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Evidence Check

Healthy mothers and babies – a life-course approach

An **Evidence Check** rapid review brokered by the Sax Institute for the NSW Ministry of Health. October 2018.

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This report was prepared by:

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October 2018

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Healthy mothers and babies – a life-course approach

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Executive summary

Background / Purpose of the review [Heading 2]

This Evidence Check aims to provide an evidence base to support the direction for the revised state-wide policy on maternity care in NSW. The objective was to identify and synthesise evidence addressing pre-defined questions relevant to women, their babies, their families, and public health service providers of maternal, child and family care.

Review questions

This rapid review sought to address the following questions:

Question 1:
What life-course approaches have been implemented and evaluated for maternal and infant health services?

Question 2:
Of the life-course approaches described in Question 1, what health outcomes for mothers and babies have been shown to improve?

Question 3:
What were the critical success factors identified by study authors in the life-course approaches described in Question 1?

Key findings

Approaches were designated as either frameworks, or programs. Frameworks were targeted at those interested in maternal and newborn health, such as health care providers, others involved with maternal and newborn health and those who plan, manage and decide on maternal and newborn health programs and services. Programs were defined as approaches comprising a broad multidisciplinary or multicomponent package of care implemented among a target population.

This rapid review found few maternal and child health frameworks or programs that take a life-course approach had been implemented and the majority had not evaluated longer-term outcomes. The life-course approach is relatively new to policy and programming. While this approach is currently being implemented as a framework in some settings (NSW's *Healthy, Safe and Well* strategic plan, and the Canadian *Family-Centred Maternity and Newborn Care: National Guidelines*, the UK's *Health Matters*), these have not been evaluated. At a program level, most life-course programs targeted specific populations. Of those evaluated, most focussed on short-term outcomes; with long-term outcomes rarely available. While three programs evaluated long-term outcomes and all found a positive impact, these all targeted specific groups. As such these would need to be implemented and evaluated more broadly to determine if effects could be extrapolated to the general population.

Recommendation

The NSW Kids and Families *Healthy Safe and Well* strategic plan has adopted the life-course approach and includes the general principles of quality care programs. In Australia we also have access to recently published, evidence-based *Clinical Practice Guidelines for Pregnancy Care, and Mental Health Care in the Perinatal Period: Australian Clinical Practice Guideline*. Of the frameworks that used the life-course approach, the UK's *Health Matters* would be most applicable to this approach in NSW. It is based on a rapid review and includes evidence-based interventions across all stages of maternal and infant care, and also includes programs that target selected populations. Evaluations are planned, and it is important that these are built into any new approach for maternal and infant health services.

Review aims and objectives

This Evidence Check aims to provide the evidence base to inform a revised state-wide policy on maternity care in NSW, to improve the health of women, their babies, and their families, taking a life-course approach.

Review questions

As stipulated by NSW Health, the review seeks to address the following three research questions (a more detailed description of the scope of each question is discussed below):

Question 1:
What life-course approaches have been implemented and evaluated for maternal and infant health services?

Question 2:
Of the life-course approaches described in Question 1, what health outcomes for mothers and babies have been shown to improve?

Question 3:
What were the critical success factors identified by study authors in the life-course approaches described in Question 1?

It is noted that Question 2 and Question 3 are essentially sub-questions of Question 1, and evidence to address Questions 2 and 3 will be derived from the evidence base of the life-course approaches identified by Question 1.

The review sought to identify studies assessing the impact of delivering multicomponent packages of care that have been delivered during one or more phases of the perinatal period (from preconception up to six weeks postpartum, approximately 350 days) with the intention of improving longer term maternal and/or child outcomes (i.e. a life-course approach).

Background – life-course approach

A life-course approach to health recognises that the health of an individual is interconnected by continued life stages and that health outcomes across the lifespan are determined by a multifaceted relationship of biological, social, and environmental factors.[1] This approach originated early last century when policy makers recognised that social disparities and childhood deprivation have serious long-lasting health consequences.[2] In recent times, the importance of taking a life-course approach in health development and health promotion strategies has been increasingly recognised as an effective way to improve population health trajectories.

Establishing maternal and child health as central to optimising lifelong health is one of the most important aspects of the life-course approach. This model recognises that outcomes and events happening around pregnancy are not only determined by previous maternal experiences, but also have a significant impact on development and lifespan trajectories of the child.[3] Additionally, it is important to highlight that health outcomes are the result of an accumulation of critical risk factors, and early intervention provides the most effective impact in improving long-term health (Figure 1).

