

Clinical Excellence Division
Creating solutions for better healthcare

Recommendations for antenatal education

Content, development and delivery
June 2018

Recommendations for antenatal education. Content, development and delivery.

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Introduction

In November 2016 a forum was held regarding concerns about public maternity services in Queensland. As a result of the forum three working groups were established to address issues identified at the forum¹. A fourth group was established after the 'Growing Deadly Families' forum held in August 2017.

Maternity Services Advisory Group 2 focused on identification and management of risk in pregnancy. One of their action items was to identify best practice antenatal education and develop statewide recommendations to improve the quality of and access to antenatal education across Queensland. A systematic literature review (Appendix 2) was undertaken in late 2017 which identified 13 recommendations for content, development and delivery of antenatal education programs.

To find out whether Queensland public maternity services were already meeting the recommendations a survey was sent statewide to midwives, antenatal educators and other clinicians working in maternity. The survey found that most services were considered to be meeting recommendations relating to labour and birth. However, there was significant room for improvement with regard to the evaluation of the programs provided, the development of education that meets the needs of the community, and offering a range of antenatal programs that include pre-pregnancy, early pregnancy and early parenting.

A workshop was held in April 2018 to discuss the practicalities of the recommendations, the survey results, and to identify actions that the Hospital and Health Services (HHSs) could take to meet them. It brought together key antenatal educators from across Queensland public maternity services to showcase and share information. Consumers and other stakeholders also attended and contributed to the discussions. It was identified at the workshop that there was not a specific recommendation for perinatal mental health and wellness. It was agreed that this was an important issue and a recommendation for education on perinatal mental health and wellness (recommendation 14) was developed. It has been reviewed by the Queensland Centre for Perinatal and Infant Mental Health.

The suggested actions that have been developed based on the survey results and the workshop discussions² are provided in this report to assist HHSs in meeting all 14 recommendations.

¹ Information on the forum and working groups is available at: <https://clinicaexcellence.qld.gov.au/priority-areas/service-improvement/maternity-service-improvement>

² The survey report and a workshop communique are available on request from PSQIS_Maternity@health.qld.gov.au

Recommendations for antenatal education programs

Recommendations 1 to 13 are the result of a systematic literature review³ undertaken by the University of Technology, Sydney, commissioned by Maternity Services Action Group 2 (MSAG 2).

Recommendation 14 has been developed as a result of a workshop held in April 2018 with antenatal education clinicians and consumers.

1	Antenatal education programs should be developed and delivered using the principles of adult education
2	Educators/facilitators of antenatal education programs should be adequately prepared to deliver programs in accordance with the principles of adult education and should possess well-developed group facilitation skills
3	Antenatal education programs should be delivered to small groups of participants at a time thus allowing for facilitated group interaction and participation
4	Antenatal education programs should be regularly evaluated and consideration should be given to utilising the Childbirth and Parenting Educators of Australia's (CAPEA) Competency Standards and associated assessment tool
5	When developing or reviewing existing antenatal education programs, a needs-assessment should be undertaken in the community where the program will be offered to ensure it will/is meeting local needs
6	Antenatal education programs should be developed and delivered in a culturally respectful and responsive manner and should recognise the diversity within the community and adjust content to suit community needs
7	When considering Aboriginal and Torres Strait Islander women's access to antenatal education programs, programs specific to these population groups need to be considered and Aboriginal and Torres Strait Islander women need to be involved in the development and delivery of the programs
8	Antenatal education programs should provide an opportunity for participants to develop social networks and support and as such dedicated time to socialise within the program should be a priority
9	Where practical, antenatal education programs should be planned over several sessions as this supports the development of social networks thereby increasing social support following childbirth
10	Mindfulness and therapies such as acupressure, relaxation, visualisation, breathing, massage and yoga techniques as routine content in antenatal education programs demonstrates promising outcomes and programs should be developed or adapted to include information and practise of some or all of these strategies.
11	Preparing women for unexpected events in labour, at birth and the postnatal period is important and as such common complications and interventions should be discussed in antenatal education programs but a more individual and focussed discussion should occur during antenatal care provision
12	Antenatal education program content should provide a balance of information in regard to labour and birth, usual expectations and possible complexities and the transition to parenting and should aim to be strengths-based rather than fear-based
13	Where practical, a range of antenatal education programs should be offered and may include pre-pregnancy or early pregnancy programs and early parenting programs
14	Antenatal education program content should include the emotional transition to parenthood, with a focus on perinatal mental health and emotional wellbeing

³ Smith R., Homer C., (2017). *Literature review on Antenatal education – content and delivery*. Centre for Midwifery, Child and Family Health, Faculty of Health, University of Technology Sydney.

Suggested actions for Hospital and Health Services

The following suggested actions have been developed to support Hospital and Health Services (HHSs) to meet the recommendations. They are based on observations and themes provided through a survey of clinicians in February 2018 and at the workshop held in April 2018. References to specific pages within the report on the systematic literature review have been included in the table below to provide supporting information and a rationale for why it is important to meet the recommendations.

	Recommendations	Ref	HHS / facility suggested actions
1	Antenatal education programs should be developed and delivered using the principles of adult education	page 16	<ul style="list-style-type: none"> Identify and support clinicians who are willing to provide antenatal education. Support clinicians to have off-line time to undertake training.
2	Educators/facilitators of antenatal education programs should be adequately prepared to deliver programs in accordance with the principles of adult education and should possess well-developed group facilitation skills	page 16	<ul style="list-style-type: none"> Ensure clinicians are supported and adequately trained to undertake the tasks /roles expected of them including the provision of antenatal education using principles of adult education, and group facilitation skills. Allocate a specific coordinator for antenatal education to support and coordinate training and ensure high-quality antenatal education is delivered. Consider train the trainer, mentoring, and peer-support with other antenatal educators from across the HHS or from other HHSs.
3	Antenatal education programs should be delivered to small groups of participants at a time thus allowing for facilitated group interaction and participation	pages 16-17	<ul style="list-style-type: none"> Support the provision of adequate clinician time and suitable facilities to enable small-groups sessions. Consider venues outside of the hospital e.g. local library, community health centre, GP practices, shopping centres. These can also provide an opportunity for women to become familiar with postnatal services provided in the community.
4	Antenatal education programs should be regularly evaluated and consideration should be given to utilising the Childbirth and Parenting Educators of Australia's (CAPEA) Competency Standards and associated assessment tool	pages 4-5, 16	<ul style="list-style-type: none"> Encourage all clinicians involved in antenatal education to become members of CAPEA Use the CAPEA competency standards⁴ and assessment tool for childbirth and parenting educators.

⁴ <http://www.capea.org.au/Resources/Competency-Standards-for-Childbirth-and-Parenting-Educators-Australia>

	Recommendations	Ref	HHS / facility suggested actions
5	When developing or reviewing existing antenatal education programs, a needs-assessment should be undertaken in the community where the program will be offered to ensure it will/is meeting local needs	page 15	<ul style="list-style-type: none"> Engage with community and consumer organisations in a working respectful collaborative model e.g. maternity support groups, consumer representatives, advocacy groups, multicultural community groups, community elders, Child Health Assess what other services women are accessing to inform gaps in service, care and possibly training. Utilise social media to promote the service and as an avenue to seek feedback on community needs. Survey and/or collect feedback from women before, during and after classes, and following birthing to assess expectations and needs of women.
6	Antenatal education programs should be developed and delivered in a culturally respectful and responsive manner and should recognise the diversity within the community and adjust content to suit community needs	page 14	<ul style="list-style-type: none"> Target education programs to meet the needs of cultural groups within the local community Engage stakeholders and community leaders for needs assessment and to develop culturally appropriate programmes for groups such as, Aboriginal and Torres Strait Islander women, culturally and linguistically diverse women, same sex couples/ LGBTIQ etc community, deaf/hearing impaired, and other identified groups to meet gaps in service Have women from the community involved in facilitating programmes, offer training for supported learning for these women Provide transport or use community venues and be flexible in where programmes are run Provide food or encourage women to bring a plate of food to share. It breaks down barriers and helps with social networking. Share resources with other facilities and HHSs to enhance resources and services available to women from culturally diverse backgrounds Encourage involvement of multicultural clinicians in antenatal education Refer to Queensland Health Multicultural resources (See Appendix 1 for details)

	Recommendations	Ref	HHS / facility suggested actions
7	When considering Aboriginal and Torres Strait Islander women's access to antenatal education programs, programs specific to these population groups need to be considered and Aboriginal and Torres Strait Islander women need to be involved in the development and delivery of the programs	page 14	<ul style="list-style-type: none"> • Engage with community elders to gain their support for and involvement in the sessions • Involve indigenous health workers in antenatal education sessions. • Provide antenatal education yarning sessions for Aboriginal and Torres Strait Islander women in suitable locations. These may be outside of the hospital. • Consider providing transport to and from the antenatal educational sessions. • Refer to Queensland Health Aboriginal and Torres Strait Islander resources (See Appendix 1 for details)
8	Antenatal education programs should provide an opportunity for participants to develop social networks and support and as such dedicated time to socialise within the program should be a priority	pages 10-11	<ul style="list-style-type: none"> • Provide antenatal education sessions at a variety of times and days to suit a wider range of women. • Provide adequate time and resources to support social networking. • Offer a variety of methods for accessing support and engagement e.g. online, in person, inclusive of family and men.
9	Where practical, antenatal education programs should be planned over several sessions as this supports the development of social networks thereby increasing social support following childbirth	page 15	<ul style="list-style-type: none"> • Assess and provide if required, education and support specifically for men/partners. • Assess and provide if required, a social media based support group. • Engagement with and guest speakers from other groups available to women e.g. Australian Breastfeeding Association, mother's groups, doulas. • Provision of food is a key factor and can enhance the socialisation aspect of the session. <ul style="list-style-type: none"> ○ Consider asking women to bring a small plate of food to share in the break. • Be proactive in connecting and re-connecting women, for example: <ul style="list-style-type: none"> ○ provide information about local support and social groups e.g. playgroups, child health drop-in clinics, Women's Health Queensland. ○ arrange post-natal catch-ups for women who attended the same antenatal education sessions.

