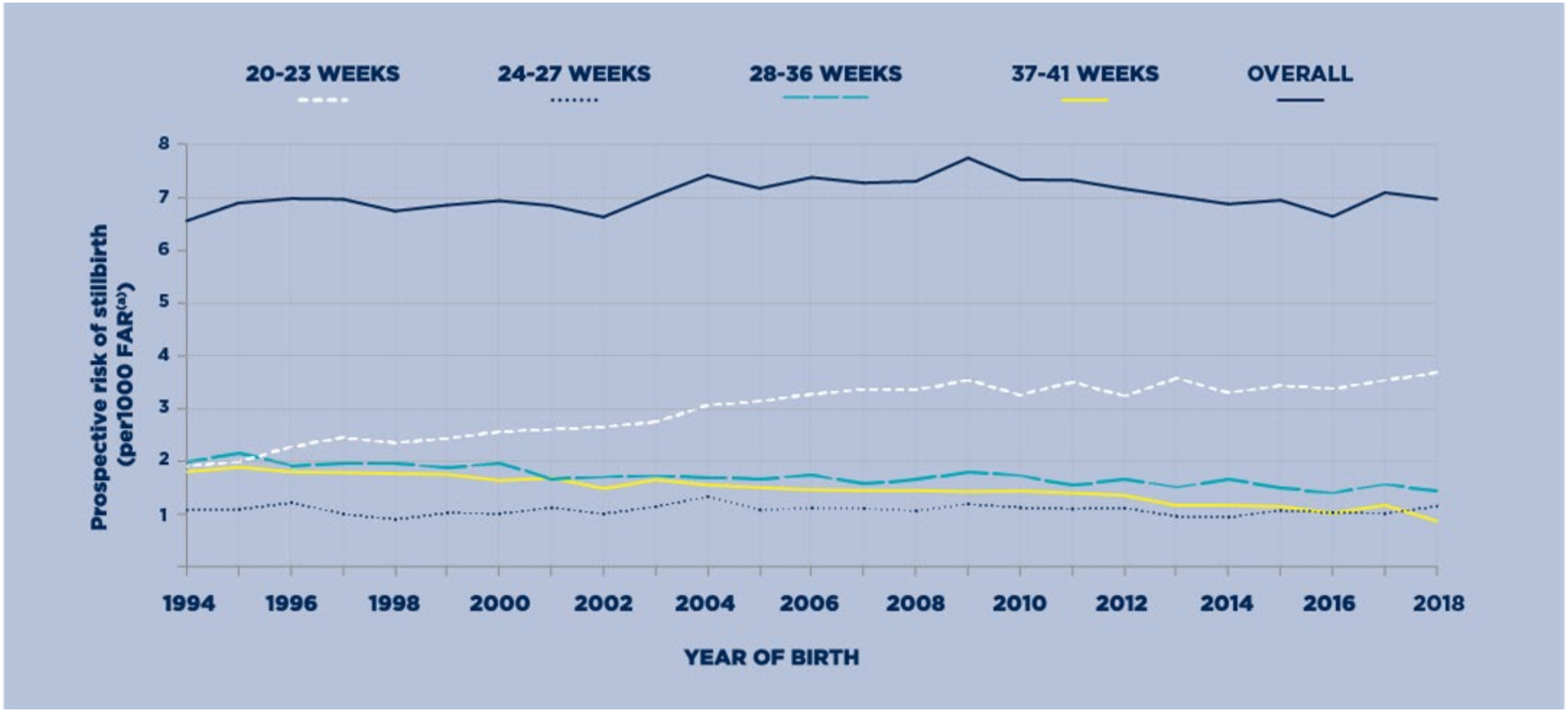
Annually, 2270 stillbirths ≥ 20 weeks gestation occur
(710 stillbirths ≥ 28 weeks)



1. **Parents**
   - Family and friends, care-givers, maternity healthcare professionals, community
2. **Health services, society, government**
   - Increased risk of family breakdown
   - Stigma, abandonment and abuse
   - Negative effect on staff
3. **Health services, society, government**
   - Increased healthcare costs
   - Reduced earning from employment, maternity and paternity leave, and healthcare expenses

Australian Stillbirth rates

By gestation 1994 to 2018 [5,6]

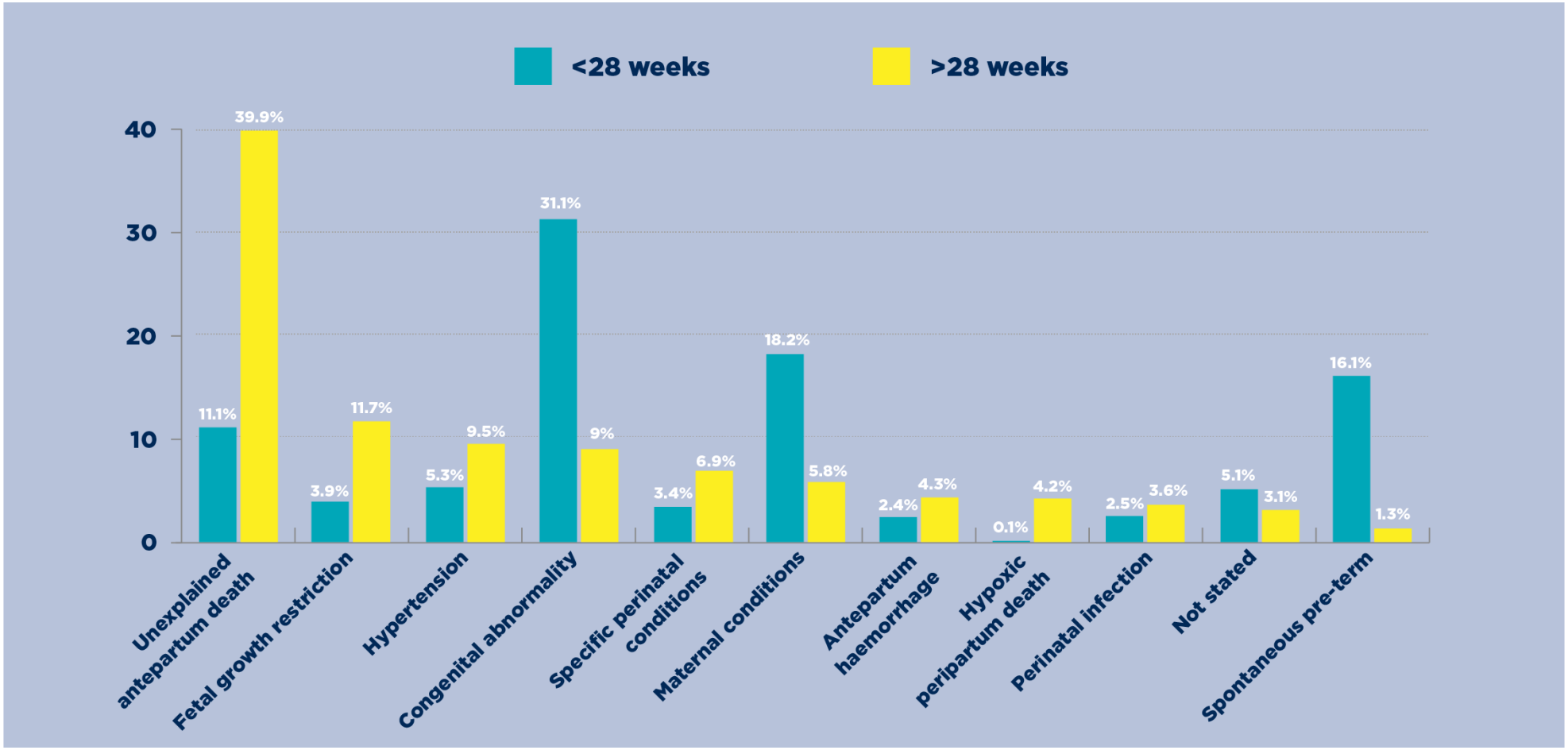


Australian Stillbirth rates[6]

- Stillbirth disproportionately affects Aboriginal and/ or Torres Strait Islander women[7]
- In 2020 the stillbirth rate for Aboriginal and Torres Strait Islander women was **11.9 per 1000** births[8]
- Vs the rate for non-Indigenous women of **7.4 per 1000**[8]
- Migrant and refugee populations, rural and remote communities and socio-economically disadvantaged women also face significantly increased risks[7]

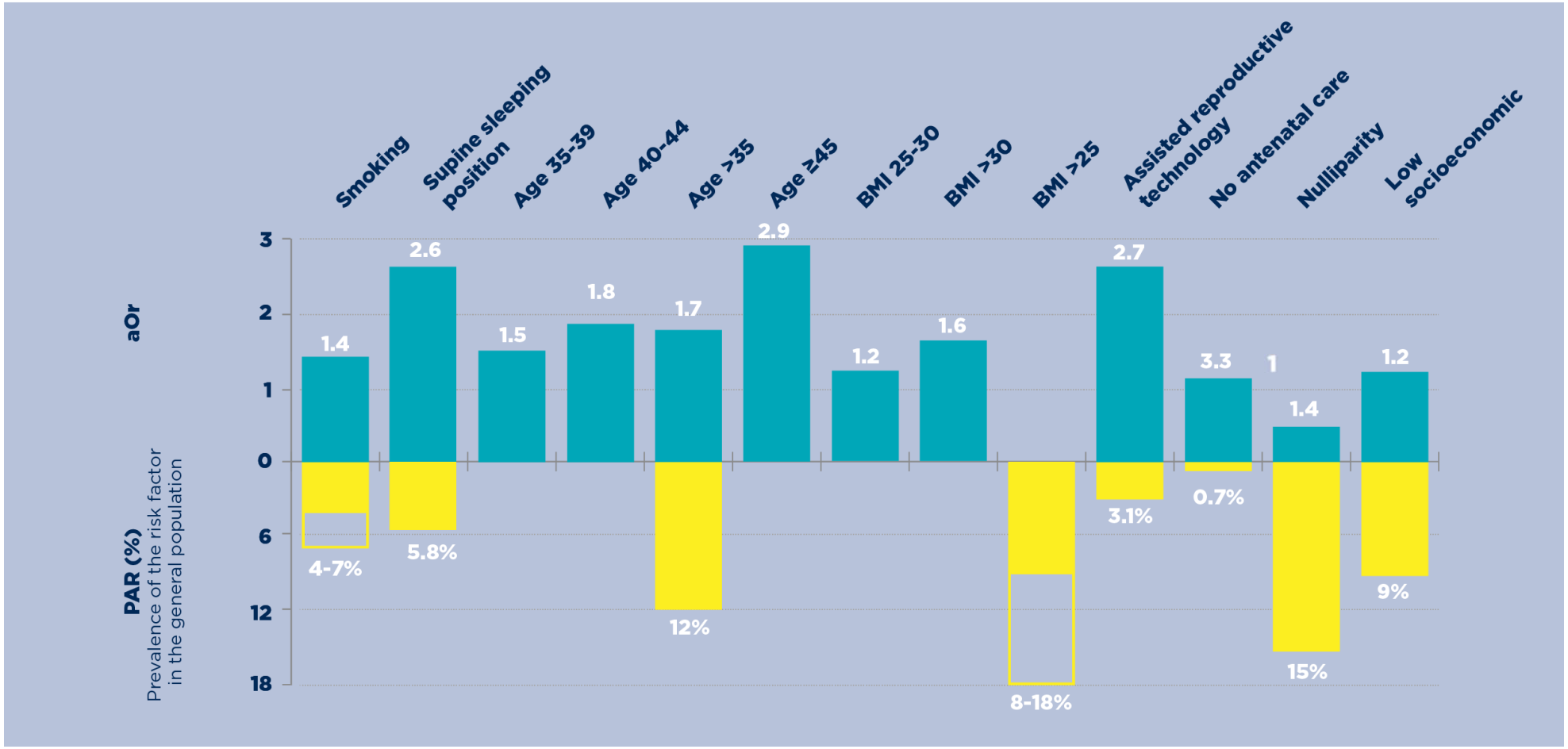
Causes of Stillbirth in Australia[9]

Stillbirth cause of death by early and late gestions



What are the stillbirth risk factors?

Maternal[10-17]



What are stillbirth risk factors?

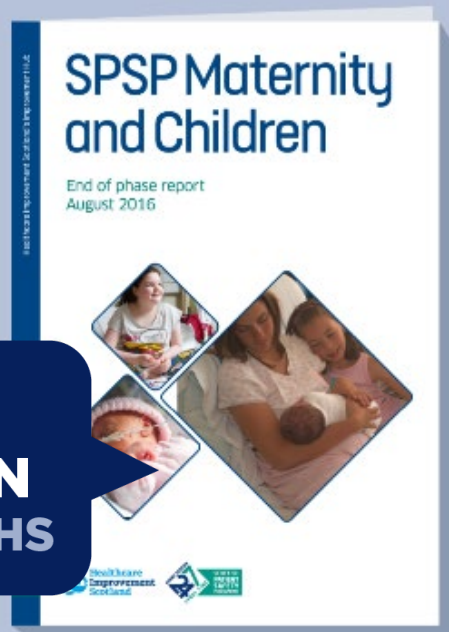
Pregnancy and medical[10-17]

We know that ‘bundles of care’ can save lives[18-21]

Saving Babies Lives Care Bundle (SBLCB) UK

20% REDUCTION IN STILLBIRTHS

Scottish Patient Safety Program (SPSP) Scotland



22.5% REDUCTION IN STILLBIRTHS

What is the Australian Safer Baby Bundle?

The Safer Baby Bundle is a national initiative with five evidence-based elements to address key areas where improved practice can reduce the number of stillborn babies.


Smoking Cessation


Fetal Growth Restriction (FGR)


Decreased Fetal Movement (DFM)


Side Sleeping


Timing of Birth

GOAL

Reduce stillbirth from 28 weeks' gestation by at least 20% by 2025.