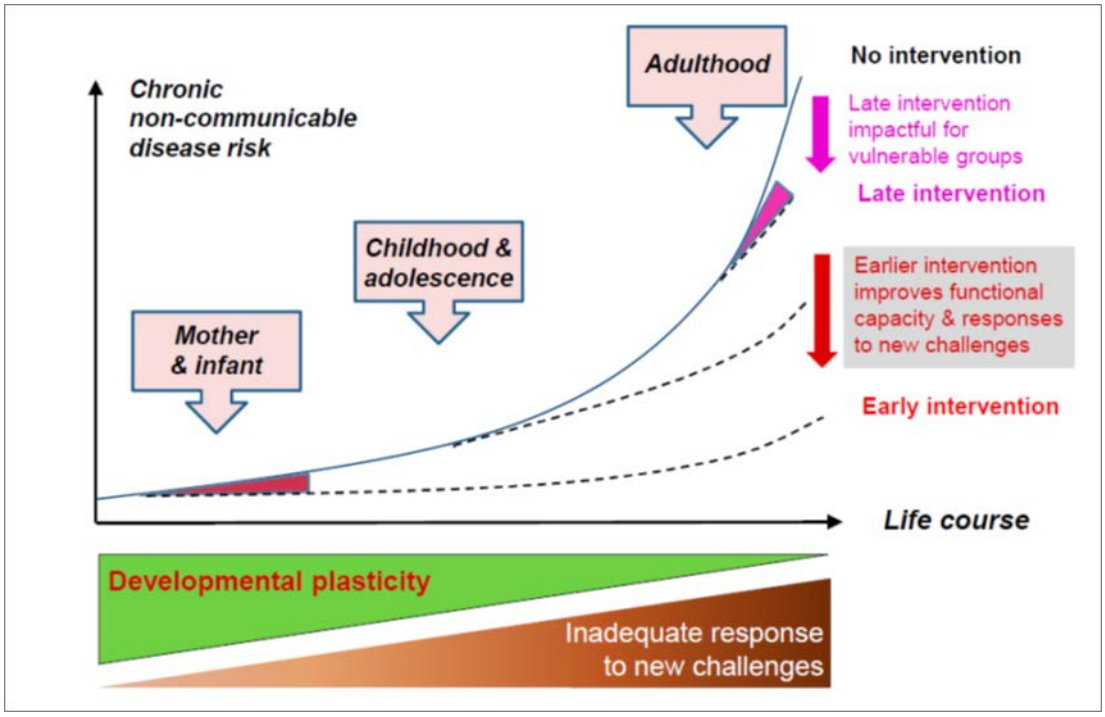

Figure 1: Timing of interventions and effect on disease risk (from Baird et al.[4])

We know that the health of mothers during and after pregnancy, and the physical and social environment in which children grow, can have a profound and lasting effect on child development, school readiness, later educational achievement and the risk of long-term chronic disease in later life.[5] Early interventions to improve child development are the most cost effective interventions throughout the life course.[6] Early child development is an important predictor of health, wellbeing, school attainment and consequently, the life chances of children as they grow to adulthood.[7-9] Several recent high profile independent reviews have highlighted the importance of early intervention to promote child development, enhance parental-child interaction and support parents to give children the best possible environment to develop, as a way of improving life chances and decreasing inequality in society.[9-11]

The introduction of a life-course approach into health policies takes a holistic longer-term view of service provision, where the promotion of not only maternal health but also the long-term health and development of the child is central. The scope of the present review includes recognising existing evidence based maternal and child health programs that have been implemented in a life-course context; evaluating maternal and baby outcomes (short, medium and long term) and identifying critical success factors of these approaches.

NSW Health's framework for the care of women and their babies, detailed in the *Healthy, Safe and Well* strategic plan for children, young people and families in NSW, encapsulates a life-course approach (Figure 2).

Figure 2: NSW Kids and Families, Healthy Safe and Well: a Strategic Plan for Children, Young People and Families 2014–24[12]

Objectives of the NSW Health framework focus on:

Helping parents prepare for pregnancy and improve their health

Healthy pregnancy starts with planning pregnancies. A healthy woman is more likely to give birth to a healthy baby. Preconception and pregnancy care are vital to both mother and child.