	Recommendations	Ref	HHS / facility suggested actions
10	Mindfulness and therapies such as acupressure, relaxation, visualisation, breathing, massage and yoga techniques as routine content in antenatal education programs demonstrates promising outcomes and programs should be developed or adapted to include information and practise of some or all of these strategies.	pages 12-13	<ul style="list-style-type: none"> • Involve other healthcare professionals and other practitioners with knowledge and skills in these areas to provide sessions on these topics e.g. physiotherapists, psychologists, yoga instructors, doulas • Encourage men/partners to be informed and hands-on for bonding and involvement in labour • Provide additional sources of information such as social media, books, websites, research-based sites.
11	Preparing women for unexpected events in labour, at birth and the postnatal period is important and as such common complications and interventions should be discussed in antenatal education programs but a more individual and focussed discussion should occur during antenatal care provision	page 12	<ul style="list-style-type: none"> • Assess (e.g. through discussion or a questionnaire) pre-class what the women and their support people, want to know • Offer sessions for specific /higher risk situations e.g. birth after a caesarean section. • As well as the opportunity to de brief, consider offering postnatal education to enable women to understand their experience.
12	Antenatal education program content should provide a balance of information in regard to labour and birth, usual expectations and possible complexities and the transition to parenting and should aim to be strengths-based rather than fear-based	pages 10 -12	<ul style="list-style-type: none"> • Consider multidisciplinary collaboration e.g. GP, psychologist, perinatal mental health, Child Health, physiotherapist, social work, dietician, lactation consultant • Share positive stories, use affirmation, positive language/terminology • Provide opportunities for women and their partners to debrief in a suitable, safe environment
13	Where practical, a range of antenatal education programs should be offered and may include pre-pregnancy or early pregnancy programs and early parenting programs	page 15	<ul style="list-style-type: none"> • Engage and collaborate with GPs and community services • Provide online booking-in to enable women to register early in pregnancy. They can then have access to early education and support. • Provide access to online resources such as GLOW to support early pregnancy education. • Establish social media based support groups to improve access to a range of programs. • Provide women and their partners with information on community-based service providers and support networks e.g. Child Health services, playgroups

	Recommendations	Ref	HHS / facility suggested actions
14	Antenatal education program content should include the emotional transition to parenthood, with a focus on perinatal mental health and emotional wellbeing ⁵ .	page 10 ⁶	<ul style="list-style-type: none"> • During the antenatal period, encourage parents to openly discuss concerns about transition to parenthood. • Include a focus on perinatal mental health and wellness within Childbirth/ Birth and Parenting education programs. The “Transition to Parenthood” program includes a 2-hour antenatal session (Emotional Preparation for Parenthood) and a 2-hour postnatal session (Postnatal Connections) that can be integrated into existing universal childbirth education. Manuals and online training are available free of charge through the Queensland Centre for Perinatal and Infant Mental Health (QCPIMH) ^{7, 8} • Provide expectant and new couples with information about services and resources to: <ul style="list-style-type: none"> a. help strengthen communication and prepare for the changes having a baby will bring to the couple’s relationship; b. help mothers and fathers negotiate their roles in relation to the baby, and enjoy their relationships with the baby; c. help parents understand infant psychological development, recognise infant cues and provide responsive care; d. support the mental health and wellbeing of mothers, fathers, infants and families. • Resources can be sourced locally and through the QCPIMH website: https://www.childrens.health.qld.gov.au/chq/our-services/mental-health-services/qcpimh/families/ • Provide women and their partners with information on community-based service providers and support networks e.g. Child Health services, playgroups, GPs, Lactation Consultants. • Collaborate with other services to support women and provide opportunities for them to debrief about their birth and parenting experiences.

⁵ The need for this recommendation was identified at the Antenatal Education workshop held on 26 April 2018

⁶ The literature review does not specifically discuss perinatal mental health but it does refer to the inclusion of information on emotional changes in pregnancy and ‘the increasing recognition of the importance of ensuring optimal emotional and social wellbeing by both governments and health professionals’.

⁷ Information on the “Transition to Parenthood” program is available at <https://www.childrens.health.qld.gov.au/research-projects-transition-to-parenthood-pmh-wellness-program/> or email PIMH@health.qld.gov.au. Online training is currently being developed.

⁸ For information on the implementation of this program in Redcliffe please contact Redcliffe_Maternity_Services@health.qld.gov.au

Appendix 1: Resources

- **Aboriginal and Torres Strait Islander resources for Health Professionals**
 - https://www.health.qld.gov.au/atsihealth/health_professionals
 - <https://qheps.health.qld.gov.au/atsihb/html/resources>
 - https://www.health.qld.gov.au/nutrition/nemo_a-and-tsi
- **Australian Indigenous HealthInfoNet**
 - <https://healthinfonet.ecu.edu.au/learn/population-groups/women/>
- **Multicultural health**
 - www.health.qld.gov.au/multicultural
- **Multicultural health information for the public**
 - https://www.health.qld.gov.au/multicultural/public/for_the_public
- **Multicultural health: a guide for health professionals – cultural profiles**
 - www.health.qld.gov.au/multicultural/health_workers/cultdiver_guide
 - Includes cultural dimensions of pregnancy, birth and post-natal care
- **Multicultural clinical support resource**
 - www.health.qld.gov.au/multicultural/health_workers/support_tools
- **Multicultural Health communication**
 - http://www.mhcs.health.nsw.gov.au/publicationsandresources#c3=eng&b_start=0&c1=Maternity&c1=Pregnancy+and+post+natal
- **Cue cards in community languages**
 - <https://www.easternhealth.org.au/site/item/481-cue-cards-in-community-languages>

Appendix 2:



Literature review on antenatal education – Content and delivery

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November 2017

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Executive summary

This review of the literature was undertaken to develop evidence based recommendations for the development and delivery of antenatal education programs. The aim was to:

- determine the evidence base supporting common content included in antenatal education programs
- identify the modes employed to deliver antenatal education programs
- formulate recommendations in regard to (1) essential content and (2) best-practice modes of delivery for antenatal education programs.

A mixed-method systematic literature review of peer-reviewed literature – qualitative and quantitative studies and reviews - published from 2007 to September 2017, as well as grey research literature and non-peer reviewed or published literature, was undertaken. Following a systematic search, a review of title and abstracts identified 137 potentially relevant papers. More in-depth review excluded a further 88 papers and 49 peer-reviewed publications were analysed. In addition, grey literature such as national guidelines, professional standards and government documents and websites were included.

The main finding of this systematic review of literature over the past 10 years was that there was limited evidence to support the inclusion or exclusion of specific content in antenatal education. Inclusions appear to be based on tradition, on what practitioners think women need and, in some instances, on what women have stated they want. Despite this, there is some uniformity about the current content which may be useful to guide future design of models. This specific content is identified and presented in Appendix II.

The review also did not indicate who specifically should deliver antenatal education although the Childbirth and Parenting Educators of Australia (CAPEA) Association have developed *Competency Standards for Childbirth and Early Parenting Educators* that are useful to support programs.

As a result of the review of the evidence related to antenatal education programs content and modes of delivery, a number of recommendations have been developed that provide considerations when developing and delivering antenatal education programs (Table 1).