Smoking Cessation

Evidence summary

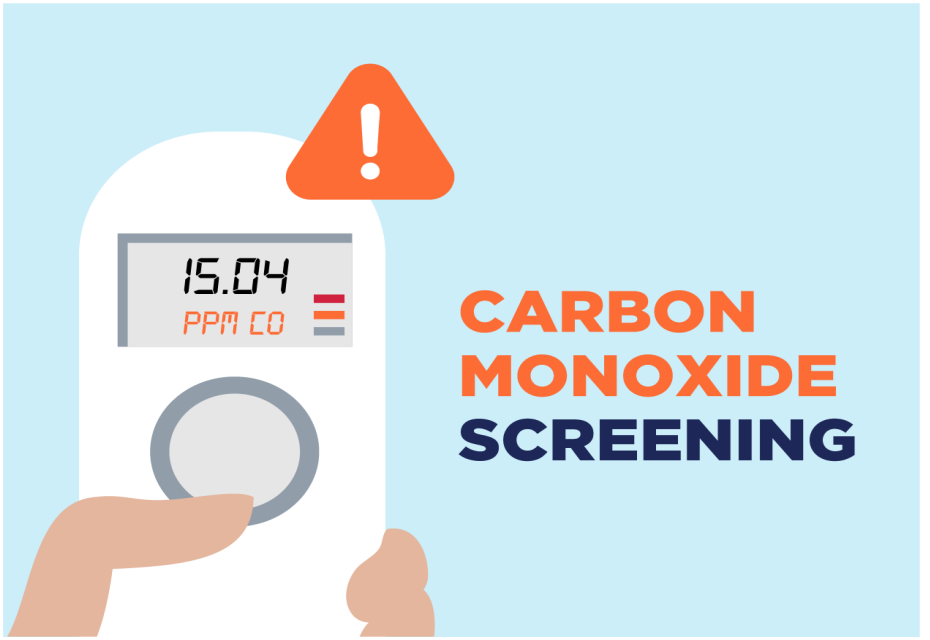
Stillbirth CRE position statement ‘Smoking – one of the most important things to prevent in pregnancy and beyond’[22]

READ MORE

The evidence 23-27

A combined approach to smoking cessation has shown to be most effective. This includes:

- **Behavioural intervention** – 'Ask, Advise, Help' model
- **Carbon monoxide monitoring** - at the first antenatal visit for all women
- **Consideration of nicotine replacement therapy (NRT)** - after careful discussion around risk and benefits
- Detailed information on NRT available through Quit Victoria website
- Use of e-cigarettes (vaping) is not recommended in pregnancy



The recommendations

Steps to assessing and managing risk factors

'Ask, Advise, Help' model of care

At first antenatal visit

- Screen and document tobacco use on the antenatal record
- Where available, record the exhaled breath carbon monoxide (CO) reading for all women (and their partners where possible)

At each subsequent antenatal visit

- Reassess smoking status
- At the 28 week visit, re-assess smoking status **and** exposure to passive smoking
- If CO monitor is available, record exhaled breath carbon monoxide (CO) reading

Ask all women about their smoking status using the following multiple-choice format:

Can I ask you about your smoking status? Which statement best applies to you?

- I smoke more since pregnant
- I smoke less since pregnant
- I am smoking the same
- I used to smoke but quit
- I have never smoked

The recommendations[27,28]

The 3 step 'Ask, Advise, Help' model of care

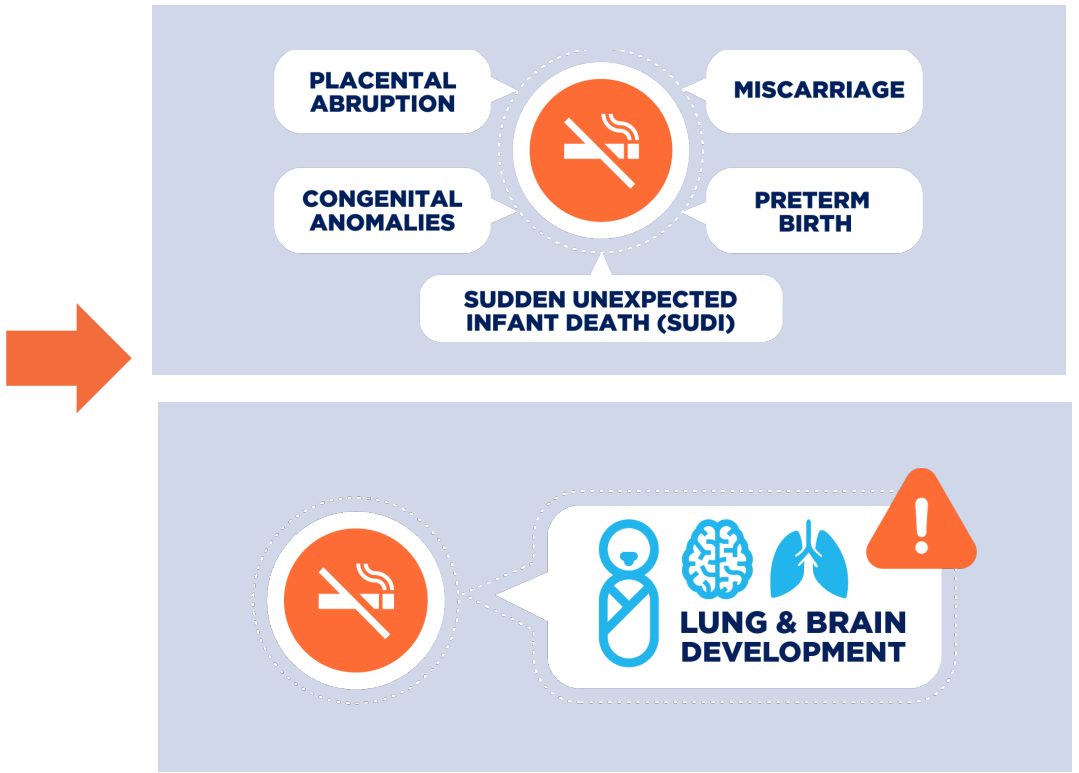
ASK | ADVISE | HELP

At first antenatal visit

- For women who are smokers or recent quitters, advise them of the benefits of quitting
- Explain the importance of smoking cessation

At each subsequent antenatal visit

- Offer personalised advice on how to stop smoking
- Reinforce the benefits of quitting and remaining smoke free at any state in pregnancy



The recommendations

ASK | ADVISE | HELP

The 3 step 'Ask, Advise, Help' model of care

At first antenatal visit

Offer to help:

- Refer to Quitline
- Consider offering nicotine replacement therapy (NRT)

At each subsequent antenatal visit

- Consider offering nicotine replacement therapy[27]

Quitline 13 7848

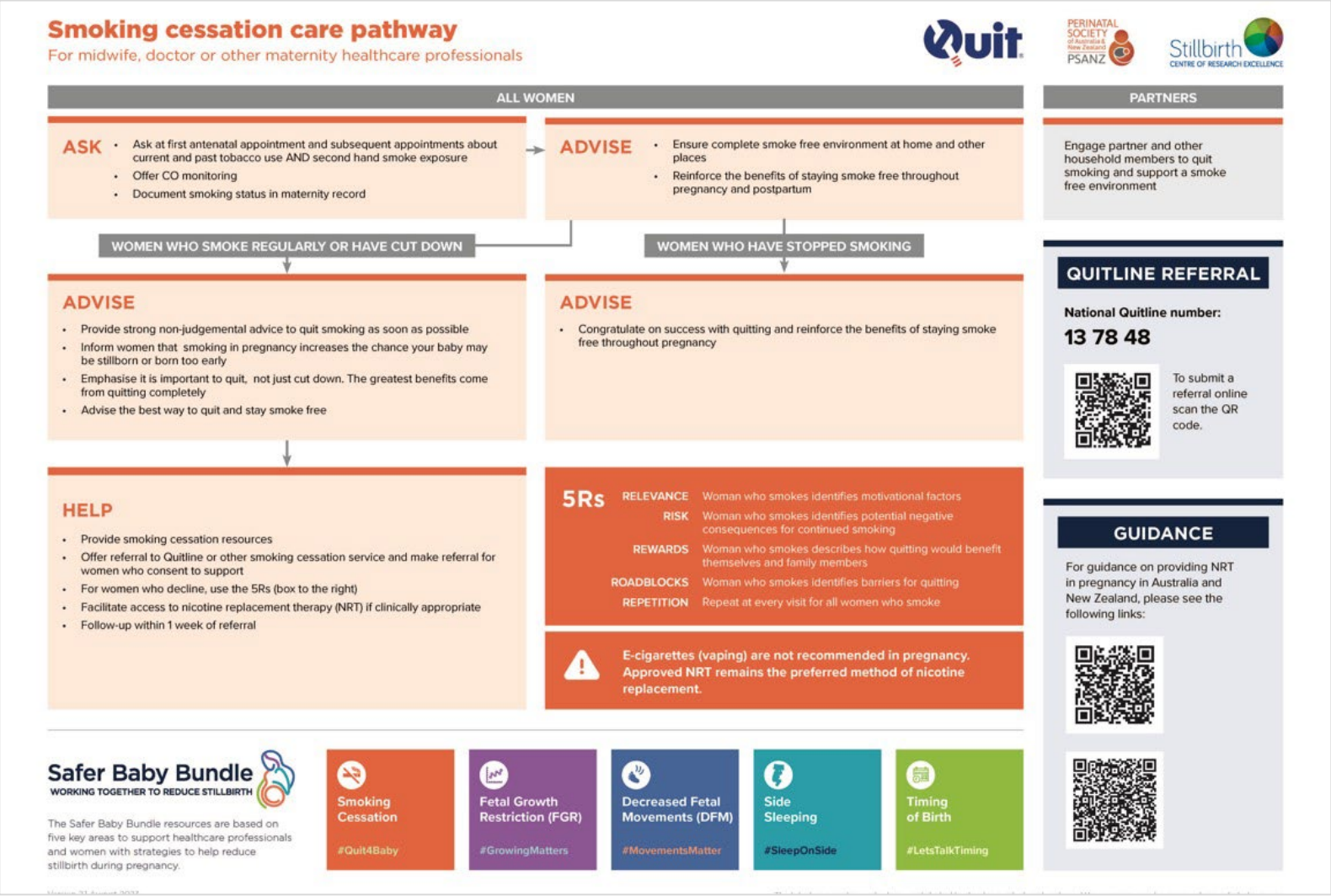
It's part of routine care for us to refer all pregnant women who smoke to Quitline.

They've helped a lot of pregnant women quit. It's a free, confidential service. I can make that referral now, and they'll give you a call in a few days.

How does that sound?

Resources

Pathway



Smoking cessation care pathway

For midwife, doctor or other maternity healthcare professionals

ALL WOMEN

ASK
- Ask at first antenatal appointment and subsequent appointments about current and past tobacco use AND second hand smoke exposure
- Offer CO monitoring
- Document smoking status in maternity record

ADVISE
- Ensure complete smoke free environment at home and other places
- Reinforce the benefits of staying smoke free throughout pregnancy and postpartum

PARTNERS

Engage partner and other household members to quit smoking and support a smoke free environment

WOMEN WHO SMOKE REGULARLY OR HAVE CUT DOWN

ADVISE
- Provide strong non-judgemental advice to quit smoking as soon as possible
- Inform women that smoking in pregnancy increases the chance your baby may be stillborn or born too early
- Emphasise it is important to quit, not just cut down. The greatest benefits come from quitting completely
- Advise the best way to quit and stay smoke free

HELP
- Provide smoking cessation resources
- Offer referral to Quitline or other smoking cessation service and make referral for women who consent to support
- For women who decline, use the 5Rs (box to the right)
- Facilitate access to nicotine replacement therapy (NRT) if clinically appropriate
- Follow-up within 1 week of referral

WOMEN WHO HAVE STOPPED SMOKING

ADVISE
- Congratulate on success with quitting and reinforce the benefits of staying smoke free throughout pregnancy

5Rs

RELEVANCE	Woman who smokes identifies motivational factors
RISK	Woman who smokes identifies potential negative consequences for continued smoking
REWARDS	Woman who smokes describes how quitting would benefit themselves and family members
ROADBLOCKS	Woman who smokes identifies barriers for quitting
REPETITION	Repeat at every visit for all women who smoke

E-cigarettes (vaping) are not recommended in pregnancy. Approved NRT remains the preferred method of nicotine replacement.

QUITLINE REFERRAL

National Quitline number:

13 78 48

To submit a referral online scan the QR code.

GUIDANCE

For guidance on providing NRT in pregnancy in Australia and New Zealand, please see the following links:

Safer Baby Bundle

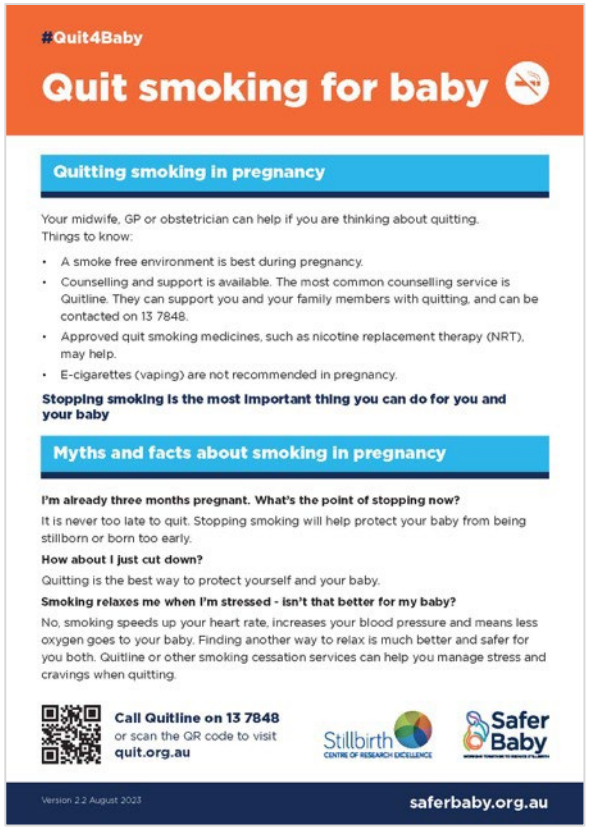
WORKING TOGETHER TO REDUCE STILLBIRTH

The Safer Baby Bundle resources are based on five key areas to support healthcare professionals and women with strategies to help reduce stillbirth during pregnancy.