A significant proportion of the burden of disease is preventable and directly linked to risk factors including smoking, alcohol, being overweight or obese and a lack of exercise. Many of these factors are more amenable to change *before* rather than *during* pregnancy. Internationally there has been increasing recognition of the importance of the global burden of non-communicable disease, including obesity, diabetes, cardiovascular disease, dental and bone health and healthy aging. This has led to interest by clinicians, researchers and policy experts in the life-course approach to health, whereby it is recognised that in-utero or early childhood health influences health in later life and prevention of accumulation of health risk factors in early life influences life-long health.

Being born early (premature) and/or small are risk factors for adverse health in later life. Improving maternal health prior to a pregnancy can reduce adverse health factors in pregnancy that impact on both mother and baby. Women's health can be affected by changes in pregnancy at birth and by caring for children. Prevention of life-long health factors that may develop in pregnancy can lead to long-term improvements in maternal, child and family health.

Improving access to high quality, woman-centred care from early pregnancy

Women may be vulnerable because of psychological, medical or social factors. Vulnerable women should be supported during pregnancy and after birth to improve their own health and the health of their baby. Vulnerable women require specific customised and targeted services responsive to their needs. All women should have access to inclusive, family centred, culturally respectful care.

Strengthening the provision of safe, evidence-based birth options

All women should have a positive experience of maternity and neonatal care that is focused on them and their family's needs. Care should be high quality, safe and person-centred, starting in early pregnancy. Women should have choices about their care. Care should be as close to home as possible.

Supporting transition from postnatal care to parenthood

Pregnancy, the birth and the early weeks of a child's life are an important period for the future of the child and the family. Emotional and physical health from childhood to adulthood is affected by what happens in pregnancy and early childhood. Maternal health and wellbeing is directly related to fetal, infant and childhood physical and mental health.

Preconception, pregnancy, birth and early childhood periods have long-term health, economic and social consequences for the whole community. This review highlights critical stages of intervention across pregnancy, birth and early childhood, to help guide NSW maternity services to provide appropriate, safe and effective access to maternity care for women and their babies with the goal of achieving the best possible health and developmental outcomes as key health policy goals.

Methods

Definitions used in the review

Perinatal: The time from conception up until 350 days. This definition differs slightly from that of the World Health Organization (WHO), which defines the perinatal period as commencing at 22 completed weeks (154 days) of gestation and ending seven completed days after birth.[13]

Pre-conception: The time one year before conception (where conception may be planned or unplanned).

Intervention: Any individual course of activity (medical or non-medical) delivered with the intention of changing outcomes.

Approach: Any explicit orientation of health services to deliver multidisciplinary and/or multicomponent care to a woman and/or her infant.

Life-course approach: Any approach (as defined above) delivered during one or more phases from pre-conception through to 350 days after conception, with the intention of improving maternal outcomes and/or child health and development beyond the intervention period.

Prevention: The delivery of an intervention to an individual with no history of a particular condition or issue for the purpose of reducing the likelihood the individual will develop that condition or issue (this is commonly referred to as primary prevention).

Secondary prevention or early intervention: The targeted delivery of an intervention to an individual at elevated risk of developing a particular condition or issue (due to current risk factors or personal history of that condition or issue), for the purpose of reducing the likelihood the individual will develop that condition or issue.

Neonate: A liveborn baby up to 28 days of life.

Short-term outcomes: Maternal, infant or family outcomes occurring during pregnancy, birth or within six weeks of birth as short-term outcomes.

Intermediate-term outcomes: Occurred in the period between six weeks to 12 months after birth.

Long-term outcomes: Occurred more than one year after birth.

Targeted literature review

We undertook a targeted search of the grey and peer-reviewed literature to identify studies for inclusion in the review. Details of the search strategies are provided in Appendix 1. We also undertook snowballing and cascade searching of the bibliographies of included studies to supplement the list of included studies.

The search of the grey literature included an online search to identify life course approaches for maternal and infant health care in similar health care settings to New South Wales.

A search of published peer reviewed articles was conducted in April 2018 using electronic databases, MEDLINE (1946-current), PsycINFO (2002-current), CINAHL, Maternity & Infant Care Database (1971-current), Joanna Briggs Institute Database, EBM Reviews – Cochrane Database of Systematic Reviews (2005-current) and EBM Reviews – Database of Abstracts of Reviews of Effects (2016-current). The search terms included all stages of perinatal care (including preconception, prenatal, antenatal and postnatal care), and program evaluation.