Table 1: Recommendations for content, development and delivery of antenatal education programs

1	Antenatal education programs should be developed and delivered using the principles of adult education
2	Educators/facilitators of antenatal education programs should be adequately prepared to deliver programs in accordance with the principles of adult education and should possess well-developed group facilitation skills
3	Antenatal education programs should be delivered to small groups of participants at a time thus allowing for facilitated group interaction and participation
4	Antenatal education programs should be regularly evaluated and consideration should be given to utilising the Childbirth and Parenting Educators of Australia's (CAPEA) Competency Standards and associated assessment tool
5	When developing or reviewing existing antenatal education programs, a needs-assessment should be undertaken in the community where the program will be offered to ensure it will/is meeting local needs



6	Antenatal education programs should be developed and delivered in a culturally respectful and responsive manner and should recognise the diversity within the community and adjust content to suit community needs
7	When considering Aboriginal and Torres Strait Islander women's access to antenatal education programs, programs specific to these population groups need to be considered and Aboriginal and Torres Strait Islander women need to be involved in the development and delivery of the programs
8	Antenatal education programs should provide an opportunity for participants to develop social networks and support and as such dedicated time to socialise within the program should be a priority
9	Where practical, antenatal education programs should be planned over several sessions as this supports the development of social networks thereby increasing social support following childbirth
10	Mindfulness and therapies such as acupressure, relaxation, visualisation, breathing, massage and yoga techniques as routine content in antenatal education programs demonstrates promising outcomes and programs should be developed or adapted to include information and practise of some or all of these strategies.
11	Preparing women for unexpected events in labour, at birth and the postnatal period is important and as such common complications and interventions should be discussed in antenatal education programs but a more individual and focussed discussion should occur during antenatal care provision
12	Antenatal education program content should provide a balance of information in regard to labour and birth, usual expectations and possible complexities and the transition to parenting and should aim to be strengths-based rather than fear-based
13	Where practical, a range of antenatal education programs should be offered and may include pre-pregnancy or early pregnancy programs and early parenting programs

Consideration to these recommendations in the review, development and delivery of antenatal education programs will ensure women have access to high quality education that provides evidence based information, supports the development of social networks and provides women and their supporters with accurate information regarding pregnancy, childbirth and the early parenting period.

1. Introduction

Childbirth education has always existed albeit in a more informal or traditional manner. Historically and to the current day in many cultures and communities, women provide education, information and support regarding childbirth to other women. Generations of women have passed down knowledge of childbirth and parenting practices. Indigenous Australian women have maintained knowledge and birthing practices through a set of cultural law commonly referred to as 'Women's Business' or 'Grandmother Law' or just 'Law' (Simmonds et al. 2010). In Aboriginal Australia, older women shared pregnancy and birth knowledge with younger kin and learned cultural ways and the Law in this way (Simmonds et al. 2010). This passing down of women's knowledge and information has survived despite the introduction of Western medicine that often ignored and even banned traditional practices (Centre for Remote Health 2014).

Formal antenatal education programs, also referred to as antenatal classes; childbirth education classes; and/or prenatal education¹ has gained popularity in the last 60-70 years (Polomeno 2009). Prior to the 1950s, some formal antenatal education was offered but this was not widespread. Although it was during this time that Grantly Dick-Read and the Lamaze methods of childbirth education emerged. Dick-Read published *Natural Childbirth* in 1933 and the seminal text *Birth Without Fear* in 1944 (Polomeno 2009). The *Birth Without Fear* text promoted educating women to increase their confidence in childbirth and allow them to prepare physically and psychologically for the process of birth through controlled breathing and relaxation techniques (Smith 2015b). The Lamaze Method, based on work by Russian scientists and made popular by Dr Fernand Lamaze in the early 1950's, advocates for childbirth education classes, breathing and relaxation techniques and continuous support from a birth partner in order to promote natural childbirth and prepare women to give birth (Lamaze International 2017; Polomeno 2009). Both these styles of teaching and of preparation for birth continue to feature heavily in current formal antenatal education programs.

More formal means of childbirth education such as the provision of, and attendance at, antenatal education programs can be seen as a Westernised concept and has occurred in line with the medicalisation of childbirth and the move from home to hospital for birth (Smith 2015a). Smith (2015a) and Murphy Tighe (2010) discuss the concern that antenatal classes have been offered as a means of making sure women were aware of, and thus compliant with, hospital policies and procedures. In addition, many argue content of classes has historically been based on what educators determine women need and not on what women want (Hanson et al. 2009; Murphy Tighe 2010; Svensson, Barclay & Cooke 2007). Whilst this may have been the case traditionally, modern classes are being developed and delivered with less traditional content and in different formats or structures (Childbirth and Parenting Educators of Australia (CAPEA) 2011b).

1.1 Childbirth education in Australia

In Australia, antenatal education programs are offered by a variety of providers and in locations which may include public health departments and hospitals, private hospitals, obstetricians' practices, private midwifery practices, practitioners trained in specific birthing techniques,

¹ For the purpose of this review, 'antenatal education' will refer to education provided in specific classes or sessions and not refer to the information that should be provided to women at their routine antenatal care visits. In general terms 'Antenatal education programs' will be used to discuss the wide range of antenatal education available unless specific examples are being discussed.

physiotherapists and in some instances doulas or those with an interest in education for pregnancy and parenting (Australian Government and HealthDirect Australia 2017; Australian Health Ministers' Advisory Council 2014; Childbirth and Parenting Educators of Australia (CAPEA) 2017b). In addition to the variety in providers, there are also options in delivery format and these include one-to-one sessions, small group or large group classes, integrated antenatal care groups that include formal education opportunities (antenatal groups) and even online programs. There are also specific antenatal education programs for different groups of women such as multiple birth classes, 'young mum's classes', classes for dads/partners, same-sex couple classes and in some places classes for grandparents (Childbirth and Parenting Educators of Australia (CAPEA) 2017b; New South Wales Government 2016; Raising Children's Network 2017).

In a review of the evidence in regard to preparing for pregnancy, childbirth and parenting, the Australian Clinical Practice Guidelines – Antenatal Care recommends advising all parents that antenatal education programs provide information in regard to pregnancy, parenting and birthing but do not make a difference to birth outcomes (Australian Health Ministers' Advisory Council 2014). Specific content guidance is not provided. The Guidelines do however recommend including some psychological preparation for parenting as this improves women's mental health following the birth of the baby (Australian Health Ministers' Advisory Council 2014). Whilst they do not go as far to recommend attendance at formal antenatal education programs, they do support the provision of information in regard to locally available programs, assisting parents to find programs that are best suited to each woman's individual situation and also discussing the benefits of partners/support people attending education programs with the woman (Australian Health Ministers' Advisory Council 2014).

The most recent Cochrane review on antenatal education concluded that there is a lack of robust evaluation and research into the outcomes of attendance at antenatal education programs to guide practice (Gagnon & Sandall 2007) but an update of this Cochrane Library review of is in progress. Criticisms exist in regard to the evaluation methods of antenatal education programs where it is claimed there is an over-reliance on parental experiences and self-reported change (Gilmer et al. 2016). Other challenges in data collection were identified and included data being collected by the facilitator of the program; lack of pre and post-test designs; and, lack of consistent outcome measures (Gagnon & Sandall 2007; Gilmer et al. 2016; Hanson et al. 2009). Although antenatal education programs have changed and evolved over time there remains a paucity of evidence to support or justify the content included in the programs nor the mode of delivery.

The provision of antenatal education programs in Australia is largely unregulated. Potentially, anyone with an interest in pregnancy, birthing and/or parenting can offer a program. This is an issue recognised by the Childbirth and Parenting Educators of Australia (CAPEA) association. CAPEA is a voluntary, not-for-profit association that aims to support childbirth educators from a variety of backgrounds to deliver high-quality, accessible and responsive education around pregnancy, birth and parenting (Childbirth and Parenting Educators of Australia (CAPEA) 2017a). In 2011, in an effort to meet the aim of providing high quality and responsive antenatal education CAPEA (formerly known as NACE – National Association of Childbirth Educators) developed Competency Standards for Childbirth and Early Parenting Educators (Childbirth and Parenting Educators of Australia (CAPEA) 2011b). CAPEA claim these competency standards were largely adopted by the United Kingdom's largest provider of antenatal education the National Childbirth Trust (NCT). The intention of the

CAPEA Competency Standards is to assist women to gain access to high quality and learner centred education. A real focus of the standards is to provide a benchmark for educators to be assessed against and the competency standards are supported by a Competency Assessment Tool that aims to provide consistency in assessment of educators and of programs/classes (Childbirth and Parenting Educators of Australia (CAPEA) 2011a, 2011b). However, these standards are voluntary and it is up to providers to implement the standards and provide ongoing assessment against the tool.

There is no national data on attendance rates at antenatal education programs in Australia. A recent report from the UK claims that the National Health Service (NHS) classes were offered to approximately 65% of all women attending for public sector care, with first time mothers being more likely to be offered information about antenatal education programs. However, the survey reports that less than one-third of women attended the NHS programs. A smaller number of women reported accessing privately run antenatal programs (14%) such as those provided by the National Childbirth Trust (Redshaw & Henderson 2015).

In Australia, health professionals commonly refer women to such programs during pregnancy. A large variety of antenatal education programs are offered across Australia and include free sessions in public hospitals, self-funded private classes, individual sessions, group sessions, sessions in local pubs for fathers, and also the option of online programs (Australian Government and HealthDirect Australia 2017). The content of antenatal education programs is as varied as the mode of delivery but in general most programs include topics such as preparing for labour; active labour; pain management; breastfeeding; early parenting; and, local information about place of birth (Australian Government and HealthDirect Australia 2017). Some programs specialise in different aspects such as birth after caesarean section; multiple births; cultural/ethnic background specific groups; and birth partners or grandparents (Australian Government and HealthDirect Australia 2017).

Given the current variable provision of antenatal education programs in Australia, it is timely that this review is undertaken in an attempt to examine the evidence in relation to these programs. This review will contribute to the body of knowledge in regard to both content and mode of delivery of antenatal education programs in Australia and provide information for individuals and organisations in regard to best practice service delivery with the goal of providing evidence-based, woman-centred pregnancy and early parenting education.