- Smoking Cessation #Quit4Baby
- Fetal Growth Restriction (FGR) #GrowingMatters
- Decreased Fetal Movements (DFM) #MovementsMatter
- Side Sleeping #SleepOnSide
- Timing of Birth #LetsTalkTiming

Resources

Poster and Flyer



Resources

Social media tiles

Resources

Videos modelling conversations about quitting smoking with pregnant women using ‘Ask, Advice, Help’ model of care.

https://vimeo.com/363969790

https://vimeo.com/364923189

https://vimeo.com/363974014

https://vimeo.com/363978721

Implementation

Questions for discussion:

- What is the process of referring a woman to Quitline in your service?
- What resources (e.g. smokerlyzer and SBB resources) or equipment limitations do you have? How can these be overcome?
- How will you monitor women's engagement with smoking cessation services?

Fetal Growth Restriction (FGR)

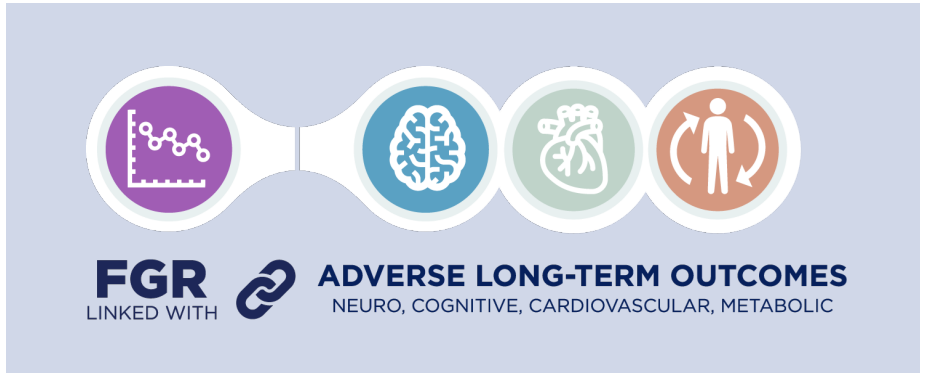
Evidence summary

Position Statement: Detection and management of women with Fetal Growth Restriction in singleton pregnancies[29]

READ MORE

The evidence

- Improving the detection and management of FGR/ SGA is an important strategy to reduce stillbirth[30,31]
- If FGR is present, but it is NOT detected, the fetus is eight times more likely to be stillborn[32,33]
- Less than 1/3 of growth restricted/small for gestational age fetuses are detected antenatally[34]
- Educational programs for maternity care providers have been shown to improve the detection of SGA/FGR and reduce stillbirth rates[35]



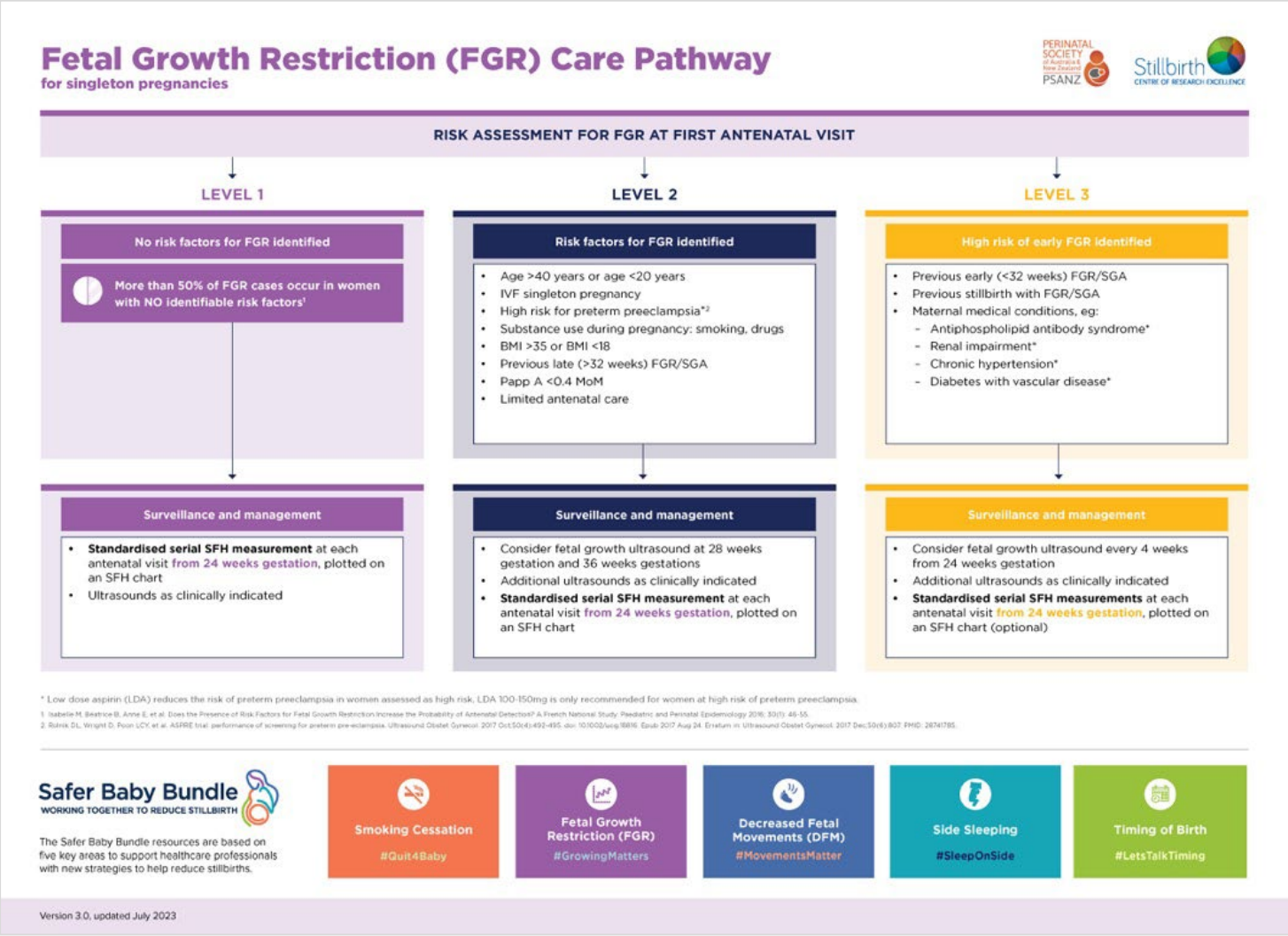
The recommendations

Steps to assessing and managing risk factors[32,34-37]

- **Assess all women for risk factors** at booking and at each antenatal visit and provided with information about FGR
- **Standardise SFH measurement** for all maternity healthcare professionals
- **Consider low dose aspirin** (150 mg) for women at increased risk of preterm preeclampsia[69]
- **Discuss with women the recommended plan** for monitoring fetal growth in pregnancy based on risk factor assessment
- **Frequency of ultrasound surveillance** should be based on FGR risks, prior history and service capability
- Where modifiable risk factors exist, **provide advice and support to women** (e.g. smoking and substance abuse cessation)

Resources

Care pathway[38]



Resources

Poster and Flyer

Resources

Social media tiles

Implementation

Questions for discussion:

- Do you have a checklist for assessing FGR risk factors at every visit?
- Do you have timely and affordable access to ultrasound scanning for women with suspected/confirmed FGR?

Decreased Fetal Movement (DFM)

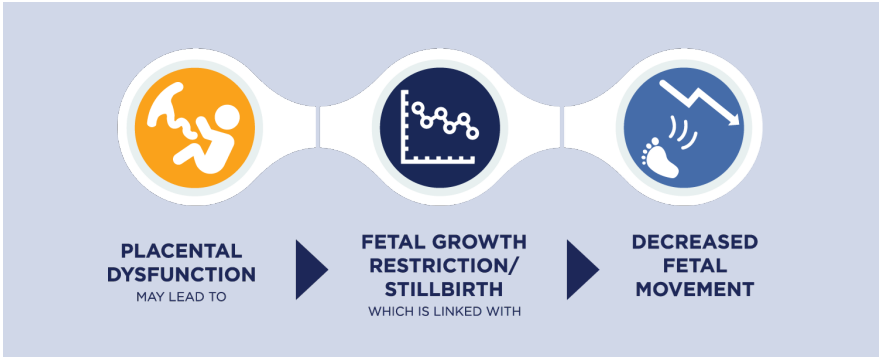
Evidence summary

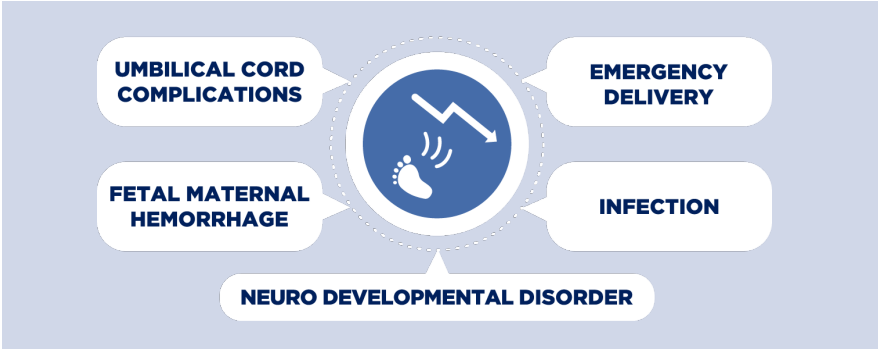
Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation[39]

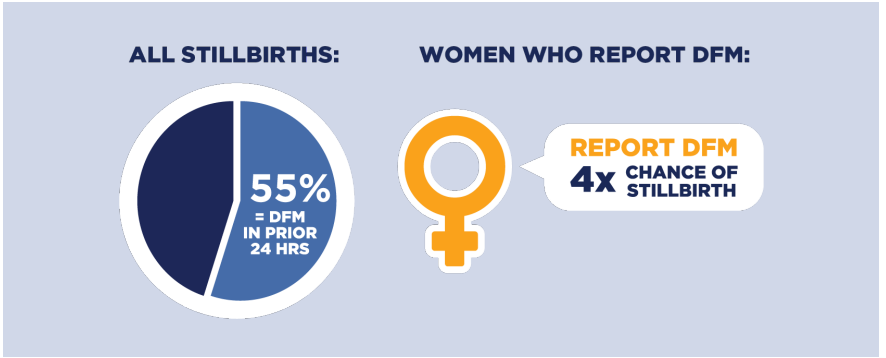
READ MORE

The evidence: fetal movements[40-52]

- Maternal perception of fetal movement has long been an indicator of fetal well-being.
- No definition of DFM has been shown to perform better than a woman's perception.
- Concerns about a reduction in strength and/or frequency is associated with up to a 4-fold increase in stillbirth.
- The mechanism is through to be placental insufficiency leading to the fetus conserving energy.
- DFM is associated with slow fetal growth and other adverse outcomes.
- Many women who experience stillbirth report being concerned about DFM in the day's prior.
- All pregnant women should be given information about what to expect in regard to fetal movements, including that strength and frequency normally stay the same or increase as pregnancy advances and that healthy fetuses are most active in the evening.[42]

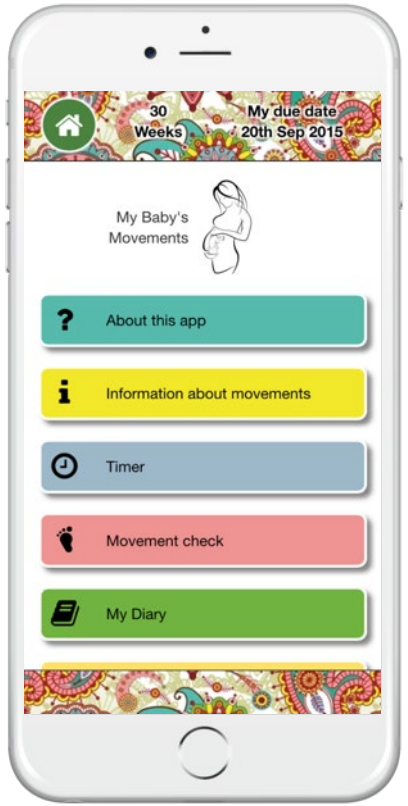






The evidence: education to improve outcomes for women with DFM[40-52]

- A 2015 Cochrane Review concluded that there was no benefit for kick counting.
- Observational studies of education for women and their health care provider about detection and management of DFM suggests benefit.
- Two subsequent large scale cluster randomised trials of similar interventions have not shown a reduction in stillbirths. However, all existing trials have had limitations and the evidence remains unclear.
- Need for high level evidence to inform the optimal management protocol.
- The large UK AFFIRM trial [50] also showed a reduction SGA babies born after 40 weeks associated with an increase in IOL, caesarean section and neonatal admission to special care.
- The MBM trial (Australia and New Zealand) also showed no reduction in stillbirth rates but less intervention than AFFIRM and recommended to continue the MBM approach.
- Safer Baby Bundle resources are based on those used in the MBM trial.



The recommendations

Steps to assessing and managing risk factors

All women should be counselled about the importance of fetal movement **before 28 weeks**

INITIAL RESPONSE – Don't delay seeking help, do not stimulate with food or fluid!