In addition, we searched the Cochrane Database of Systematic Reviews for completed reviews published since 2013. We reviewed all titles published by the Pregnancy and Childbirth Review Group, Neonatal or Pregnancy and Childbirth Groups under the topic Effective Practice and Health Systems and Effective Practice and Organisation of Care Group under the topics Child Health, Neonatal Care or Pregnancy and Childbirth.

Table 1 defines the population, intervention, comparator, outcomes and health care setting (PICOS) criteria for Research Question 1. Life-course approaches were considered for inclusion if they met these PICOS criteria.

Table 1: Population, intervention, comparator, outcomes and setting(PICOS) criteria to define included studies

Population(s) to whom intervention is delivered (P)	Intervention (I)	Comparator (C)	Outcomes (O)	Health care setting (S)
• Women in the preconception period • Women during pregnancy • Women in the postnatal period • Baby in-utero • Neonate • Infants (where intervention commenced in first six weeks) • Any immediate family member of a woman in the preconception or perinatal period	Any life-course approach as defined in this protocol	Any definition of standard or usual care	Short-, intermediate- and long-term outcomes related to mothers, infants, families and health services	• Countries with maternal and child health clinical practices similar to Australia (for example, New Zealand, UK, Western Europe, Canada) • Metropolitan and rural settings will also be considered

Key outcomes

NSW Health requested that we evaluate life-course approaches for a range of outcomes, including *short-term outcomes,* such as pre-term birth, birthweight, breastfeeding, morbidity, mortality; *intermediate-* and *long-term outcomes,* such as maternal and child morbidity (cardiovascular disease, diabetes, kidney disease, obesity, mental illness) and child development (gross motor, language, cognitive). Family-, and health service-related outcomes (such as birth interventions, admissions to intensive care, length of stay, emergency department admissions, and hospital readmissions), were also included if they were evaluated as part of a life-course approach.

Other key outcomes included satisfaction, economic evaluations and factors identified as facilitators or inhibitors of approaches.

Data extraction

Relevant data were extracted into data collection forms (Appendix 2). Data included key characteristics of life-course approaches, including design, setting, target population and details of the approach. We also reviewed the focus of the approaches in relation to NSW Health's Framework for care of women and their babies and identified whether these covered the preconception, pregnancy, birth and postpartum periods. Details of any evaluation conducted and the type and timing of outcomes measured were also extracted. Where appropriate, quantitative data were entered into an Excel spreadsheet, noting the findings of the outcome measure, effect size and any subgroup analyses. We also ascertained information about approaches that evaluated satisfaction with care, economic evaluation, factors that influenced outcomes such as facilitators and inhibitors, and any other relevant outcomes.

Synthesis

We summarised findings using narrative synthesis methods.[14]

Results

Search results

The grey literature identified over 65 references requiring review. Three authors assessed these records, to identify programs to be included.

The databases search returned 770 citations; 147 duplicate records were removed leaving 623 records for review. For each citation, two authors reviewed each title (and abstract where necessary) for inclusion; discrepancies were resolved by discussion or referral to a third author. We identified 82 citations for further review and data extraction, if eligible.

The search of the Cochrane Database of Systematic Reviews identified 27 potential reviews, of which six were included. We excluded reviews where no trials were found (e.g Opray et al.[15]), where the intervention targeted a condition (such as domestic violence e.g Jahanfar et al.[16]), where the setting was not relevant to NSW (e.g Balogun et al.,[17] Lassi et al.,[18] Mbuagbaw et al.[19]), or where interventions were covered by national antenatal or perinatal mental health guidelines (e.g Mbuagbaw et al.[19]).

Included approaches

After combining results from all three searches, we identified a total of 39 approaches applying a life-course approach to maternal and infant health services. Where systematic reviews were available, we included results from these, rather than from individual studies of these types of programs (such as home visiting programs, group prenatal care programs).

Excluded approaches

Due to the lack of a universal health care system in the United States of America (USA), we excluded a number of programs (such as *Healthy Start*, *Best Babies Zones*, the special supplemental nutrition program for women, infants, and children (WIC).[20-30] These programs all targeted disadvantaged communities. We also excluded interventions targeting specific conditions, such as for women with gestational diabetes, or obese women.

Types of approaches included

Based on search results, we designated life-course approaches as either frameworks, or programs.