1.2 Nomenclature

There exists a wide variety of names given to the provision of antenatal education and various terms are used to indicate the similar offerings. These include but are not limited to the following:

- Antenatal education
- Prenatal education
- Childbirth education
- Antenatal classes
- Prenatal classes
- Childbirth classes/birth classes
- Preparation for parenthood/parenting
- Birth preparation classes

- Various companies provide classes such as Calmbirth™, Hypnobirth™, Lamaze International™, Born Online™, etc.

For the purpose of this review, ‘antenatal education’ will refer to education provided in specific programs or sessions and not refer to the information that should be provided to women at their routine antenatal care visits. In general terms ‘antenatal education programs’ will be used to discuss the wide range of antenatal education available unless specific examples are being discussed.

2. Aims and objectives

2.1 Aim

The aim of this literature review was to:

- determine the evidence base supporting common content included in antenatal education programs
- identify the modes employed to deliver antenatal education programs
- formulate recommendations in regard to (1) essential content and (2) best-practice modes of delivery for antenatal education programs.

2.2 Objectives

The objectives of this literature review were to:

1. identify the content routinely offered in antenatal education programs across Australia and similarly resourced countries.
2. provide recommendations from the available literature on what content should be included in antenatal education programs.
3. identify and provide evidence-based critique on modes of delivery utilised for antenatal education programs.
4. develop recommendations based in the available literature on effective modes of delivery of antenatal education programs.

3. Methods

A mixed-method systematic literature review of peer-reviewed literature – qualitative studies, quantitative studies and reviews - published from 2007 to September 2017, as well as grey research literature and non-peer reviewed or published literature was undertaken. The specific details are presented in the next section.

3.1 Eligibility Criteria

Publications from 2007 to (September) 2017 were included in the review. The search included:

- Original research papers
- Peer reviewed opinion/discussion papers

Australian and international research publications were included in the review. The review gave preference to research undertaken in Australia and health systems similar to the Australian health system.

Comparative studies that provided data relative to the review objectives were included in the review regardless of the study design. Qualitative studies were also included in the review as these studies provided data on the experiences of participants and providers. Peer-reviewed opinion and discussion papers were also included due to the lack of high level evidence available to inform the review.

3.2 Search Strategy

The search strategy used was the **PICO** framework to identify papers that focus on antenatal education programs (Huang, Lin & Demner-Fushman 2006):

Participants: women and their partners; providers of antenatal education programs

Interventions: antenatal education programs – mode of delivery and/or content

Comparator: groups that did not have a specific antenatal education component (although many of the papers will not have a comparator but we will still include them as appropriate).

Outcomes: improvements in the information provided to women and their partners, improvements in birth outcomes and feeling of parenting preparation including self-efficacy and satisfaction.

3.3 Search Protocol

A systematic search of the literature was undertaken using six (6) bibliographic databases (Maternity and Infant Care; CINAHL; Medline (OVID); Scopus; Academic Search Complete; Science Direct) between 2007 and September 2017. In addition, Google Scholar was used to search for grey literature such as government and non-government reports, evaluations, policies and other related documents. In an effort to identify key antenatal education publications and resources all State and Territory Government websites, including the Australian Government Pregnancy, Birth & Baby, were searched. In addition to Government websites, other relevant Australian websites were reviewed and these included the Australian College of Midwives (ACM); Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG); Childbirth and Parenting Educators of Australia, Inc. (CAPEA); and, Raising Children's Network. A further hand search of references used to inform the grey literature was undertaken.

The following search terms were used to locate relevant documents: 'antenatal education', 'antenatal education programs', 'antenatal classes', 'preparation for parenthood/parenting', 'prenatal classes', 'prenatal education', 'pregnancy education', 'childbirth education' and 'childbirth classes'. The systematic bibliographic database searches, where possible, utilised MeSH medical subject headings. MeSH provides descriptors in a hierarchical structure that permits searching at various levels of specificity. The following MeSH subject heading was used, 'prenatal classes' which includes the following entry terms antenatal education; antenatal parenthood education; childbirth classes; childbirth education; and, expectant parent classes. Subject terms of key words for the Google Scholar search included combinations of the terms above.

All search results were imported and manually entered into Endnote bibliographic software program, broadly categorised into type of document and analysed according to method used – quantitative, qualitative or discussion/opinion.

3.4 Synthesis of findings

Initially, the titles of the retrieved studies were examined in relation to the review objectives. Following initial review and exclusion of the titles, a more detailed review of the abstract took place and eligibility was assessed. If the abstract was considered suitable for inclusion a further more detailed review of the full paper took place and final eligibility decided. Study selection disagreements were discussed by investigators and consensus for inclusion or exclusion reached.

4. Findings

The electronic search identified 1027 potential publications. Screening of the titles and abstracts of the retrieved papers identified 137 potentially eligible publications. More detailed review excluded a further 88 papers and in-depth review and analysis occurred on the remaining 49 publications (Figure 1).

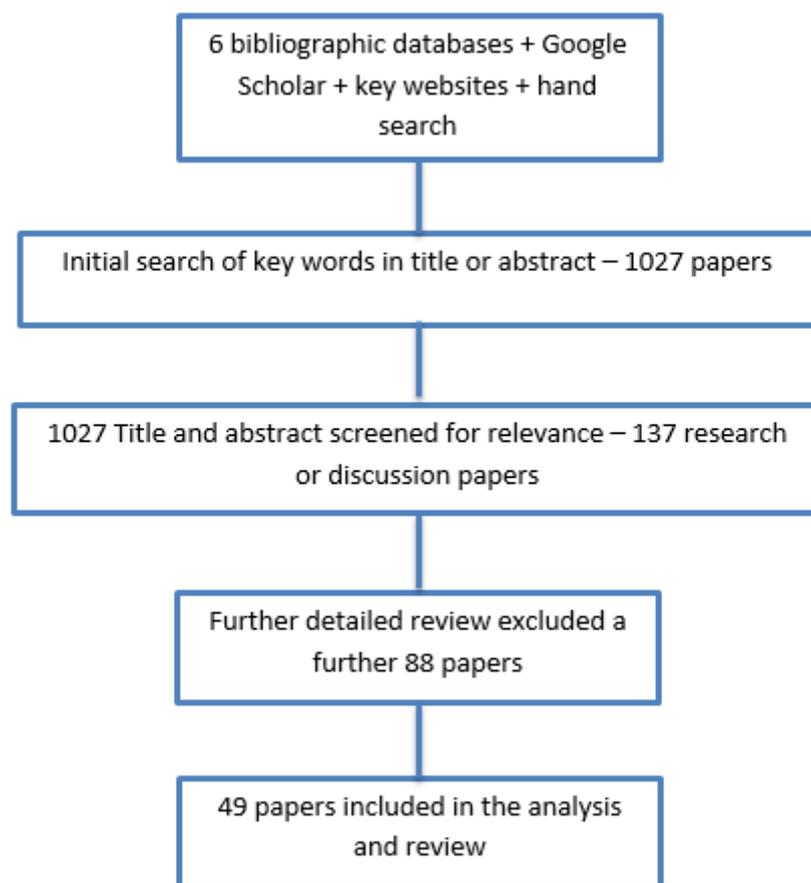


Figure 1: Search results and filtering strategy

Appendix I provides a summary of all papers reviewed.

4.1 Content

4.1.1 Evidence for essential content from literature and guidelines

This systematic review of the available evidence over the past 10 years did not find high level evidence to support the inclusion or exclusion of specific content in antenatal education. Content inclusions appear to be based on tradition, on what practitioners think women need and, in some instances, on what women have stated they want. The literature on the content is summarised below.

Antenatal education program content differs considerably between programs offered. However, there are broad content areas or topics that are similar across many (if not all) offerings. Most programs offer information on pregnancy changes; labour and birth; care of the newborn; early parenting; and, breastfeeding as standard (See Appendix II for more detailed content/topic analysis).

Available literature was reviewed to determine if evidence exists in regard to the optimal content to include in antenatal education programs. However, challenges occurred in regard to accurately determining common content of antenatal education programs as failure to provide details of antenatal program content in most publications was an issue. In addition, where content was listed, it was in general topic terms. For example, many publications stated the class content included preparation for labour and birth, but provided no further breakdown as to what aspects were discussed or whether potential complications were included and at what level of detail.

In 2007, a Cochrane review comparing group-based with individual antenatal education identified a number of common aims or intentions of education programs and these included influencing health behaviours; preparing women for childbirth and in particular increasing confidence in normal labour and birth and confidence to labour without pharmacological pain relief; supporting breastfeeding as the infant feeding of choice; enhancing the maternal fetal bond; preparing women and their partners for parenting; contributing to reducing morbidity and mortality; and, providing support for developing social networks (Gagnon & Sandall 2007). The review found there was a lack of high quality evidence and concluded that the effects of antenatal education are largely unknown and recommended further research be undertaken in this area. This review included nine trials from three different countries. The review is currently being updated but the findings are not available at this stage.