CLINICAL ASSESSMENT –Take a detailed clinical history, identify risk factors, listen to FHR

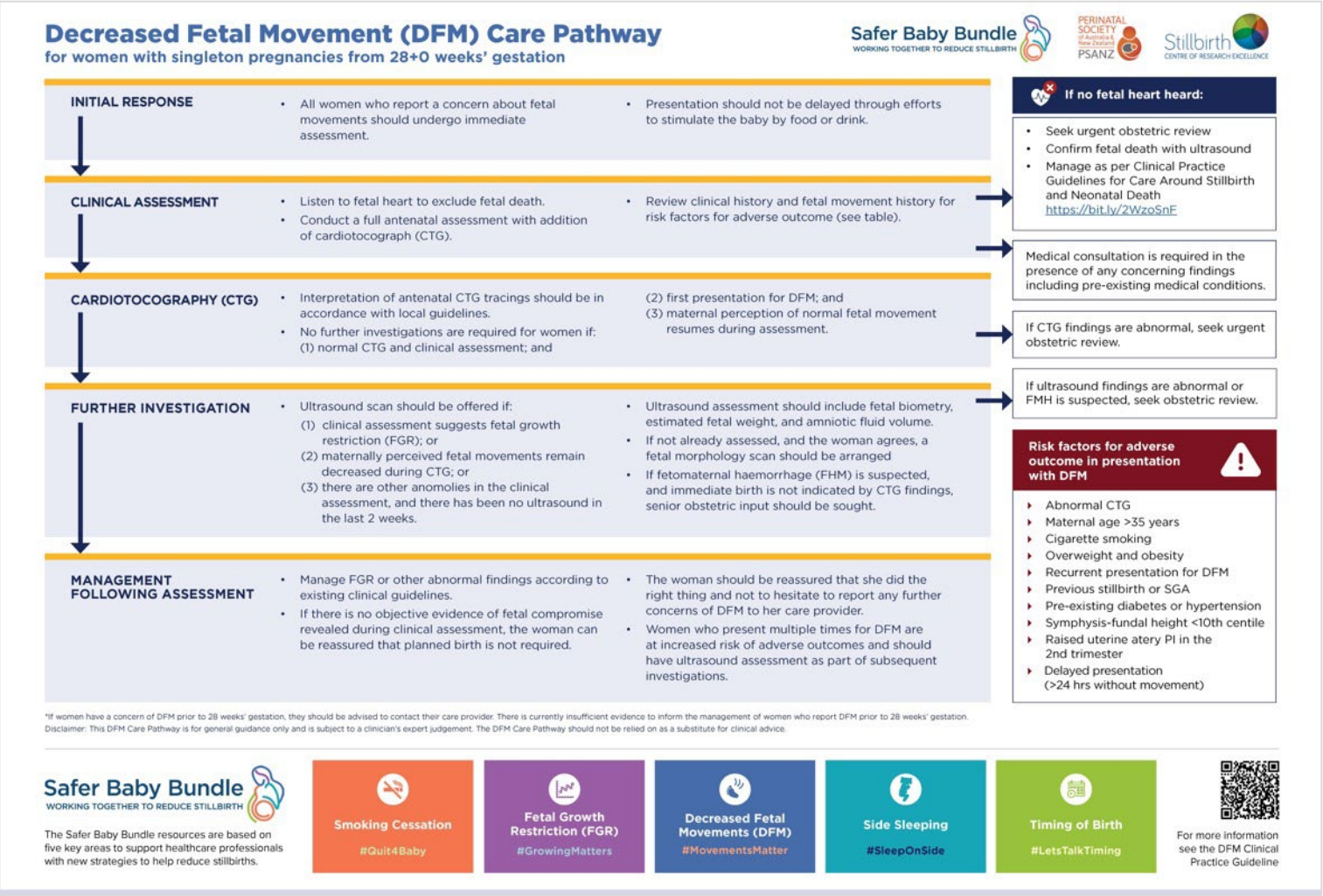
CARDIOTOCOGRAPHY (CTG) – Interpret antenatal CTG according to local guidelines

FURTHER INVESTIGATION – Consider fetomaternal haemorrage testing if clinically indicated

BIRTH PLANNING – After further investigations it may be necessary to discuss a planned birth

Resources

Care Pathway [53]



Decreased Fetal Movement (DFM) Care Pathway

for women with singleton pregnancies from 28+0 weeks' gestation

Safer Baby Bundle — WORKING TOGETHER TO REDUCE STILLBIRTH

PERINATAL SOCIETY of Australia & New Zealand PSANZ

Stillbirth CENTRE OF RESEARCH EXCELLENCE

INITIAL RESPONSE

- All women who report a concern about fetal movements should undergo immediate assessment.
- Presentation should not be delayed through efforts to stimulate the baby by food or drink.

CLINICAL ASSESSMENT

- Listen to fetal heart to exclude fetal death.
- Conduct a full antenatal assessment with addition of cardiotocograph (CTG).
- Review clinical history and fetal movement history for risk factors for adverse outcome (see table).

CARDIOTOCOGRAPHY (CTG)

- Interpretation of antenatal CTG tracings should be in accordance with local guidelines.
- No further investigations are required for women if:
  (1) normal CTG and clinical assessment; and
  (2) first presentation for DFM; and
  (3) maternal perception of normal fetal movement resumes during assessment.

FURTHER INVESTIGATION

- Ultrasound scan should be offered if:
  (1) clinical assessment suggests fetal growth restriction (FGR); or
  (2) maternally perceived fetal movements remain decreased during CTG; or
  (3) there are other anomolies in the clinical assessment, and there has been no ultrasound in the last 2 weeks.
- Ultrasound assessment should include fetal biometry, estimated fetal weight, and amniotic fluid volume.
- If not already assessed, and the woman agrees, a fetal morphology scan should be arranged
- If fetomaternal haemorrhage (FHM) is suspected, and immediate birth is not indicated by CTG findings, senior obstetric input should be sought.

MANAGEMENT FOLLOWING ASSESSMENT

- Manage FGR or other abnormal findings according to existing clinical guidelines.
- If there is no objective evidence of fetal compromise revealed during clinical assessment, the woman can be reassured that planned birth is not required.
- The woman should be reassured that she did the right thing and not to hesitate to report any further concerns of DFM to her care provider.
- Women who present multiple times for DFM are at increased risk of adverse outcomes and should have ultrasound assessment as part of subsequent investigations.

If no fetal heart heard:

- Seek urgent obstetric review
- Confirm fetal death with ultrasound
- Manage as per Clinical Practice Guidelines for Care Around Stillbirth and Neonatal Death https://bit.ly/2WzoSnF

Medical consultation is required in the presence of any concerning findings including pre-existing medical conditions.

If CTG findings are abnormal, seek urgent obstetric review.

If ultrasound findings are abnormal or FMH is suspected, seek obstetric review.

Risk factors for adverse outcome in presentation with DFM

- Abnormal CTG
- Maternal age >35 years
- Cigarette smoking
- Overweight and obesity
- Recurrent presentation for DFM
- Previous stillbirth or SGA
- Pre-existing diabetes or hypertension
- Symphysis-fundal height <10th centile
- Raised uterine atery PI in the 2nd trimester
- Delayed presentation (>24 hrs without movement)

*If women have a concern of DFM prior to 28 weeks' gestation, they should be advised to contact their care provider. There is currently insufficient evidence to inform the management of women who report DFM prior to 28 weeks' gestation.
Disclaimer: This DFM Care Pathway is for general guidance only and is subject to a clinician's expert judgement. The DFM Care Pathway should not be relied on as a substitute for clinical advice.

Safer Baby Bundle
WORKING TOGETHER TO REDUCE STILLBIRTH

The Safer Baby Bundle resources are based on five key areas to support healthcare professionals with new strategies to help reduce stillbirths.

Smoking Cessation #Quit4Baby

Fetal Growth Restriction (FGR) #GrowingMatters

Decreased Fetal Movements (DFM) #MovementsMatter

Side Sleeping #SleepOnSide

Timing of Birth #LetsTalkTiming

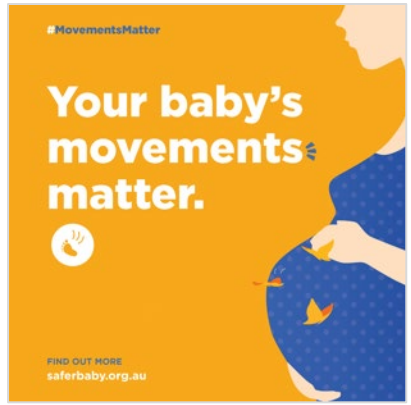
For more information see the DFM Clinical Practice Guideline

Resources

Poster and Flyer

Resources

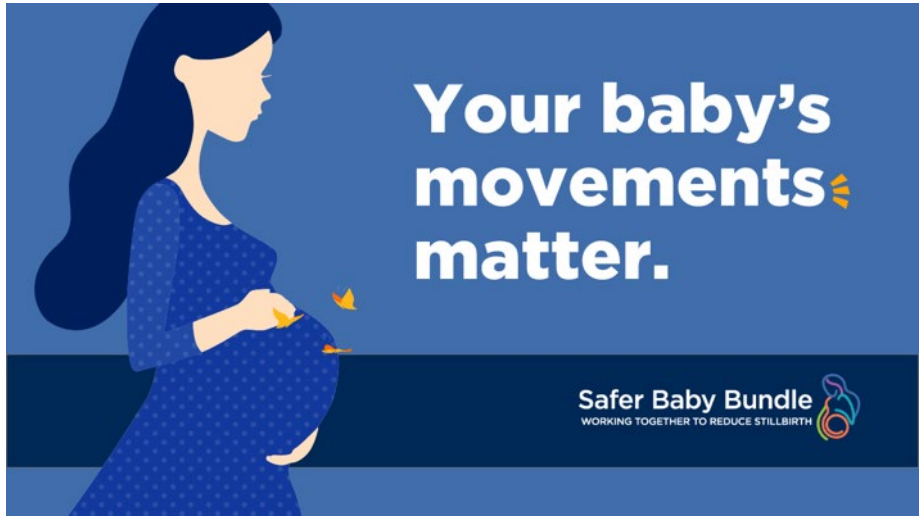
Social media tiles



Implementation

Questions for discussion

- Are there any challenges to implementing the DFM care pathway in the context of your local site?
- Are there limitations with access to equipment or resources?
- Does your facility have a local practice guideline?



Side Sleeping

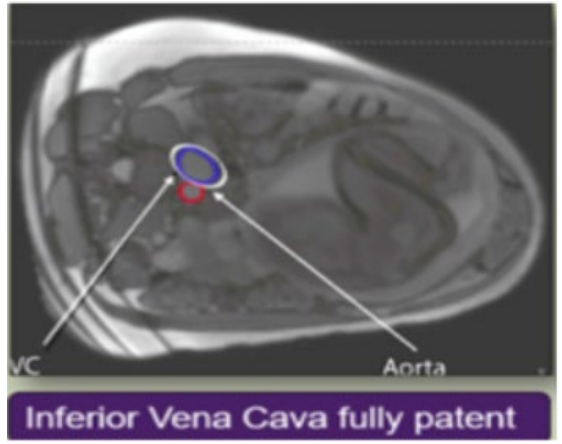
Evidence summary

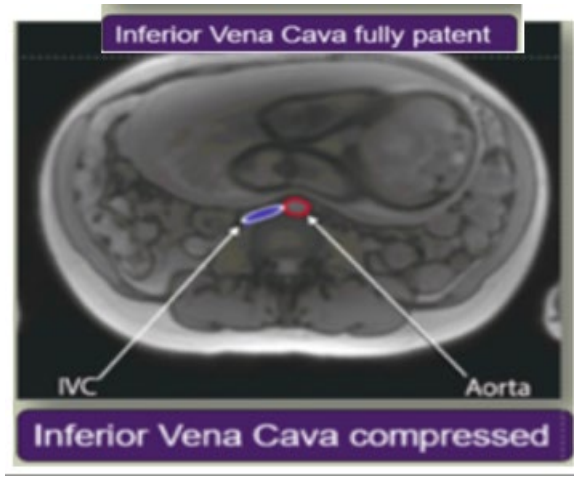
Position Statement:
Mothers' going-to-sleep position in late pregnancy[54]

READ MORE

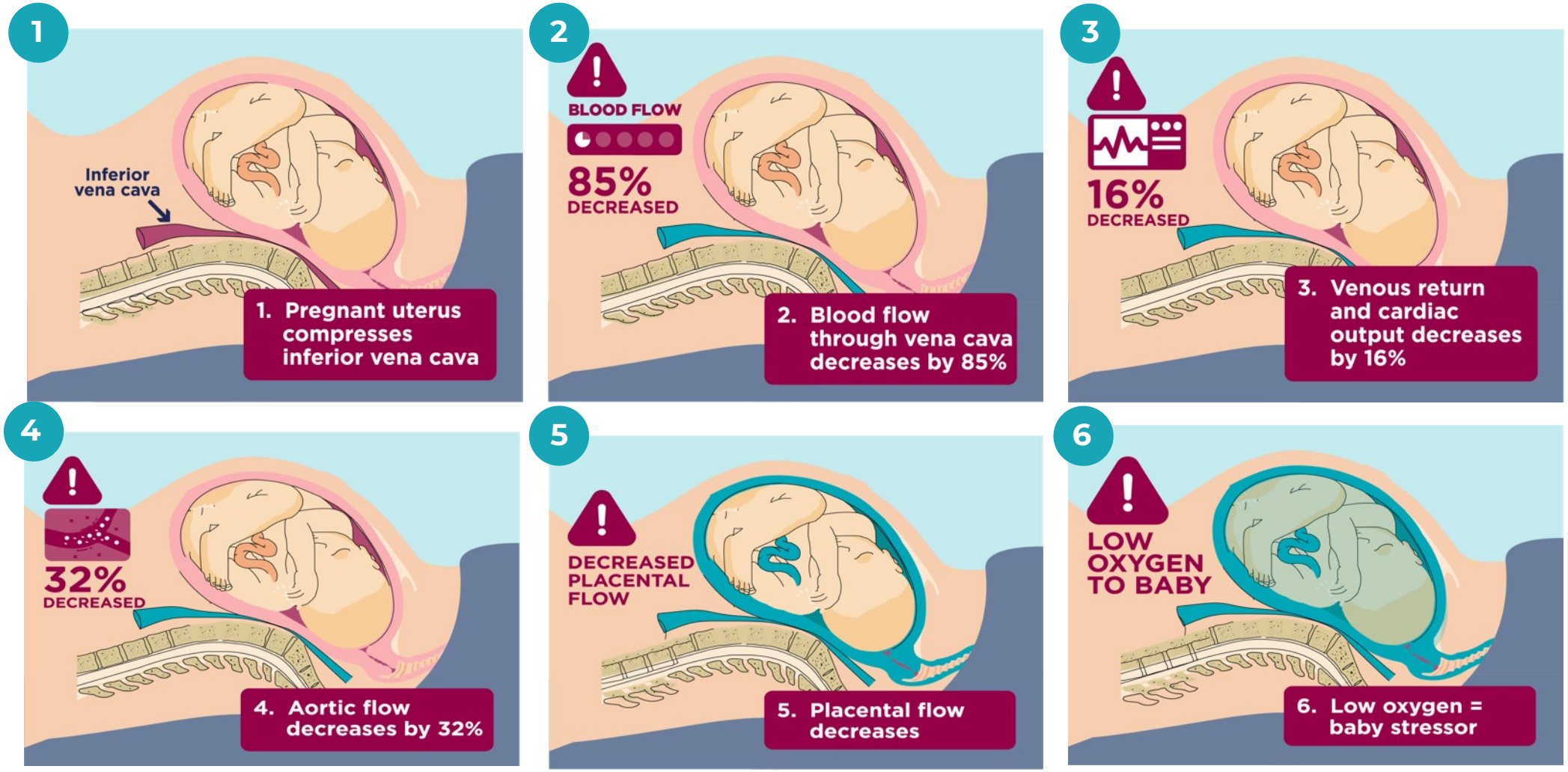
The evidence

- Accumulating evidence has shown an association between maternal supine going-to-sleep position and stillbirth after 28 weeks in pregnancy.[10,55,56]
- In an international meta-analysis the population attributable risk is 5.8%. This indicates 1:17 stillbirths could be avoided if women go to sleep on their side from 28 weeks of pregnancy.[10]
- Research in New Zealand used MRI technology to assess haemodynamic effects that can compromise fetal wellbeing.[58]