Frameworks were defined as approaches or guidelines targeted at those providing maternal and newborn health services, others involved with maternal and newborn health and those who plan, manage and decide on maternal and newborn health programs and services.

We defined *programs* as approaches comprising a broad multidisciplinary or multicomponent package of care being implemented amongst a population.

Frameworks

We identified seven frameworks – three national (from Canada, Ireland and the UK) and four state or provincial frameworks (from Australia, Canada and the USA) (Table 2, with detailed information available in Appendix 3). All targeted whole populations and most were published from 2014.

Table 3 highlights the general principles and elements identified in each of the frameworks. These frameworks typically recommended evidence-based guidelines, particularly for pregnancy. Only three (NSW: *Healthy, Safe and Well*, Canada: *Family-Centred Maternity and Newborn Care: National Guidelines*, UK: *Health Matters*) aimed to cover all four relevant periods (preconception, pregnancy, birth and the post-partum period). All were developed for policy makers, health professionals and providers, and local authorities. Although none have been evaluated, common key elements included health and wellbeing during pregnancy, care during labour and birth, and transition to parenthood. Four frameworks continued past the perinatal period to age two years or older.

Four frameworks also included care prior to pregnancy (preconception care) (Table 2).[31-33] Ireland's national maternity strategy acknowledged the importance of preconception care and identified some elements to be considered.[34] Typical elements included folic acid intake, mental health, immunisations, nutrition, alcohol

consumption, healthy body weight, physical activity, smoking, and environmental hazards in the home, community, workplace, and other places, contraception, family spacing and sexual health.

Three frameworks included more detail on topics to be considered during pregnancy.[31, 33, 34] These typically covered nutrition, physical activity, overweight and obesity, tobacco, alcohol and other drugs, breastfeeding, sexual health, immunisations, social isolation and stress/ mental health, domestic violence, and child welfare.

Labour and childbirth were included in three frameworks (Canada, NSW and Ireland). In Canada, while no specific guidelines have been published so far, care during labour and birth should follow the principles of care guiding the framework development.[32]

Four frameworks provided information on elements of newborn care, transition to parenthood and early childhood with breastfeeding support, early parent-child attachment and newborn screening most frequently listed.[12, 31, 33, 34] Some frameworks extend beyond the newborn period to include supporting parents to provide a safe, nurturing and stimulating home environment; ensuring all parents have access to culturally appropriate, universal child and family health services; and providing targeted health services for vulnerable families and actively connect them to additional support services.

Table 2: Summary of included frameworks

Framework name	Country region	Target population	Description of framework	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Post-partum	
Family-Centred Maternity and Newborn Care: National Guidelines[32]	Canada	All women, infants and families	Currently, overall principles for all guidelines, and guidelines for preconception care published. Other guidelines to be developed.	✓	✓	✓	✓	×
Alberta Perinatal Health Program[33]	Canada, Alberta	All pregnant women	Services provided to health care professionals and families to increase practitioner knowledge and skills, improve clinical practice; improve the quality of care to mothers and infants and influence perinatal health policy.	✓	✓	×	✓	×
Healthy Child Manitoba[35]	Canada, Manitoba	Pregnant mothers, children and families	Focus on child-centred public policy through the integration of financial and community-based family supports. HCM researches best practices and models and adapts these to Manitoba's situation. It strengthens provincial policies and programs for healthy child and adolescent development, from the prenatal period to adulthood.	×	✓	×	✓	×
Colorado Early Childhood Framework[36]	USA, Colorado	Children – prenatal to age eight years	Framework for whole child and family centred, prenatal through age eight, strengths-based, culturally relevant and responsive, outcomes-focused. Informed by evidence based and promising practices and cross sector collaboration. It is a web-based, interactive tool that allows organisations to	×	U	U	✓	×