The Australian Clinical Practice Guidelines on antenatal care provide an overview of topics usually included in antenatal education programs. Topics include physical and emotional wellbeing during pregnancy; information on labour and birth options; discussion on potential birth complications; benefits and initiation of breastfeeding; early parenting and newborn behaviours; and, information on community supports (Australian Health Ministers' Advisory Council 2014). The Guidelines provide some detail in regard to the general topics such as the labour and birth information includes breathing and relaxation techniques, stages of labour, positions for labour and birth, and information on support in labour and pain relief although this appears to be general consensus information as no evidence is provided to support the listed content.

This lack of high level evidence in regard to content of antenatal education programs does not mean that women should not be offered information and education in regard to pregnancy, childbirth and early parenting, rather it should be targeted to their needs and the context of care. A practical

approach in relation to content inclusion may be required given the lack of evidence. The following outlines the content evident in the available literature and provides guidance in regard to potential antenatal education program content.

4.1.2 Potential inclusion in the content of antenatal education programs

Physiological and emotional changes in pregnancy

Many antenatal education programs provide information on the physiological changes in pregnancy (Bergstrom, Kieler & Waldenstrom 2011; Duncan & Bardacke 2010; Duncan et al. 2017; Godin et al. 2015; Martínez & Delgado 2013; Sercekus & Bakale 2016; Sercekus & Mete 2010). Very few publications provide any detail on what physiological changes were discussed or included. The Queensland Government website states topics such as *changes to your body* are included (Queensland Government 2017). The International Childbirth Education Association states that at a minimum, childbirth education classes should provide information on the physiological patterns of pregnancy, labour and birth, and the postpartum period (International Childbirth Education Association 2007). A lack of specifics in regard to content description of antenatal education programs is not an isolated finding. In a review of four American prenatal care guidelines, Hansen and colleagues identified a lack of depth of antenatal education content description (Hanson et al. 2009). As a result of the guideline comparison, Hanson and colleagues compiled an extensive list of antenatal care content but did not differentiate which content was covered in routine antenatal visits and which content should be covered in additional antenatal education programs (Hanson et al. 2009).

In addition to including physiological changes in pregnancy in antenatal education, some programs also provide information on the emotional changes during pregnancy, although this is reportedly less common (Godin et al. 2015; Sercekus & Mete 2010). However, including content on emotional or psychological wellbeing following the birth of the baby appeared more routine (Brixval et al. 2016; Duncan & Bardacke 2010; Koushede et al. 2017; Svensson, Barclay & Cooke 2009; Walker, Visger & Rossie 2009; Walker & Worrell 2008). Some claim a continued focus on physical aspects of pregnancy and birth detracts from information and discussion on the important emotional and social changes occurring (Hanson et al. 2009). Furthermore, Hanson et al. (2009) state that when psychological aspects of pregnancy are included in antenatal care/education it is more commonly referred to as counselling and that the counselling overemphasises risk and treats pregnancy as a potential disease. However, there are claims that the emphasis on the physical is decreasing with the increasing recognition of the importance of ensuring optimal emotional and social wellbeing by both governments and health professionals and therefore more emphasis this information is now being offered in antenatal education programs (Smith 2015a). The Queensland Government website state that tips on dealing with lifestyle and emotional changes are often included in antenatal education programs (Queensland Government 2017). The website also links the attendance at antenatal education programs with social support and the ability to make friendships with other attendees.

The provision of social and emotional support

More recently there is evidence to support the importance of the social support aspect of having women and prospective parents attending formal antenatal education. In her overview of the history of antenatal education, Smith (2015a) discusses the increasing importance of enabling an

opportunity for social networking among the participants as society has become more mobile and traditional support structures, such as family living close by, are not always available. Evidence from women and couples who attended antenatal classes also identifies the importance of having the opportunity to develop social networks and supports (Fabian 2008; Murphy Tighe 2010; Svensson, Barclay & Cooke 2008). Svensson et al (2008) identified that women and partners attending antenatal education programs wanted more opportunity to share and support each other and also dedicated time within the class to 'catch up'.

Providing an opportunity in antenatal programs for women to increase their support networks in regard to parenting appears to have an ongoing effect with research identifying that almost 60% of women who attended a series of State-run antenatal classes in Sweden reported contact with other participants of the program in the first year following the birth of their baby (Fabian 2008). In the UK, the National Childbirth Trust (NCT) survey of parents attending antenatal education programs reported that the most common reason for women booking into antenatal education programs was to meet other parents (98%) and following attendance, 99% of attendees stated that the course provided a useful opportunity to meet other parents (Newburn & Taylor 2011). Fisher et al. (2012) discuss women reporting a sense of empowerment and community following attendance at a mindfulness-based antenatal education program. Participants identified a sense of community being developed during, and maintained beyond, attendance at the program (Fisher, Hauck, Bayes & Byme 2012). Women report the forming of friendships through attendance at antenatal education programs assisted with the sometimes difficult transition to parenting or being a mum (Nolan et al. 2012). Purposeful support to form and develop these friendships in antenatal education programs should be a priority for facilitators (Nolan et al. 2012). As such, a vital component of antenatal education should be the facilitation of social interaction. The evidence would suggest that facilitating social opportunities is more valued by attendees of antenatal education programs than the provision of specific information regarding pregnancy, and the labour and birthing process.

Preparing for labour, birth and the early parenting period

Historically and to this day a considerable focus of antenatal education programs relates to labour and the birth process. Provision of information on signs of labour, support in labour, coping mechanisms, pain relief options, complications and/or interventions, and modes of birth are commonly listed in the content of antenatal education programs (Akca et al. 2017; Bergstrom, Kieler & Waldenstrom 2009, 2011; Fabian 2008; Godin et al. 2015; Levett, Smith, Bensoussan & et al. 2016; Maimburg et al. 2010; Martínez & Delgado 2013; Newburn & Taylor 2011; Sercekus & Bakale 2016; Sercekus & Mete 2010; Svensson, Barclay & Cooke 2009). This focus on the labour and birth has often been claimed as what women want from antenatal education programs and many health professionals are under the illusion that women are unable or unwilling to focus on information relating to after the birth as they are too focussed on the birth but this is not what women report (Ahlden et al. 2012; Martínez & Delgado 2013; Moniz et al. 2016; Svensson, Barclay & Cooke 2007).

Svensson and colleagues developed a new antenatal education program based on feedback from women about the need for increasing parenting information in programs to go alongside the usual information on labour and birth (Svensson, Barclay & Cooke 2009). The participants of the program with increased parenting content reported increased perceived maternal parenting self-efficacy and knowledge than participants who were randomised to the standard antenatal education program. Perceived parenting self-efficacy was the primary outcome measure but the study also collected

data on birth outcomes and there was no difference in outcome measures such as induction of labour, use of pharmacological pain medications or method of baby feeding between the groups (Svensson, Barclay & Cooke 2009). Others have also identified a need to increase parenting, newborn care and attachment information in antenatal education offerings (Ahlden et al. 2012; Fabian 2008; Martínez & Delgado 2013; Moniz et al. 2016; Sercekus & Bakale 2016).

Ahlden and colleagues surveyed 1117 women and 1019 partners in regard to their expectation of attending antenatal education programs in Sweden (Ahlden et al. 2012). Both women and their partners reported the need for more information on preparing for parenting and infant care than preparing for the birth itself. Others report women requesting more information in antenatal education programs on newborn care, parenting support and breastfeeding (Martínez & Delgado 2013; Moniz et al. 2016). The available evidence demonstrates that women and often partners report the need to increase the amount of information in regard to transitioning to parenting and newborn care in antenatal education programs.

Inclusion of information on potential or possible complications and interventions

There is no specific information available about the coverage of possible complications that may arise during pregnancy and childbirth. In 2011, following an investigation, the Queensland Coroner set out the following recommendation '*All women should have access to balanced antenatal information and classes clearly outlining normal and abnormal labour, when intervention may be required and why it may be necessary*' (Queensland Office of the State Coroner 2011). In addition to this, the Coroner stated that risk of interventions and the risk of not accepting the interventions be discussed in classes. Furthermore, that the circumstances of the attendance of each medical professional during labour and birth be discussed and that classes be facilitated by both midwives and obstetricians (Queensland Office of the State Coroner 2011).

There is some evidence that criticises a risk-based approach to the provision of information for women in the antenatal period which may provoke unnecessary fear for large proportions of women (Hanson et al. 2009). In addition, the potential 'nocebo' effect of antenatal education programs has been raised (Hotelling 2013). The nocebo effect refers to the negative impact that the provision of negative information or risk based discussion can have on women's experiences. Discussing options and potential complications with women in the antenatal period is important to ensure women can be prepared for unexpected events but this information may be better targeted for individual women and as such, may be better delivered in individual antenatal consultations rather than being a focus of antenatal education programs. Preparing women for unexpected events in labour, at birth and the postnatal period is important and as such possible more common complications and interventions should be discussed in antenatal education classes with a more individual and focussed discussion occurring during women's antenatal care appointments.