The evidence



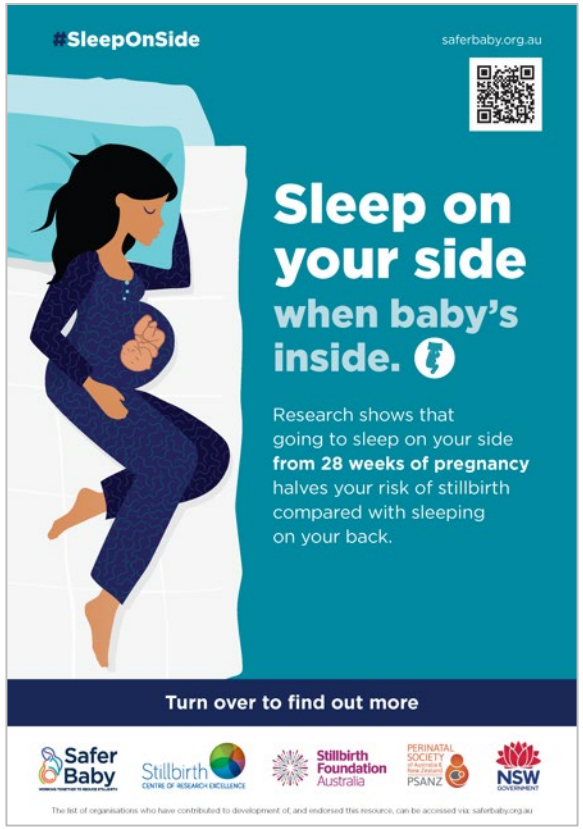
The recommendations

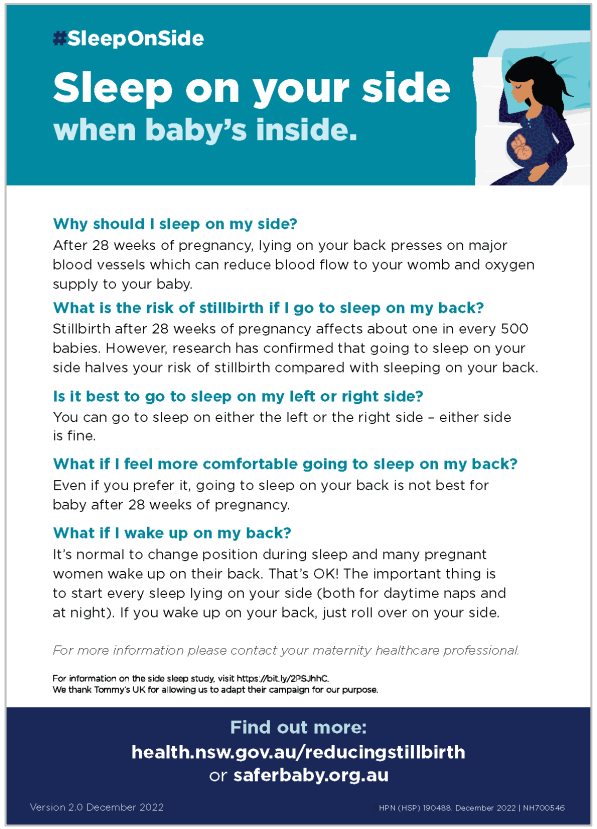
Steps to assessing and managing risk factors

- Provide all pregnant women with verbal and written information about stillbirth risk reduction practices.
- Emphasise that going-to-sleep in the supine (on your back) position is a risk factor for late stillbirth.
- Reassure women that it's normal to change position during sleep - the important thing is to start each sleep on their side.
- Current evidence shows that both the left and right side going-to-sleep positions are equally safe.[10]

Resources

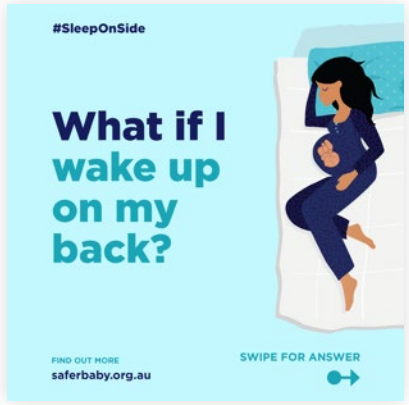
Poster and Flyer





Resources

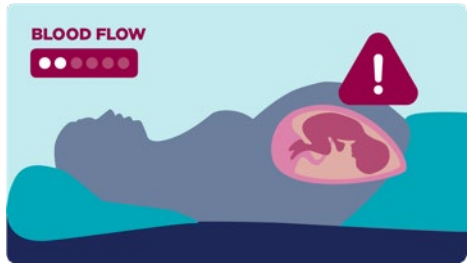
Social media tiles

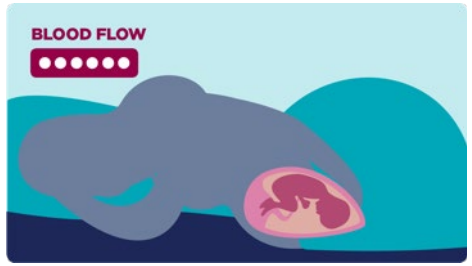


Implementation

Questions for discussion:

- Are there any challenges or concerns you expect to face from women when advising them about side sleeping?
- What questions might be asked by women about safe sleeping? How would you respond?





Timing of Birth

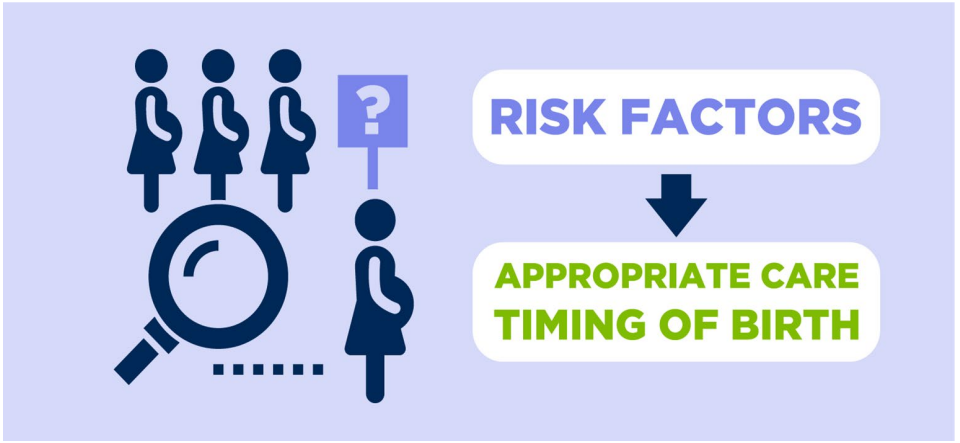
Evidence summary

Position Statement: Improving decision-making about the timing of birth for women with risk factors for stillbirth.[59]

READ MORE

The evidence

- There is clear evidence that some maternal and pregnancy factors increase a woman's risk of stillbirth[4]
- Early recognition of a woman's risk of stillbirth and provision of appropriate individualised care throughout pregnancy is a key stillbirth prevention strategy[60,61]
- For some women with risk factors **planned birth** can prevent stillbirth[62,63]
- The benefits of planned birth need to be carefully weighed against the risks of intervention



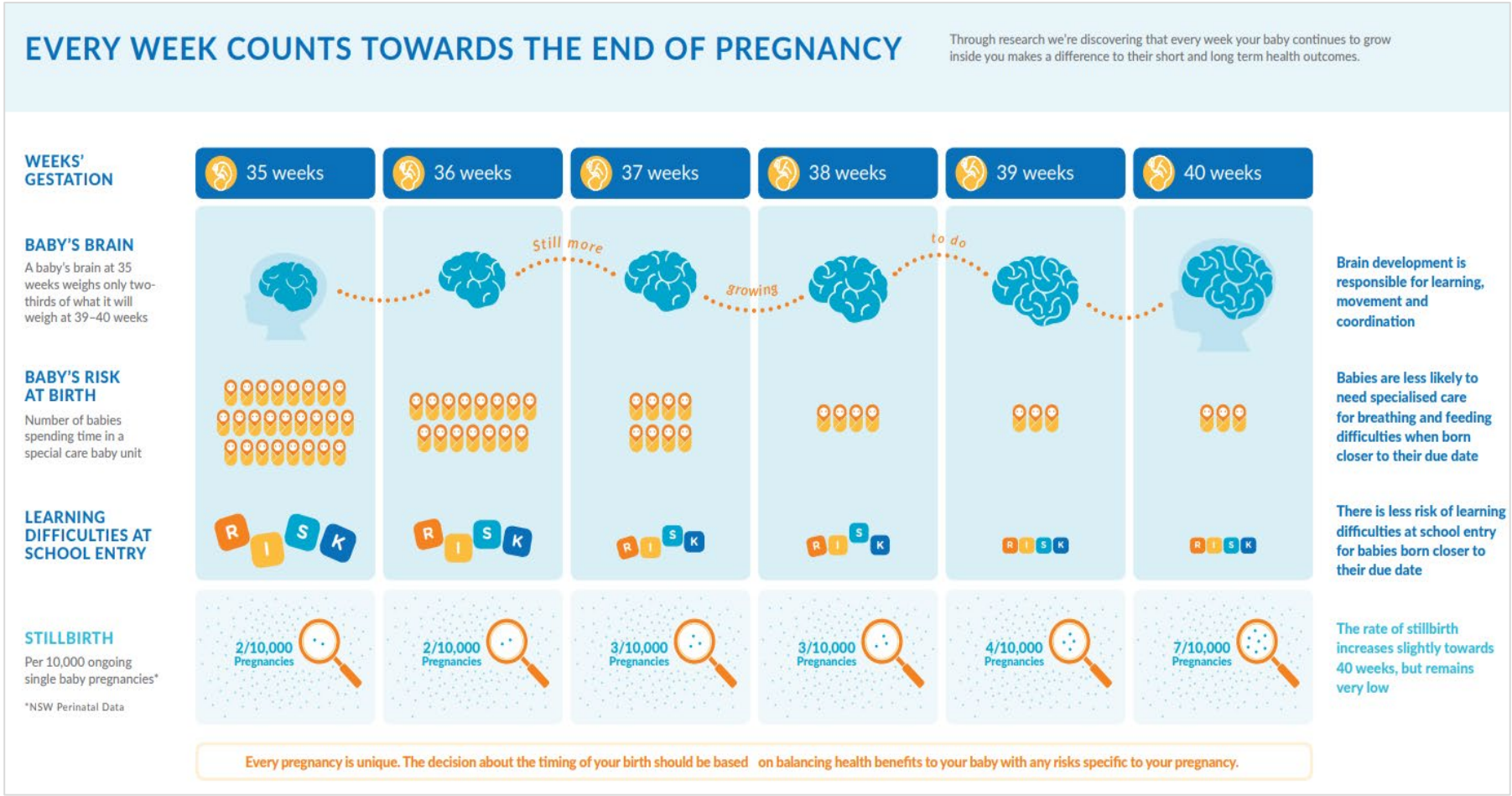
Recommendations

Steps to assessing and managing risk factors

S	Stillbirth risk assessment in early pregnancy
T	Tests and further investigations as indicated
E	Evaluate and re-assess risk at 34 to 36+6 weeks
P	Plan for increased surveillance where indicated
S	Support informed, shared decision-making on timing of birth

Resources

Every Week Counts[70]



Resources

Timing of Birth video

Resources

Poster

Resources

Brochure

Resources

Shared Decision-Making – Poster and Flyer

Resources

Social media tiles

Resources

Videos modelling conversations about timing of birth

Implementation

Questions for discussion:

- How will you implement the ‘5 STEPS’ process contextualised within your local site?
- Are there any practical limitations?
- What policies or guidelines are there to identify stillbirth risk factors at your institution.

Translated resources

Safer Baby resources are available in over 20 languages

English master booklet available for clinicians

Adapted resources

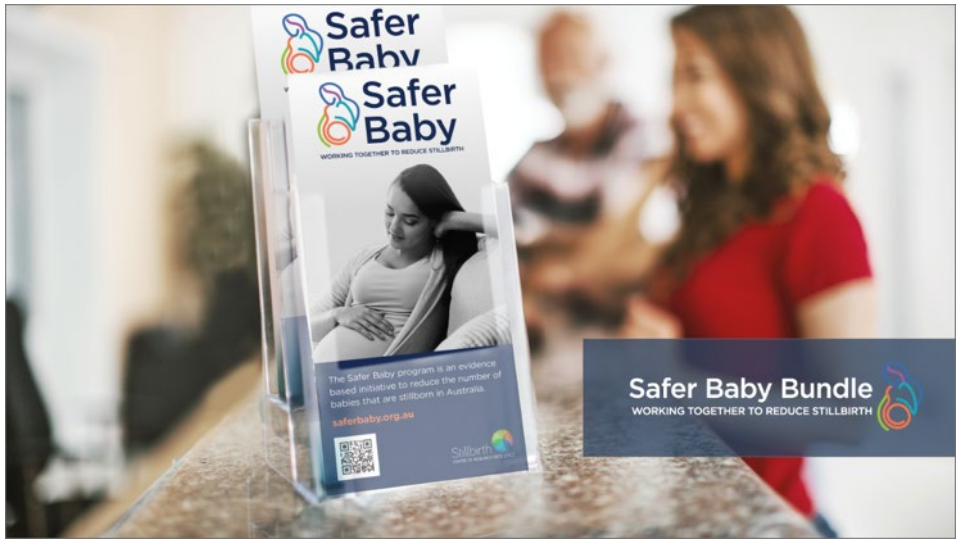
There are culturally adapted resources being co-designed and developed, which will be available soon, for:

- Aboriginal and Torres Strait Islander communities
- Arabic, Dari, Dinka and Karen language-speaking communities

Conclusion

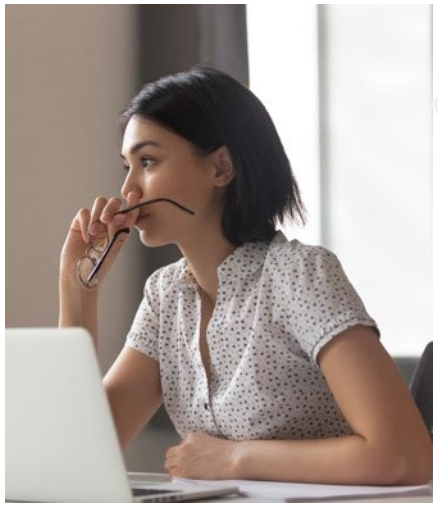
Risk Communication

- Communication about stillbirth and risk factors for stillbirth is often insufficient
- Across **all elements of the bundle**, sensitive evidence-based communication is key
- Discussion around risk factors for stillbirth should be part of standard pregnancy care
- Women have expressed that they want **clear** and **easy to understand** information from their health professional about how they can reduce their risk of stillbirth



What new mothers say

*"**The word stillbirth is incredibly important to include.** Plenty of information is out there telling you to sleep on your side but none explain why.... no one expects their baby to die but we need a warning!"*



*"**I think it is important to mention stillbirth as the risk** because otherwise many women may not take the message as seriously as they should."*

*"We know it happens, we just think it won't happen to us. **But we need to know what we can do to prevent it."***

*"Please just **give pregnant women all the information there is about preventing stillbirth."***

Continuity of Care

Statement from the Stillbirth Centre of Research Excellence:

The advantages of continuity of carer

Stillbirth is a serious public health problem with far reaching psychosocial and financial burden for families and society[1].

Every day, six families in Australia will suffer the loss of a baby after 20 weeks of pregnancy, with little improvement in rates for more than two decades[2]. Some of those stillbirths are preventable[3].

Models of maternity care which provide for greater continuity, and therefore reduce the risk of fragmentation, should be provided and, as far as possible, women should see the same maternity care provider throughout pregnancy. There are a range of models of care which optimise continuity including midwifery, private and public obstetrician care and GP obstetric care, especially in rural areas.

Midwifery continuity of carer offers women care provided by a known midwife or a small group of known midwives to women during pregnancy, birth and the early postnatal period. This care is provided in collaboration with other healthcare providers, including obstetricians, social support workers and Aboriginal Health Practitioners/Workers. The WHO Pregnancy Care Guidelines recommends all women have access to midwifery continuity of care throughout the childbirth continuum[4]. There is high quality evidence that demonstrates reductions in overall fetal/neonatal loss when women receive continuity of care from a known midwife during pregnancy[5]. Further research is needed regarding the impact specifically on late-gestation stillbirth.

Midwifery continuity of carer is known to be of additional benefit for women at higher risk of stillbirth, such as young mothers[6], Aboriginal women[7], and women from disadvantaged groups[8]. Where possible, women from these groups should be prioritised into being offered midwifery continuity of care models. Midwifery continuity of carer also improves the quality of care received by families whose baby is stillborn and is highly valued by families[9].

There are many ways for health services to provide continuity of care. Not all health services may be able to provide continuity of care all the time and there are challenges involved in redesigning services to provide this to all women.[10] Other approaches which provide continuity should be supported. This includes addressing the principles of continuity of care and carer, effective information-sharing and care coordination and ensuring a woman-centred approach to decision-making.

The Stillbirth CRE's Safer Baby Bundle aims **to reduce the number of stillbirths after 28 weeks' gestation by 20% by 2023.**

To complement and strengthen the five elements contained in the Safer Baby Bundle, the Stillbirth Centre of Research Excellence (Stillbirth CRE) recommends that maternity services increase the availability of continuity of care to all women and, in particular, for women with known risk factors for stillbirth. Continuity of care and carer should be an important strategy to help reduce stillbirth in Australia.

Version 1.0 developed 2021

Safer Baby Bundle
WORKING TOGETHER TO REDUCE STILLBIRTH

Stillbirth
CENTRE OF RESEARCH EXCELLENCE

References

1. Heazell AEP, Siassakos D, Blencowe H, et al. Stillbirths: economic and psychosocial consequences. Lancet 2016; 387(10018): 604-16.
2. Flenady V, Wojcieszek AM, Middleton P, et al. Stillbirths: recall to action in high-income countries. Lancet 2016; 387(10019): 691-702.
3. Flenady V, Middleton P, Smith GC, et al. Stillbirths: The way forward in high-income countries. Lancet 2011; 377(9778): 1703-17.
4. World Health Organization (WHO). WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization, 2016.
5. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database of Systematic Reviews 2016; (4).
6. Allen J, Gibbons K, Beckmann M, Tracy M, Stapleton H, Kildea S. Does model of maternity care make a difference to birth outcomes for young women? A retrospective cohort study. International journal of nursing studies 2015; 52(8): 1332.
7. Kildea S, Gao Y, Hickey S, et al. Reducing preterm birth amongst Aboriginal and Torres Strait Islander babies: A prospective cohort study, Brisbane, Australia. EClinicalMedicine 2019; 12: 43-51.
8. Homer CS, Leap N, Edwards N, Sandall J. Midwifery continuity of carer in an area of high socio-economic disadvantage in London: A retrospective analysis of Albany Midwifery Practice outcomes using routine data (1997-2009). Midwifery 2017; 48: 1.
9. Ellis A, Chebsey C, Storey C, et al. Systematic review to understand and improve care after stillbirth: a review of parents' and healthcare professionals' experiences. BMC pregnancy and childbirth 2016; 16(1): 16.
10. Homer C, Leap N, Brodie P, Sandall J, editors. Midwifery Continuity of Care: A Practical Guide, 2nd Edition. Chatswood, Australia: Elsevier; 2019

For more information about the Safer Baby Bundle program and to access the elearning resources for health care professionals go to learn.stillbirthcre.org.au

Version 1.0 developed 2021

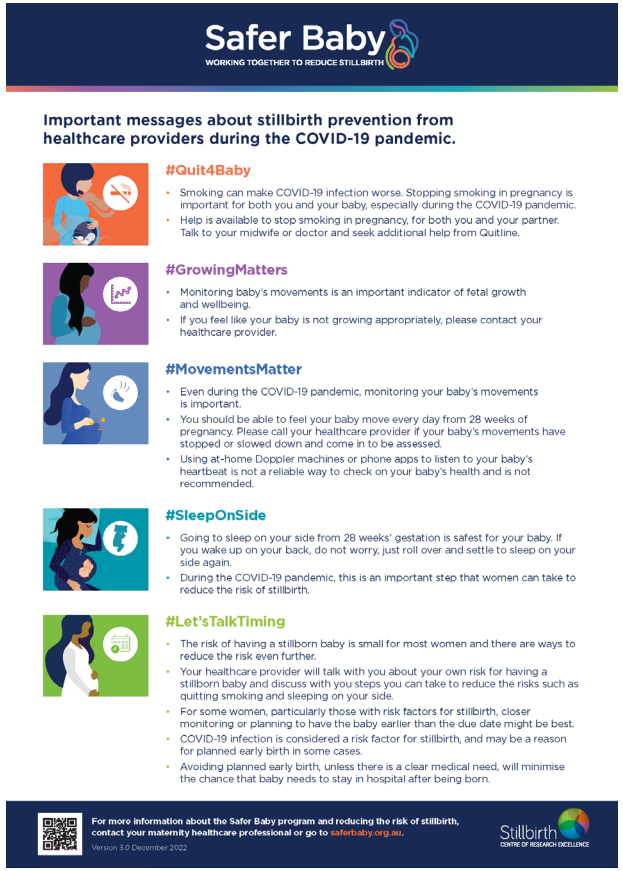
- In addition to the five Bundle elements, we emphasise the need for maternity services to address the other important aspects of best practice care to reduce stillbirth rates
- The Stillbirth CRE have developed a position statement in support of this
- This includes the recommendation that maternity services increase the availability of **continuity of care models** to all women (reducing the risk of fragmentation of care), and **in particular, for women at increased risk of stillbirth**

Perinatal Mortality Audit

- Perinatal mortality audits in the Netherlands, the UK and New Zealand show substandard care factors are present in
  20-30% of cases[64,65]
- Audit, when combined with feedback to care providers, can change practice and improve health outcomes[66]
- Particularly useful when combined with an action plan and clear measurable targets
- IMPROVE eLearning covers key skills and knowledge

COVID-19 and the Safer Baby Bundle

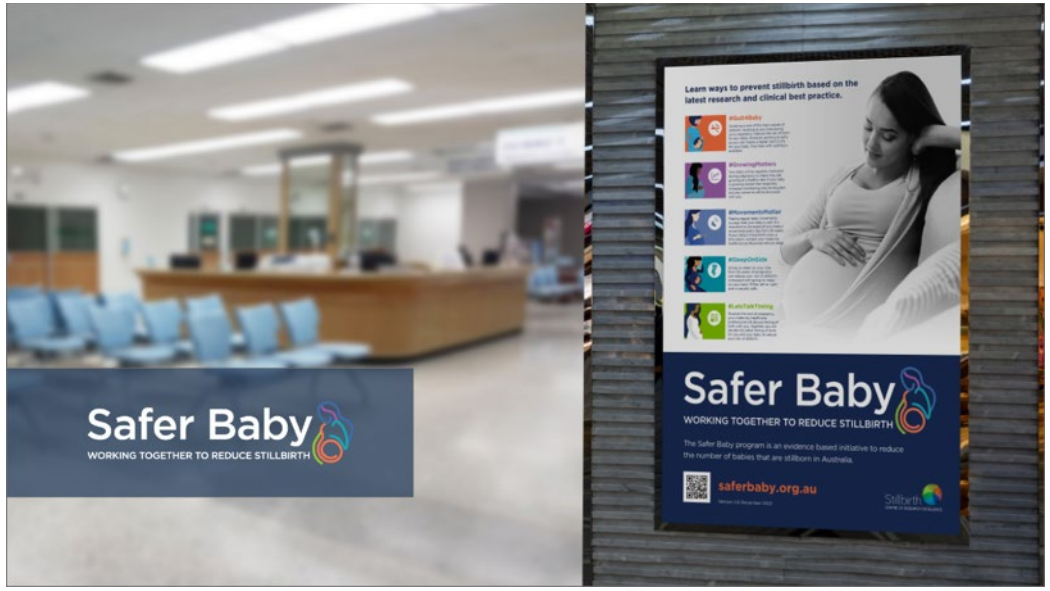
- During the COVID-19 pandemic the Safer Baby Bundle messaging remains largely the same and as important as ever
- For pregnant women concerns around being exposed to COVID-19 may lead them to avoid seeking care to reduce their risk of contracting the infection
- We have developed resources for both clinicians and women to highlight changes in practice during COVID-19



Fact Sheet for Women

Safer Baby resources available for parents

- Safer Baby resources are available for clinicians to share with pregnant women. These are designed using easy to understand language to educate women about the risks of stillbirth and the five elements of care to reduce stillbirth risks.
- Resources available include waiting room poster, flyer for women and website **www.saferbaby.org.au**

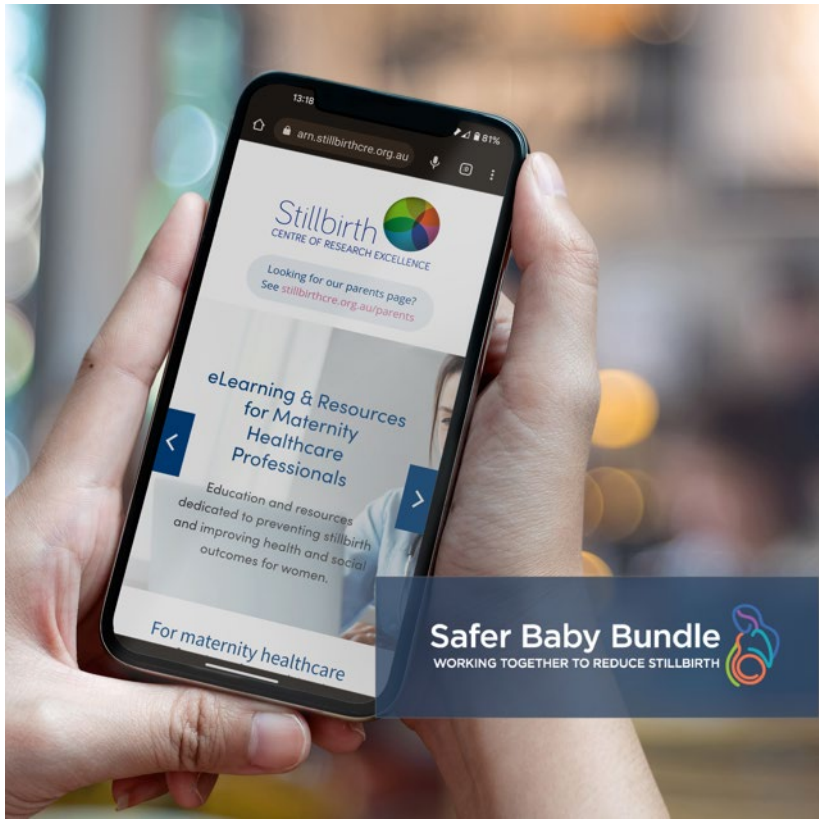


Waiting room poster and flyer for women

Safer Baby Bundle eLearning Module

For further detail and evidence base behind the Safer Baby Bundle, all downloadable resources and care pathways visit **learn.stillbirthcre.org.au**

- FREE educational training
- Accredited CPD points
- Six 20-minute chapters, accessible on all devices
- Interactive learning including videos, quiz style questions and case studies
- Downloadable resources



Register now

Thank you

The Safer Baby Bundle was developed by the Stillbirth CRE in partnership with professional colleges and organisations and parent advocacy organisations.