The inclusion of mindfulness, relaxation, meditation and yoga

A relatively recent but increasingly popular content inclusion in antenatal education programs is the practice of mindfulness or 'mindfulness-based childbirth education' (Byrne et al. 2014; Duncan & Bardacke 2010; Duncan et al. 2017; Duncan & Shaddix 2015; Fisher, Hauck, Bayes & Byme 2012; Hauck et al. 2016; Walker, Visger & Rossie 2009). Incorporating mindfulness training into antenatal education programs has been shown to possibly improve maternal mental health and reduce depression symptoms but had no impact on perceived levels of pain in labour or epidural use

(Duncan et al. 2017). In their pilot study testing the feasibility of incorporating mindfulness-based education into antenatal education programs, Byrne et al. (2014) report reductions in childbirth fear and feeling of empowerment and confidence. Fisher et al (2012) also found an increased sense of empowerment and of community within the group. In addition, participants found the training facilitated a sense of control and decision making during the labour and birth. However, others recognise that mindfulness training requires additional commitment and continued practise and due to this it may not be suitable for all women (Hauck et al. 2016).

Prior to the popularity of mindfulness, some antenatal education programs included strategies such as relaxation, meditation, controlled breathing and yoga. More recently programs incorporating complementary therapies such as acupuncture, relaxation, breathing techniques, massage and yoga (Levett, Smith, Bensoussan & et al. 2016) have been examined. In a randomised controlled trial comparing an antenatal education program that integrated complementary therapies with a standard program, participants who attended the integrated program had significantly lower rates of epidural use and caesarean section (Levett, Smith, Bensoussan & Dahlen 2016). The evidence in regard to mindfulness and complementary therapies as routine content in antenatal education programs is promising and programs should be developed or adapted to include information and practise of some or all of these strategies.

4.2 Attendance, Timing and Structure

4.2.1 Attendance at antenatal education

The Australian Antenatal Care Guidelines recommend all women be given information about attending antenatal education programs. The information should include advising women that whilst education programs have limited impact on birth outcomes they do assist in preparing for the birth, developing social networks and developing skills for adapting to parenthood (Australian Health Ministers' Advisory Council 2014). Various other Australian State and Territory Government websites also recommend attendance at, and provide information on, antenatal education programs (Australian Capital Territory ACT Health 2017; Australian Government and HealthDirect Australia 2017; New South Wales Government 2016; Queensland Government 2017).

Antenatal education/class attendance is often seen as an expectation and enquiry into planned attendance is a common question at the initial pregnancy visit, especially for women having their first baby. Many public hospitals offer free or low-cost antenatal education programs. Many private hospitals also offer antenatal education programs as do wide range of private practitioners.

Cost of antenatal education

The cost of the education programs is likely to impact on attendance. A review of various parenting and private provider websites indicates the cost of antenatal education programs varies considerably from freely provided hospital based programs to two-day programs that cost approximately \$500 dollars to attend. More recently, there has been an increase in the offering of antenatal education programs online and these courses cost between \$50 - \$250 dollars depending on the company providing the program and the amount of information accessed. As early as 1999, in the Australian Government report *Rocking the Cradle*, concern was raised into the rising cost of antenatal education programs (Commonwealth of Australia 1999). The report raised concern that with decreased funding and rising costs antenatal education programs would become the preserve

of middle-class, English speaking, urban-dwellers and made recommendations that State governments ensure equitable access to high-quality antenatal education programs for all women (Commonwealth of Australia 1999). Unfortunately, these concerns continue. Despite these recommendations, there is not currently equitable access to high-quality antenatal education for all women.

As identified in the Commonwealth's *Rocking the Cradle* report in 1999, antenatal education classes risk excluding women who would benefit from attending given attendance is known to build social support and may increase confidence in transition to parenting (Commonwealth of Australia 1999; Nolan et al. 2012; Svensson, Barclay & Cooke 2009). Inequalities in access to antenatal education programs results in some groups of women missing out on these benefits of attendance. Traditionally groups such as young women (teenage), women for whom English is not their first language and in Australia, Indigenous women and women who reside in rural or remote areas were less likely to be able to access appropriate antenatal education programs and less likely to report finding programs helpful if they did access them (Australian Health Ministers' Advisory Council 2012; Fabian 2008). More recently, some services offer programs for specific groups of women, recognising the needs of vulnerable populations but this is still not routine or widespread (Murphy Tighe 2010).

Culturally respectful and appropriate antenatal education

In Australia, limited access is not the only detractor for Aboriginal and Torres Strait Islander women to attend antenatal education programs. Culturally responsive and respectful health services are required to ensure Aboriginal women feel safe to access services (Australian Health Ministers' Advisory Council 2012; Centre for Remote Health 2014; Reibel & Walker 2010). Although much of the research in this area relates to antenatal care, antenatal education should be considered part of antenatal care regardless of the mode of delivery. Many regions across Australia have specific programs of maternity health care for Aboriginal and Torres Strait Islander women and families but these are not accessible for all women (Australian Health Ministers' Advisory Council 2012). Evidence in regard to provision of antenatal services for Aboriginal and Torres Strait Islander women demonstrates earlier and more sustained antenatal care and improved outcomes (Australian Health Ministers' Advisory Council 2012). Simmons et al. (2010), in their research with Aboriginal women, discuss the importance of respecting a 'two ways' approach to antenatal education for Aboriginal women and communities. This approach recognises both new and traditional knowledges and prioritises local Aboriginal community input when services are developed (Simmonds et al. 2010).

When considering Aboriginal and Torres Strait Islander women's access to antenatal education programs, programs specific to these population groups need to be considered. If the provision of culturally specific programs is not feasible providers should ensure all antenatal education programs demonstrate culturally responsive and respectful services (Australian Health Ministers' Advisory Council 2012).

4.2.2 Timing of antenatal education program

Limited evidence is available in regard to the optimal time to commence antenatal classes. Australian Government websites generally recommend commencing classes late in the 2nd or early in the 3rd trimester and advise women to aim for completion of the program by 36 weeks (Australian Government and HealthDirect Australia 2017). Government and popular parenting websites also

recommend booking in to the classes early as they are known to be popular (Australian Government and HealthDirect Australia 2017; Queensland Government 2017; Raising Children's Network 2017). Interestingly, the two major health professions involved in pregnancy, birth and early parenting, the Australian College of Midwives (ACM) and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), provide no specific information or guidance around antenatal education programs on their web-based information (Australian College of Midwives (ACM) 2017; The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) 2017).

Through a review of websites and professional networks, the majority of antenatal education programs are available to women and their partners or support people after 20 weeks gestation but more commonly in the late 2nd and early 3rd trimester. Although this is common practice in many places, when Svensson and colleagues (2008) interviewed women and partners about strategies for antenatal education programs, the following preferences were evident. Participants stated they would like access to a 'menu-style' approach to programs so that they could choose a program that suited their individual needs. They also felt that a pre-pregnancy and/or early pregnancy program should be offered, along with a mid-pregnancy and another towards the end of pregnancy (Svensson, Barclay & Cooke 2008). Unfortunately, there continues to be evidence to suggest that health professionals maintain control over the structure, timing and content of antenatal education programs and in the past there has been a reluctance to change (Gilmer et al. 2016; Hanson et al. 2009; Murphy Tighe 2010; Svensson, Barclay & Cooke 2007). When developing new antenatal education programs, thought should be given to undertaking a needs-assessment in the community where the classes will be offered to ensure the content and the structure of the program fits the needs of potential attendees.

4.2.3 Structure and format

The structure and format of education programs varies. A realist review into parent education interventions concluded that there was no compelling evidence supporting any single program or delivery format (Gilmer et al. 2016). An almost endless variety of structures and formats for antenatal education programs is evident throughout the review. Some of the more common formats are evening sessions of 2-3hrs over a series of 4-8 weeks; two day weekend sessions; half day sessions over a number of weekends; one-day refresher sessions; and, one-off sessions of varying lengths on particular topics such as breastfeeding or active birth. Evidence supports offering flexibility in regard to program offerings as it is recognised a 'one-size fits all' approach does not work for women in regard to antenatal education (Entsieh & Hallstrom 2016; Gilmer et al. 2016; Svensson, Barclay & Cooke 2008). However, given that a real benefit of antenatal education programs is the ability to build social networks, consideration should be given to conducting the programs over a number of sessions to better facilitate participants continued interaction (Fabian 2008; Fisher, Hauck, Bayes & Byme 2012; Murphy Tighe 2010; Newburn & Taylor 2011; Nolan et al. 2012; Smith 2015a; Svensson, Barclay & Cooke 2008).

In the past few decades, a new approach to the provision of antenatal care combined with antenatal education has emerged initially made popular by the CenteringPregnancy™ concept and now more widespread group-based antenatal care (Catling et al. 2015; Centering Healthcare Institute 2017). Group antenatal care involves the provision of all antenatal care and education in a small group of up to 12 women of similar gestational age. The group meets approximately 7-10 times (as per

recommended schedule of antenatal visits) and each session is around 90 minutes. All aspects of pregnancy care and education are addressed in the group. A systematic review on antenatal groups versus conventional care concluded that group antenatal care is acceptable to women and was associated with no adverse outcomes (Catling et al. 2015). The review did not support previous findings of reduced rates of preterm birth but authors acknowledge the small number of studies available and recommend further well-designed studies in this area (Catling et al. 2015). In regard to the antenatal education component of groups, one small study in the UK found participants reported the groups being facilitative, flexible and appeared to help in the adjustment to parenthood (Pilcher & Hughes 2014). Another aspect of the group that was seen as being important was the ability to get to know the midwife and access continuity of care. Evidence is clear in regard to the benefits of continuity of midwifery care (Sandall et al. 2016) so this is also something that should be considered when developing and facilitating antenatal education programs. Ensuring the programs are facilitated by the same practitioner may then assist in participants' willingness to participate as they are supported to develop trust in the facilitator over the course of the program.