Strongerbubbaborn.org.au

Growingahealthybaby.org.au

saferbaby.org.au

learn.stillbirthCRE.org.au

References

1. Callander EJ, Thomas J, Fox H, Ellwood D, Flenady V. What are the costs of stillbirth? Capturing the direct health care and macroeconomic costs in Australia. Birth 2019; 47(2): 183-90.
2. United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), A Neglected Tragedy: The global burden of stillbirths. United Nations Children's Fund, New York, 2020.
3. Heazell AEP, Siassakos D, Blencowe H, et al. Stillbirths: economic and psychosocial consequences. Lancet 2016; 387(10018): 604-16.
4. Flenady V, Wojcieszek AM, Middleton P, et al. Stillbirths: recall to action in high-income countries. Lancet 2016; 387(10019): 691-702.
5. Flenady V, Middleton P, Wallace E, et al. Stillbirth in Australia 1: The road to now: two decades of stillbirth research and advocacy in Australia. Women & Birth: Journal of the Australian College of Midwives 2020.
6. Australian Institute of Health Welfare. Australia's mothers and babies 2018—in brief. Canberra: AIHW, 2020.
7. Rumbold AR, Yelland J, Stuart-Butler D, et al. Stillbirth in Australia 3: Addressing stillbirth inequities in Australia: Steps towards a better future. Women Birth 2020; 33(6): 520-5.
8. Australian Institute of Health and Welfare. Stillbirths and neonatal deaths in Australia 2015 and 2016. Canberra: AIHW, 2019.
9. AIHW: Hilder L, Li Z, Zeki R, Sullivan EA. Stillbirths in Australia, 1991-2009. Perinatal statistics series no. 29. Cat. No. PER 63. Canberra: AIHW National Perinatal Epidemiology and Statistics Unit, 2014.
10. Cronin RS, Li M, Thompson JMD, et al. An individual participant data meta-analysis of maternal going-to-sleep position, interactions with fetal vulnerability, and the risk of late stillbirth. EClinicalMedicine 2019; 10: 49-57.
11. Davies-Tuck ML, Davey MA, Wallace EM. Maternal region of birth and stillbirth in Victoria, Australia 2000-2011: A retrospective cohort study of Victorian perinatal data. PLoS One 2017; 12(6): e0178727.
12. Flenady V, Koopmans L, Middleton P, et al. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis. Lancet 2011; 377(9774): 1331-40.
13. Lamont K, Scott NW, Jones GT, Bhattacharya S. Risk of recurrent stillbirth: systematic review and meta-analysis. 2015; 350: h3080.

References

14. Lawn JE, Blencowe H, Waiswa P, et al. Stillbirths: rates, risk factors, and acceleration towards 2030. Lancet 2016; 387(10018): 587-603.
15. McCowan LME, George-Haddad M, Stacey T, Thompson JMD. Fetal growth restriction and other risk factors for stillbirth in a New Zealand setting. *Aust N Z J Obstet Gynaecol* 2007; **47**(6): 450-6.
16. Mozooni M, Preen DB, Pennell CE. Stillbirth in Western Australia, 2005-2013: the influence of maternal migration and ethnic origin. *The Medical journal of Australia* 2018; **209**(9): 394-400.
17. Shah PS, Zao J, Al-Wassia H, Shah V. Pregnancy and neonatal outcomes of Aboriginal women: a systematic review and meta-analysis. *Women's Health Issues* 2011; **21**(1): 28-39.
18. Healthcare Improvement Scotland. Scottish Patient Safety Program Maternity and Children, End of phase report, August 2016. Scotland: HIS, 2016.
19. NHS England. Saving Babies' Lives Version Two: A care bundle for reducing perinatal mortality, 2019.
20. Widdows K, Reid HE, Roberts SA, Camacho EM, Heazell AEP. Saving babies' lives project impact and results evaluation (SPiRE): a mixed methodology study. BMC pregnancy and childbirth 2018; 18(1): 43.
21. Healthcare Improvement Scotland. Scottish Patient Safety Programme: Maternity and Children Quality Improvement Collaborative, Web Page. 2020. https://ihub.scot/improvement-programmes/scottish-patient-safety-programme-spsp/maternity-and-children-quality-improvement-collaborative-mcqic/maternity-care/stillbirth/.
22. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Smoking – one of the most important things to prevent in pregnancy and beyond. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2019.
23. Kotz D, Brown J, West R. Prospective cohort study of the effectiveness of smoking cessation treatments used in the "real world". Mayo Clinic proceedings 2014; 89(10): 1360-7.
24. West R, Raw M, McNeill A, et al. Health-care interventions to promote and assist tobacco cessation: a review of efficacy, effectiveness and affordability for use in national guideline development. Addiction (Abingdon, England) 2015; 110(9): 1388-403.

References

25. Bartsch AL, Harter M, Niedrich J, Brutt AL, Buchholz A. A systematic literature review of self-reported smoking cessation counseling by primary care physicians. PLoS One 2016; 11(12): e0168482.
26. Coleman T, Chamberlain C, Davey MA, Cooper SE, Leonardi-Bee J. Pharmacological interventions for promoting smoking cessation during pregnancy. Cochrane Database Syst Rev 2015; 12(9): CD010078.
27. The Royal Australian College of General Practitioners. Supporting smoking cessation: A guide for health professionals. . East Melbourne, Vic., 2019.
28. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Smoking and Pregnancy. Best Practice; 2020.
29. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: detection and management of fetal growth restriction in singleton pregnancies. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
30. Lausman A, Kingdom J. Intrauterine Growth Restriction: Screening, Diagnosis, and Management. Journal of Obstetrics and Gynaecology Canada 2013; 35(8): 741-8.
31. Pay ASD, Wiik J, Backe B, Jacobsson B, Strandell A, Klovning A. Symphysis-fundus height measurement to predict small-for-gestational-age status at birth: a systematic review. BMC pregnancy and childbirth 2015; 15(1): 22.
32. Gordijn SJ, Beune IM, Thilaganathan B, et al. Consensus definition of fetal growth restriction: a Delphi procedure. Ultrasound in Obstetrics and Gynecology 2016; 48(3): 333-9.

References

33. McCowan LM, Figueras F, Anderson NH. Evidence-based national guidelines for the management of suspected fetal growth restriction: comparison, consensus, and controversy. American journal of obstetrics and gynecology 2018; 218(2s): S855-s68.
34. Sharma D, Shastri S, Sharma P. Intrauterine Growth Restriction: Antenatal and Postnatal Aspects. Clinical Medicine Insights Pediatrics 2016; 10: 67-83.
35. Department of Health. Clinical Practice Guidelines: Pregnancy Care. Canberra: Australian Government Department of Health, 2018.
36. Gardosi J, Giddings S, Clifford S, Wood L, Francis A. Association between reduced stillbirth rates in England and regional uptake of accreditation training in customised fetal growth assessment. *BMJ* 2013; **3**(12): e003942.
37. Malacova E, Regan A, Nassar N, et al. Risk of stillbirth, preterm delivery, and fetal growth restriction following exposure in a previous birth: systematic review and meta-analysis. 2018; **125**(2): 183-92.
38. Perinatal Society of Australia and New Zealand, Stillbirth Centre of Research Excellence. Fetal Growth Restriction (FGR) Care Pathway for singleton pregnancies. 2023.
39. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2022.
40. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2022.
41. Goodlin RC. History of fetal monitoring. *American Journal of Obstetrics & Gynecology* 1979; **133**(3): 323-52.
42. Bradford BF, Cronin RS, McKinlay CJD, Thompson JM.D, Mitchell EA, Stone PR, McCowan LME. A Diurnal Fetal Movement Pattern: Findings from a Cross-sectional Study of Maternally Perceived Fetal Movements in the Third Trimester of Pregnancy. *PloS One* 2019; **14**(6).

References

43. Flenady V, Gardener G, Ellwood D, Coory M, Weller M, Warrilow KA, Middleton PF, Wojcieszek AM, Groom KM, Boyle FM, East C, Lawford HSL, Callander E, Said JM, Walker SP, Mahomed K, Andrews C, Gordon A, Norman JE, Crowther C. My Baby's Movements: a stepped-wedge cluster-randomised controlled trial of a fetal movement awareness intervention to reduce stillbirths. *BJOG* 2021; **129**(1): 29-41.
44. Mangesi L, Hofmeyr GJ, Smith V, Smyth RM. Fetal movement counting for assessment of fetal wellbeing. *Cochrane Database Syst Rev* 2015; **10**:CD004909.
45. Frøen JF. A kick from within-fetal movement counting and the cancelled progress in antenatal care. *J Perinat Med* 2004; **32**(1): 13-24.
46. Tveit JVH, Saastad E, Stray-Pedersen B, et al. Reduction of late stillbirth with the introduction of fetal movement information and guidelines – a clinical quality improvement. *BMC pregnancy and childbirth* 2009; **9**: 32.
47. Dutton PJ, Warrander LK, Roberts SA, et al. Predictors of poor perinatal outcome following maternal perception of reduced fetal movements - a prospective cohort study. *PLoS One* 2012; **7**(7): e39784.
48. Frøen JF, Heazell AE, Tveit JV, Saastad E, Fretts RC, Flenady V. Fetal movement assessment. *Semin Perinatol* 2008; **32**(4): 243-6.
49. Saastad E, Tveit JV, Flenady V, et al. Implementation of uniform information on fetal movement in a Norwegian population reduces delayed reporting of decreased fetal movement and stillbirths in primiparous women - a clinical quality improvement. *BMC research notes* 2010; **3**(1): 2.
50. Norman JE, Heazell AE, Rodriguez A, et al. Awareness of fetal movements and care package to reduce fetal mortality (AFFIRM): a stepped wedge, cluster-randomised trial. *The Lancet* 2018; **392**(10158): 1629-38.
51. Efkarpidis S, Alexopoulos E, Kean L, Liu D, Fay T. Case-control study of factors associated with intrauterine fetal deaths. *MedGenMed : Medscape general medicine* 2004; **6**(2): 53.
52. Saastad E, Tveit JV, Flenady V, et al. Implementation of uniform information on fetal movement in a Norwegian population reduced delayed reporting of decreased fetal movement and stillbirths in primiparous women - a clinical quality improvement. *BMC research notes* 2010; **3**(1): 2.

References

53. Perinatal Society of Australia and New Zealand, Stillbirth Centre of Research Excellence. Decreased Fetal Movement (DFM) Care Pathway for women with singleton pregnancies from 28+0 weeks' gestation. 2023.
54. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Mothers' going-to-sleep position in late pregnancy. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
55. Abitbol MM. Aortic compression and uterine blood flow during pregnancy. *Obstet Gynecol* 1977; **50**(5): 562-70.
56. Jeffreys RM, Stepanchak W, Lopez B, Hardis J, Clapp JF, 3rd. Uterine blood flow during supine rest and exercise after 28 weeks of gestation. *BJOG* 2006; **113**(11): 1239-47.
57. Warland J, Dorrian J, Kember AJ, et al. Modifying maternal sleep position in late pregnancy through positional therapy: a feasibility study. *Journal of clinical sleep medicine (JCSM): official publication of the American Academy of Sleep Medicine* 2018; **14**(8): 1387-97.
58. Humphries A, Mirjalili SA, Tarr GP, Thompson JMD, Stone P. The effect of supine positioning on maternal hemodynamics during late pregnancy. *J Matern Fetal Neonatal Med* 2018: 1-8.
59. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Improving decision-making about the timing of birth for low risk women at term. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
60. Queensland Maternal and Perinatal Quality Council. Queensland Mothers and Babies 2014 and 2015: Report of the Queensland Maternal and Perinatal Quality Council 2017: Queensland Health, 2018.
61. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. Victoria's Mothers, Babies and Children 2016:55th survey of perinatal deaths in Victoria: Victorian Government, 2017.

References

62. Muglu J, Rather H, Arroyo-Manzano D, et al. Risks of stillbirth and neonatal death with advancing gestation at term: a systematic review and meta-analysis of cohort studies of 15 million pregnancies. *PLOS Medicine* 2019; **16**(7): e1002838.
63. Middleton P, Shepherd E, Morris J, Crowther CA, Gomersall JC. Induction of labour at or beyond 37 weeks' gestation. *Cochrane Database of Systematic Reviews* 2020; (7).
64. Wolleswinkel-van den Bosch JH, Vredevoogd CB, Borkent-Polet M, et al. Substandard factors in perinatal care in The Netherlands: a regional audit of perinatal deaths. *Acta obstetricia et gynecologica Scandinavica* 2002; **81**(1): 17-24.
65. Draper E, Gallimore I, Kurinczuk J, et al. MBRRACE-UK Perinatal Mortality Surveillance Report, UK Perinatal Deaths for Births from January to December 2016. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. , 2018.
66. Jamtvedt G, Flottorp S, Ivers N. Audit and Feedback as a Quality Strategy. Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies. Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2019.

References

1. Callander EJ, Thomas J, Fox H, Ellwood D, Flenady V. What are the costs of stillbirth? Capturing the direct health care and macroeconomic costs in Australia. Birth 2019; 47(2): 183-90.
2. United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), A Neglected Tragedy: The global burden of stillbirths. United Nations Children's Fund, New York, 2020.
3. Heazell AEP, Siassakos D, Blencowe H, et al. Stillbirths: economic and psychosocial consequences. Lancet 2016; 387(10018): 604-16.
4. Flenady V, Wojcieszek AM, Middleton P, et al. Stillbirths: recall to action in high-income countries. Lancet 2016; 387(10019): 691-702.
5. Flenady V, Middleton P, Wallace E, et al. Stillbirth in Australia 1: The road to now: two decades of stillbirth research and advocacy in Australia. Women & Birth: Journal of the Australian College of Midwives 2020.
6. Australian Institute of Health Welfare. Australia's mothers and babies 2018—in brief. Canberra: AIHW, 2020.
7. Rumbold AR, Yelland J, Stuart-Butler D, et al. Stillbirth in Australia 3: Addressing stillbirth inequities in Australia: Steps towards a better future. Women Birth 2020; 33(6): 520-5.
8. Australian Institute of Health and Welfare. Australia's mothers and babies:Stillbirths and neonatal deaths [Internet]. Canberra: Australian Institute of Health and Welfare, 2022 [cited 2023 Aug. 8]. Available from: https://www.aihw.gov.au/reports/mothers-babies/stillbirths-and-neonatal-deaths
9. AIHW: Hilder L, Li Z, Zeki R, Sullivan EA. Stillbirths in Australia, 1991-2009. Perinatal statistics series no. 29. Cat. No. PER 63. Canberra: AIHW National Perinatal Epidemiology and Statistics Unit, 2014.
10. Cronin RS, Li M, Thompson JMD, et al. An individual participant data meta-analysis of maternal going-to-sleep position, interactions with fetal vulnerability, and the risk of late stillbirth. EClinicalMedicine 2019; 10: 49-57.
11. Davies-Tuck ML, Davey MA, Wallace EM. Maternal region of birth and stillbirth in Victoria, Australia 2000-2011: A retrospective cohort study of Victorian perinatal data. PLoS One 2017; 12(6): e0178727.
12. Flenady V, Koopmans L, Middleton P, et al. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis. Lancet 2011; 377(9774): 1331-40.
13. Lamont K, Scott NW, Jones GT, Bhattacharya S. Risk of recurrent stillbirth: systematic review and meta-analysis. 2015; 350: h3080.

References

14. Lawn JE, Blencowe H, Waiswa P, et al. Stillbirths: rates, risk factors, and acceleration towards 2030. Lancet 2016; 387(10018): 587-603.
15. McCowan LME, George-Haddad M, Stacey T, Thompson JMD. Fetal growth restriction and other risk factors for stillbirth in a New Zealand setting. *Aust N Z J Obstet Gynaecol* 2007; **47**(6): 450-6.
16. Mozooni M, Preen DB, Pennell CE. Stillbirth in Western Australia, 2005-2013: the influence of maternal migration and ethnic origin. *The Medical journal of Australia* 2018; **209**(9): 394-400.
17. Shah PS, Zao J, Al-Wassia H, Shah V. Pregnancy and neonatal outcomes of Aboriginal women: a systematic review and meta-analysis. *Women's Health Issues* 2011; **21**(1): 28-39.
18. Healthcare Improvement Scotland. Scottish Patient Safety Program Maternity and Children, End of phase report, August 2016. Scotland: HIS, 2016.
19. NHS England. Saving Babies' Lives Version Two: A care bundle for reducing perinatal mortality, 2019.
20. Widdows K, Reid HE, Roberts SA, Camacho EM, Heazell AEP. Saving babies' lives project impact and results evaluation (SPiRE): a mixed methodology study. BMC pregnancy and childbirth 2018; 18(1): 43.
21. Healthcare Improvement Scotland. Scottish Patient Safety Programme: Maternity and Children Quality Improvement Collaborative, Web Page. 2020. https://ihub.scot/improvement-programmes/scottish-patient-safety-programme-spsp/maternity-and-children-quality-improvement-collaborative-mcqic/maternity-care/stillbirth/.
22. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Smoking – one of the most important things to prevent in pregnancy and beyond. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2019.
23. Kotz D, Brown J, West R. Prospective cohort study of the effectiveness of smoking cessation treatments used in the "real world". Mayo Clinic proceedings 2014; 89(10): 1360-7.
24. West R, Raw M, McNeill A, et al. Health-care interventions to promote and assist tobacco cessation: a review of efficacy, effectiveness and affordability for use in national guideline development. Addiction (Abingdon, England) 2015; 110(9): 1388-403.

References

25. Bartsch AL, Harter M, Niedrich J, Brutt AL, Buchholz A. A systematic literature review of self-reported smoking cessation counseling by primary care physicians. PLoS One 2016; 11(12): e0168482.
26. Coleman T, Chamberlain C, Davey MA, Cooper SE, Leonardi-Bee J. Pharmacological interventions for promoting smoking cessation during pregnancy. Cochrane Database Syst Rev 2015; 12(9): CD010078.
27. The Royal Australian College of General Practitioners. Supporting smoking cessation: A guide for health professionals. . East Melbourne, Vic., 2019.
28. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Smoking and Pregnancy. Best Practice; 2020.
29. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: detection and management of fetal growth restriction in singleton pregnancies. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
30. Lausman A, Kingdom J. Intrauterine Growth Restriction: Screening, Diagnosis, and Management. Journal of Obstetrics and Gynaecology Canada 2013; 35(8): 741-8.
31. Pay ASD, Wiik J, Backe B, Jacobsson B, Strandell A, Klovning A. Symphysis-fundus height measurement to predict small-for-gestational-age status at birth: a systematic review. BMC pregnancy and childbirth 2015; 15(1): 22.
32. Gordijn SJ, Beune IM, Thilaganathan B, et al. Consensus definition of fetal growth restriction: a Delphi procedure. Ultrasound in Obstetrics and Gynecology 2016; 48(3): 333-9.

References

33. McCowan LM, Figueras F, Anderson NH. Evidence-based national guidelines for the management of suspected fetal growth restriction: comparison, consensus, and controversy. American journal of obstetrics and gynecology 2018; 218(2s): S855-s68.
34. Sharma D, Shastri S, Sharma P. Intrauterine Growth Restriction: Antenatal and Postnatal Aspects. Clinical Medicine Insights Pediatrics 2016; 10: 67-83.
35. Department of Health. Clinical Practice Guidelines: Pregnancy Care. Canberra: Australian Government Department of Health, 2018.
36. Gardosi J, Giddings S, Clifford S, Wood L, Francis A. Association between reduced stillbirth rates in England and regional uptake of accreditation training in customised fetal growth assessment. *BMJ* 2013; **3**(12): e003942.
37. Malacova E, Regan A, Nassar N, et al. Risk of stillbirth, preterm delivery, and fetal growth restriction following exposure in a previous birth: systematic review and meta-analysis. 2018; **125**(2): 183-92.
38. Perinatal Society of Australia and New Zealand, Stillbirth Centre of Research Excellence. Fetal Growth Restriction (FGR) Care Pathway for singleton pregnancies. 2023.
39. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2022.
40. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2022.
41. Goodlin RC. History of fetal monitoring. *American Journal of Obstetrics & Gynecology* 1979; **133**(3): 323-52.
42. Bradford BF, Cronin RS, McKinlay CJD, Thompson JM.D, Mitchell EA, Stone PR, McCowan LME. A Diurnal Fetal Movement Pattern: Findings from a Cross-sectional Study of Maternally Perceived Fetal Movements in the Third Trimester of Pregnancy. *PloS One* 2019; **14**(6).

References

43. Flenady V, Gardener G, Ellwood D, Coory M, Weller M, Warrilow KA, Middleton PF, Wojcieszek AM, Groom KM, Boyle FM, East C, Lawford HSL, Callander E, Said JM, Walker SP, Mahomed K, Andrews C, Gordon A, Norman JE, Crowther C. My Baby's Movements: a stepped-wedge cluster-randomised controlled trial of a fetal movement awareness intervention to reduce stillbirths. *BJOG* 2021; **129**(1): 29-41.
44. Mangesi L, Hofmeyr GJ, Smith V, Smyth RM. Fetal movement counting for assessment of fetal wellbeing. *Cochrane Database Syst Rev* 2015; **10**:CD004909.
45. Frøen JF. A kick from within-fetal movement counting and the cancelled progress in antenatal care. *J Perinat Med* 2004; **32**(1): 13-24.
46. Tveit JVH, Saastad E, Stray-Pedersen B, et al. Reduction of late stillbirth with the introduction of fetal movement information and guidelines – a clinical quality improvement. *BMC pregnancy and childbirth* 2009; **9**: 32.
47. Dutton PJ, Warrander LK, Roberts SA, et al. Predictors of poor perinatal outcome following maternal perception of reduced fetal movements - a prospective cohort study. *PLoS One* 2012; **7**(7): e39784.
48. Frøen JF, Heazell AE, Tveit JV, Saastad E, Fretts RC, Flenady V. Fetal movement assessment. *Semin Perinatol* 2008; **32**(4): 243-6.
49. Saastad E, Tveit JV, Flenady V, et al. Implementation of uniform information on fetal movement in a Norwegian population reduces delayed reporting of decreased fetal movement and stillbirths in primiparous women - a clinical quality improvement. *BMC research notes* 2010; **3**(1): 2.
50. Norman JE, Heazell AE, Rodriguez A, et al. Awareness of fetal movements and care package to reduce fetal mortality (AFFIRM): a stepped wedge, cluster-randomised trial. *The Lancet* 2018; **392**(10158): 1629-38.
51. Efkarpidis S, Alexopoulos E, Kean L, Liu D, Fay T. Case-control study of factors associated with intrauterine fetal deaths. *MedGenMed : Medscape general medicine* 2004; **6**(2): 53.
52. Saastad E, Tveit JV, Flenady V, et al. Implementation of uniform information on fetal movement in a Norwegian population reduced delayed reporting of decreased fetal movement and stillbirths in primiparous women - a clinical quality improvement. *BMC research notes* 2010; **3**(1): 2.

References

53. Perinatal Society of Australia and New Zealand, Stillbirth Centre of Research Excellence. Decreased Fetal Movement (DFM) Care Pathway for women with singleton pregnancies from 28+0 weeks' gestation. 2023.
54. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Mothers' going-to-sleep position in late pregnancy. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
55. Abitbol MM. Aortic compression and uterine blood flow during pregnancy. *Obstet Gynecol* 1977; **50**(5): 562-70.
56. Jeffreys RM, Stepanchak W, Lopez B, Hardis J, Clapp JF, 3rd. Uterine blood flow during supine rest and exercise after 28 weeks of gestation. *BJOG* 2006; **113**(11): 1239-47.
57. Warland J, Dorrian J, Kember AJ, et al. Modifying maternal sleep position in late pregnancy through positional therapy: a feasibility study. *Journal of clinical sleep medicine (JCSM): official publication of the American Academy of Sleep Medicine* 2018; **14**(8): 1387-97.
58. Humphries A, Mirjalili SA, Tarr GP, Thompson JMD, Stone P. The effect of supine positioning on maternal hemodynamics during late pregnancy. *J Matern Fetal Neonatal Med* 2018: 1-8.
59. Perinatal Society of Australia and New Zealand and Centre of Research Excellence Stillbirth. Position statement: Improving decision-making about the timing of birth for low risk women at term. Brisbane, Australia: Centre of Research Excellence in Stillbirth, 2023.
60. Queensland Maternal and Perinatal Quality Council. Queensland Mothers and Babies 2014 and 2015: Report of the Queensland Maternal and Perinatal Quality Council 2017: Queensland Health, 2018.
61. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. Victoria's Mothers, Babies and Children 2016:55th survey of perinatal deaths in Victoria: Victorian Government, 2017.

References

62. Muglu J, Rather H, Arroyo-Manzano D, et al. Risks of stillbirth and neonatal death with advancing gestation at term: a systematic review and meta-analysis of cohort studies of 15 million pregnancies. *PLOS Medicine* 2019; **16**(7): e1002838.
63. Middleton P, Shepherd E, Morris J, Crowther CA, Gomersall JC. Induction of labour at or beyond 37 weeks' gestation. *Cochrane Database of Systematic Reviews* 2020; (7).
64. Wolleswinkel-van den Bosch JH, Vredevoogd CB, Borkent-Polet M, et al. Substandard factors in perinatal care in The Netherlands: a regional audit of perinatal deaths. *Acta obstetricia et gynecologica Scandinavica* 2002; **81**(1): 17-24.
65. Draper E, Gallimore I, Kurinczuk J, et al. MBRRACE-UK Perinatal Mortality Surveillance Report, UK Perinatal Deaths for Births from January to December 2016. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. , 2018.
66. Jamtvedt G, Flottorp S, Ivers N. Audit and Feedback as a Quality Strategy. Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies. Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2019.
67. Australian Institute of Health and Welfare. Health of mothers and babies [Internet]. Canberra: Australian Institute of Health and Welfare, 2023 [cited 2023 Aug. 8]. Available from: https://www.aihw.gov.au/reports/mothers-babies/health-of-mothers-and-babies
68. AIHW. National Perinatal Data Collection annual update 2020 (released 21 June 2022); Table 3.5: Births, by gestational age and birth status, 2020 [Data table]. AIHW, National Perinatal Data Collection: Australia; 2022. [cited 8 Aug 2023]. Available from: https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/archived-content .
69. Rolnik DL, Wright D, Poon LCY, et al. ASPRE trial: performance of screening for preterm pre-eclampsia. Ultrasound Obstet Gynecol. 2017 Oct;50(4):492-495. doi: 10.1002/uog.18816. Epub 2017 Aug 24. Erratum in: Ultrasound Obstet Gynecol. 2017 Dec;50(6):807. PMID: 28741785.
70. The University of Sydney, Women and Babies Research Kolling Institute. Every Week Counts. 2019