4.3 Educational Approach

One aspect discussed at length in the literature is the educational approach or framework, or lack of, taken in the provision of antenatal education programs. The majority of researchers support using adult education principles in regard to development and delivery of programs (Childbirth and Parenting Educators of Australia (CAPEA) 2011b; Entsieh & Hallstrom 2016; Hauck et al. 2016; Murphy Tighe 2010; Pilcher & Hughes 2014; Smith 2015a; Svensson, Barclay & Cooke 2007; Walker, Visger & Rossie 2009). Numerous researchers identify components of adult education that should be included in programs such as moving away from a didactic approach to more participant involvement (Murphy Tighe 2010), making the classes more participatory and including experiential learning (Entsieh & Hallstrom 2016; Svensson, Barclay & Cooke 2009), ensuring programs emphasise learning new skills and behaviours (Hauck et al. 2016), and, changing health professionals training to include group facilitation skills (Pilcher & Hughes 2014).

4.3.1 Supporting and educating the educators

Ensuring educators are adequately prepared to facilitate antenatal education programs is important. Historically, minimal training or preparation has occurred prior to running programs and much of the learning for educators has been 'on the job' (O'Sullivan, O'Connell & Devane 2014). Both Gilmer et al. (2016) and O'Sullivan et al. (2014) argue that many health professionals that run antenatal education programs are inadequately prepared to ensure the principles of adult education are employed. The Childbirth and Parenting Educators of Australia have attempted to address this issue with the development of national competencies of childbirth and parenting educators but these are voluntary and the delivery of antenatal education programs remains unregulated (Childbirth and Parenting Educators of Australia (CAPEA) 2011b). An understanding of, and an ability to employ, adult learning principles should be essential skills and attributes required of any facilitator of antenatal education programs and as such, consideration should be given to utilising the Childbirth and Parenting Educators of Australia's (CAPEA) Competency Standards and associated assessment tool when preparing and/or employing childbirth educators.

Given the recommendations to ensure adult educational principles are employed in the delivery of antenatal education programs consideration must be given to the number of participants attending

such programs. For a truly participatory approach consideration needs to be given to group or class size number (Entsieh & Hallstrom 2016; Hauck et al. 2016; Murphy Tighe 2010; Nolan et al. 2012; O'Sullivan, O'Connell & Devane 2014; Pilcher & Hughes 2014). In Denmark, researchers compared labour and childbirth self-efficacy measures of women who attended either an auditorium-based lecture style session and a small group (6-8 couples) education program and found those involved in the small group program had significantly higher levels of confidence in their ability to cope at home in labour and confidence in ability to manage the labour than those attending the auditorium based lecture (Brixval et al. 2016; Koushede et al. 2017).

A 3-way comparison of individual antenatal education, small group education and standard care (no specific education program) in Turkey reported improved prenatal adaptation in the group education participants but no difference in postnatal adaptation between groups (Sercekus & Bakale 2016; Sercekus & Mete 2010). Although as previously discussed, this may be more to do with the social aspect than the educational content of group education. Svensson et al. (2008) discusses preferred group characteristics identified by attendees of antenatal education programs. Where participants were expecting to learn, discuss, share experiences and support each other a maximum group size of 10-12 couples or approximately 20 attendees was identified as preferable. However, if the program was about hearing detail and asking questions then participants felt a larger group could be appropriate (Svensson, Barclay & Cooke 2008). The evidence supports the provision of antenatal education programs using adult education principles in small groups and promoting group interaction and the opportunity to build social support within the group.

5. Recommendations

The above systematic and in-depth review of the literature relating to the development, delivery and content of antenatal education programs has informed the development of the following recommendations:

1	Antenatal education programs should be developed and delivered using the principles of adult education
2	Educators/facilitators of antenatal education programs should be adequately prepared to deliver programs in accordance with the principles of adult education and should possess well-developed group facilitation skills
3	Antenatal education programs should be delivered to small groups of participants at a time thus allowing for facilitated group interaction and participation
4	Antenatal education programs should be regularly evaluated and consideration should be given to utilising the Childbirth and Parenting Educators of Australia's (CAPEA) Competency Standards and associated assessment tool
5	When developing or reviewing existing antenatal education programs, a needs-assessment should be undertaken in the community where the program will be offered to ensure it will/is meeting local needs.
6	Antenatal education programs should be developed and delivered in a culturally respectful and responsive manner and should recognise the diversity within the community and adjust content to suit community needs
7	When considering Aboriginal and Torres Strait Islander women's access to antenatal education programs, programs specific to these population groups need to be considered and Aboriginal and Torres Strait Islander women need to be involved in the development and delivery of the programs

8	Antenatal education programs should provide an opportunity for participants to develop social networks and support and as such dedicated time to socialise within the program should be a priority
9	Where practical, antenatal education programs should be planned over several sessions as this supports the development of social networks thereby increasing social support following childbirth
10	Mindfulness and therapies such as acupuncture, relaxation, visualisation, breathing, massage and yoga techniques as routine content in antenatal education programs demonstrates promising outcomes and programs should be developed or adapted to include information and practise of some or all of these strategies
11	Preparing women for unexpected events in labour, at birth and the postnatal period is important and as such common complications and interventions should be discussed in antenatal education programs but a more individual and focussed discussion should occur during antenatal care provision
12	Antenatal education program content should provide a balance of information in regard to labour and birth, usual expectations and possible complexities and the transition to parenting and should aim to be strengths-based rather than fear-based.
13	Where practical, a range of antenatal education programs should be offered and may include pre-pregnancy or early pregnancy programs and early parenting programs

6. Conclusion

This review was undertaken to determine the evidence base supporting common content included in antenatal education programs and identify the modes employed to deliver antenatal education programs.

We found limited high-level evidence to support specific or common content or mode of delivery. A lack of randomised controlled trial evidence in regard to the specific common content of programs does not mean that women should not be offered information and education in regard to pregnancy, childbirth and early parenting, rather it should be targeted to their needs and the context of care. A practical and flexible approach in relation to content inclusion is required. This should be focussed on the context and women's expectations and address concerns and questions.

New evidence in regard to the inclusion of a range of approaches including mindfulness meditation and therapies such as acupuncture, relaxation, visualisation, breathing, massage and yoga techniques in programs is emerging. Inclusion of these therapies and techniques in antenatal education programs has demonstrated benefits such as reduced intervention during labour, increased feelings of control and possibly improved maternal mental health in the postnatal period and as such consideration for inclusion in programs should be given. Further studies will confirm the inclusion of these aspects in all programs.

Some evidence reports attendance at antenatal education programs increases maternal self-efficacy, reduces childbirth related fear and increases childbirth related knowledge. These positive effects may assist women physically and emotionally through the childbearing period. It is clear in the evidence reviewed that antenatal education programs need to provide opportunities for women to socialise and build support networks which in-turn assists women and families with their transition to parenting both practically and emotionally.

In addition to providing opportunity for social interaction, women and their partners report the need to increase the transition to parenting information as opposed to focussing on the birth itself. To enable an interactive and facilitative approach to delivery of programs, providers require training and development in the principles of adult education and group facilitation skills. Finally, it is of utmost importance to listen to what women and their partners are requesting and design or re-design programs to ensure high quality, interactive and woman-centred programs are available to all women who wish to attend antenatal education programs.

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Appendix I Summary of Reviewed Papers

Citation	Summary of Findings	Design/Methodology	Country
Research Papers			
(Afshar et al. 2017)	Attendance at childbirth education and having a birth plan are associated with higher rates of vaginal birth	Retrospective cross-sectional study	USA
(Ahlden et al. 2012)	Participants want more focus on preparation for parenthood than preparation for childbirth	Descriptive cross-sectional study	Sweden
(Akca et al. 2017)	Participation in childbirth education programs improves satisfaction with childbirth experience and participation with decision-making during labour	Prospective intervention and control group study	Turkey
(Bergstrom, Kieler & Waldenstrom 2009)	Attendance at a natural childbirth education program with a psychoprophylaxis component compared with a standard program made no difference in epidural use, birth experiences or parental stress	Multicentre Randomised Control Trial	Sweden
(Bergstrom, Kieler & Waldenstrom 2011)	Attendance at a natural childbirth education program with a psychoprophylaxis component compared with a standard program may better meet parents childbirth education expectations	Multicentre Randomised Control Trial	Sweden
(Brixval et al. 2016; Koushede et al. 2017)	Attendance at small group childbirth education programs increases confidence levels in regard to coping at home in labour and managing the labour process when compared with those attending large auditorium based programs	Randomised Control Trial	Denmark
(Byrne et al. 2014)	Blended skills-based and mindfulness childbirth education programs are acceptable to women and are associated with feelings of empowerment and confidence. Justification for further research	Single-arm pilot study	Australia
(Catling et al. 2015)	The review determined that group antenatal care (inclusive of antenatal education) was associated with no adverse outcomes. Benefits were unable to be determined due to small numbers	Cochrane Review	Australian Authors
(Duncan et al. 2017)	Mindfulness-based childbirth education programs may improve maternal mental health and decrease postnatal depressive symptoms	Randomised Control Trial	USA
(Entsieh & Hallstrom 2016)	Need for equal emphasis of pre and postnatal issues was identified. Participants requested hearing first-hand experiences from peers and also more information	Systematic review and meta-synthesis	Sweden

Citation	Summary of Findings	Design/Methodology	Country
	about the changes in intimate relationships		
(Fabian 2008)	Participation in a childbirth education program did not impact on the childbirth experience but did improve social networks. Higher epidural use was noted and concluded that the provision of information in regard to pain relief made women more aware, therefore more likely to access	National cohort study	Sweden
(Fisher, Hauck, Bayes & Byrne 2012)	Mindfulness-based childbirth education programs have potential to empower women and increase participation in childbirth decision-making	Generic qualitative approach using focus groups	Australia
(Gagnon & Sandall 2007)	Concluded that the effects of general antenatal education for childbirth or parenthood, or both, remain largely unknown	Cochrane Review	USA and UK authors
(Godin et al. 2015)	Participants reported an increase in pregnancy-related knowledge	Cohort study	Canada
(Ledford et al. 2016)	Use of pregnancy app prompted more engagement with prenatal education than use of a spiral bound notebook	Pilot Randomised Control Trial	USA
(Levett, Smith, Bensoussan & et al. 2016)	Participants who attended the childbirth education program incorporating complementary therapies for labour and birth reported increased knowledge and use of complementary therapies for labour and birth which in turn decreased intervention rates	Qualitative arm (interviews and focus groups) of Randomised Control Trial	Australia
(Maimburg et al. 2010)	Participants who attended a structured antenatal education program were more likely to arrive in active labour but other measures such as use of pain relief and labour interventions were no different to those who did not attend a structured education program	Randomised Control Trial	Denmark
(Martínez & Delgado 2013)	Women evaluated the childbirth education program as useful but commonly requested more newborn care content	Multicentre observational study	Spain
(Moniz et al. 2016)	Women requested more parenting support and education in antenatal period	Cross-sectional online survey	USA
(Murphy Tighe 2010)	Women valued the social aspect of meeting other women. Women preferred a participatory approach compared with didactic approach to teaching	Qualitative approach (focus groups)	Ireland
(Newburn & Taylor 2011)	Women value the social aspect of attendance at antenatal education programs.	Longitudinal survey	UK
(Nolan et al. 2012)	Friendships made at antenatal education programs support women's mental health	Qualitative exploration	UK

Citation	Summary of Findings	Design/Methodology	Country
	and enhance parenting self-efficacy	(interviews)	
(O'Sullivan, O'Connell & Devane 2014)	Survey found varied educational preparation for the antenatal educator with a wide range of educational practices being used. Large class size was a barrier to providing a participatory approach.	Descriptive survey	Ireland
(Pilcher & Hughes 2014)	Participants report facilitative and flexible antenatal groups (where education is included in the group) help in preparing for parenting. Continuity of facilitator was important	Qualitative approach using phenomenology (interviews)	UK
(Redshaw & Henderson 2015)	Identified two-thirds of women being offered information on antenatal education programs and approximately one-third of women in the UK attended antenatal education programs	National Survey	UK
(Sercekus & Bakale 2016)	Attendance at antenatal education program reduced childbirth fear and increased childbirth related self-efficacy but had no effect on parental attachment when compared with no specific antenatal education - recommendation to increase attachment content	Quazi-experimental	Turkey
(Sercekus & Mete 2010)	Comparison of participants who attended individual or group antenatal education, found improved prenatal adaptation in the education groups but no difference in postnatal adaptation. Group education more cost-effective	Quazi-experimental	
(Simmonds et al. 2010)	Aboriginal women need opportunities to be involved in the development of antenatal education programs so a 'two-way' approach to the inclusion of traditional and contemporary knowledge can make programs more acceptable for Aboriginal women	Participatory research	Australia
(Svensson, Barclay & Cooke 2007)	Identified that health professionals maintain control over content of antenatal education programs and are reluctant to change this despite evidence that participants want a stronger parenting focus	Qualitative Thematic Analysis	Australia
(Svensson, Barclay & Cooke 2008)	Participants identified three types of programs – Hearing detail and asking questions; learning and discussing; and, sharing and supporting. Participants want antenatal education programs to provide the opportunity to socialise, to see/hear the real thing and to be able to practise and discover. Also identified the importance of	Mixed method needs analysis	Australia

Citation	Summary of Findings	Design/Methodology	Country
	addressing men's needs in antenatal education		
(Svensson, Barclay & Cooke 2009)	Perceived parenting self-efficacy and knowledge scores were significantly higher in the group who received additional parenting information in the antenatal education program than those who attended the regular program. Worry scores were lower in the intervention group, but not significantly	Randomised Control Trial	Australia
Discussion and Opinion Papers			
(Childbirth and Parenting Educators of Australia (CAPEA) 2011b)	Competency standards developed by the Childbirth and Parenting Educators of Australia association. The standards were developed to provide a nationally consistent approach to development and delivery of education and also assist educators in identifying professional development and learning needs. Also provides a competency assessment tool	Competency Standards	Australia
(Daniels & Wedler 2015)	Using modern mobile technology/internet for childbirth education. Recommendation of the need for childbirth educators to direct women to credible sources	Discussion paper	USA
(Duncan & Bardacke 2010)	Conceptual and empirical foundations for the curriculum content of mindfulness-based childbirth education programs	Discussion paper	USA
(Duncan & Shaddix 2015)	Discussion to support the introduction of Mindfulness-Based Childbirth and Parenting program with the aim to improve parental mental health	Discussion paper	USA
(Ferguson, Davis & Browne 2013)	Review on the effects of antenatal education on labour and birth showed less false labour admissions, less anxiety but increased intervention such as induction and use of epidurals	Structured Literature Review	Australia
(Frazer et al. 2015)	Use of pregnancy 'applications (apps)' by the Millennial generation. Childbirth educators need to be technologically savvy to meet the needs of a new generation of women	Discussion paper	USA
(Gilmer et al. 2016)	Unlikely that a single standard format of antenatal education program will meet the needs of all parents. Multiple approaches that allow people to access information or education at a time and in a format that suits them may be of value	Realist Literature Review	Canada
(Hanson et al. 2009)	Antenatal education is insufficiently studied and often has a focus on physical needs and an emphasis on risk. It is often a one-	Critical review	USA

Citation	Summary of Findings	Design/Methodology	Country
	way communication and is based on what health professionals feel women need and not on what participants want		
(Hauck et al. 2016)	Provides rationale for incorporating adult and experiential learning principles with mindfulness-based childbirth education. Increases the variety and richness of educational offerings available to expectant parents	Discussion paper	Australia
(Hotelling 2013)	Discusses the potential nocebo effect in regard to negative information and suggestions, and the impact this has on inducing a stress response and making the negative more likely to occur. Need to consider communication style and choice of words when presenting potentially negative information	Discussion paper	USA
(International Childbirth Education Association 2007)	Outlines the organisations' position statement and expectations in regard to content of programs and training of educators	Position Paper	USA
(Polomeno 2009)	Outlines the history of antenatal education and focusses on practices in education that support transition to parenthood	Discussion paper	Canada
(Smith 2015a)	Overview of the history of antenatal education. Frames antenatal education as a westernised approach and provides some input on the debate in regard to antenatal education programs as compliance training as opposed to education	Discussion paper	UK
(Smith 2015b)	Provides an overview of the work of Grantly Dick-Read, author of Birth Without Fear	Discussion paper	UK
(Walker, Visger & Rossie 2009)	Discussion on contemporary childbirth education models	Discussion paper	USA
(Walker & Worrell 2008)	Discussion comparing the Centering Pregnancy™ style of prenatal education with childbirth education classes. Identify a common important aim of promoting positive perinatal outcomes	Discussion paper	USA

Appendix II Content of Antenatal Education Programs

Common Content	<p>Pregnancy changes and/or physiology of pregnancy Emotional changes during pregnancy Labour and birth including:</p> <ul style="list-style-type: none"> • Relaxation techniques/coping mechanisms • Controlled breathing • Active labour • Support in labour • Common interventions • Pharmacological pain relief • Mode of birth including normal; instrumental and operative • Birth plans <p>Care of the newborn including:</p> <ul style="list-style-type: none"> • Normal newborn behaviour • Baby care such as bathing/changing • Tests to protect babies • Vaccinations <p>Infant feeding:</p> <ul style="list-style-type: none"> • Focus on breastfeeding <p>Postnatal recovery including:</p> <ul style="list-style-type: none"> • Physical recovery • Emotional recovery • Mental health • Relationship changes
Program specific content	<p>Hypnotherapy Mindfulness Complementary therapies:</p> <ul style="list-style-type: none"> • Massage • Acupressure • Visualisation • Yoga <p>Nutrition for pregnancy/weight gain Exercise in pregnancy Life skills – relaxation/coping Working with fear</p>
Emerging evidence	<p>Mindfulness Complementary therapies – specifically acupressure, relaxation, visualisation, breathing, massage and yoga techniques</p>