Framework name	Country region	Target population	Description of framework	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Post-partum	
			share programs and best practices and align their work under the domains and outcomes of the Framework.					
Healthy, Safe and Well: A strategic health plan for children, young people and families 2014–24[12]	Australia, NSW	All people in NSW from preconception to 24 years of age	A strategic health plan providing a comprehensive planning, service and policy roadmap from preconception to 24 years of age, five strategic directions, of which the first is caring for women and babies.	✓	✓	✓	✓	×
National Maternity Strategy – Creating a Better Future Together 2016-2026[34]	Ireland	This strategy places the mother as the focus of the strategy	A model of care with three care pathways: Supported Care, Assisted Care and Specialised Care. All care to be evidence-based, woman-centred and provided by a multidisciplinary team. Incorporates: a health and wellbeing approach to ensure babies get the best start in life; women have access to safe, high quality, nationally consistent, woman-centred maternity care; pregnancy and birth recognised as a normal physiological process, and insofar as it is safe to do so, a woman's choice is facilitated; maternity services are appropriately resourced, underpinned by strong and effective leadership, management and governance arrangements, and delivered by a skilled and competent workforce, in partnership with women.	×	✓	✓	✓	×

Framework name	Country region	Target population	Description of framework	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Post-partum	
Health Matters[31, 37-41]	UK	Women, children and families; antenatal to five years of age	Framework to promote child health for every child. It includes: Healthy Child Programme, Healthy Start, Fit for pregnancy: pre-conception, resources to support teenage pregnant women and vulnerable young families, fit during pregnancy, sexual health, immunisation, risk factors in pregnancy, protecting infant health, supporting transition to parenthood, the first two years in life, review of child development at 2-2.5 years	✓	✓	✓	✓	×

Table 3: Principles and elements identified in frameworks

	National frameworks			State / provincial frameworks			
	Canada [32]	UK [31]	Ireland [34]	Colorado [36]	NSW [12]	Alberta [33]	Manitoba [35]
General principles							
Family /women / child centred	✓		✓	✓	✓		
Community-based					✓		✓
Cross-sector collaboration				✓	✓		✓
Integrated connected health care			✓		✓		✓
Care as close to home as possible	✓		✓		✓		
Equitable access/Inclusive - sensitive to different cultures, Indigenous groups and responsive to diversity	✓		✓	✓	✓		✓
Identify vulnerable women, children and families and provide access to support for their safety and wellbeing			✓		✓		
Safe, high quality care			✓	✓	✓		✓
Evidence based (from local, national and international best practices)	✓		✓	✓	✓		✓
Ongoing evaluation - to inform future strategy and for accountability	✓				✓		✓
Right care, right place, right time	✓		✓		✓		
Maternity services are appropriately resourced			✓				
Effective leadership			✓		✓		
Skilled and competent workforce			✓		✓		
Elements of care: preconception							
Physical activity	✓					✓	
Alcohol consumption	✓	✓				✓	
Multivitamin, including folic acid, and or vitamin D	✓	✓	✓			✓	
Mental health	✓					✓	
Healthy relationships						✓	
Immunisations	✓	✓				✓	
Nutrition	✓		✓			✓	
Healthy body and weight	✓					✓	
Smoking cessation	✓	✓				✓	
Environmental hazards (chemical exposures, food handling, heat, occupational exposures)	✓					✓	
Drug use and misuse (street, prescribed, over-the-counter, herbal products)	✓		✓			✓	

Table 3: Principles and elements identified in frameworks

	National frameworks			State / provincial frameworks			
	Canada [32]	UK [31]	Ireland [34]	Colorado [36]	NSW [12]	Alberta [33]	Manitoba [35]
Screen for sexually transmitted infection (STI) risk factors	✓					✓	
Optimise chronic medical conditions prior to conception to improve perinatal and maternal outcomes	✓		✓			✓	
Contraception/Family spacing (including reduction teenage pregnancy rates)/reproductive life plan	✓	✓				✓	
Elements of care: pregnancy							
Accessibility			✓				
Option of shared care			✓				
Smoking cessation		✓	✓				
Alcohol consumption		✓	✓				
Drug use issues		✓	✓				
Relationships/Social isolation and stress, domestic violence and abuse		✓	✓			✓	
Mental health			✓				
Child welfare and abuse			✓				
Sexual health (including STI screening)		✓					
Immunisation		✓	✓			✓	
Obesity/overweight			✓				
Healthy weight gain						✓	
Nutrition		✓	✓			✓	
Food safety						✓	
Folic acid, vitamin D, other nutrients			✓			✓	
Physical exercise		✓	✓			✓	
Breastfeeding		✓	✓				
Promotion parent-child bonding			✓				
Avoid hazards (home, work)						✓	
Elements of care: labour and childbirth							
Pregnancy and birth is recognised as a normal physiological process	✓		✓		✓		

Table 3: Principles and elements identified in frameworks

	National frameworks			State / provincial frameworks			
	Canada [32]	UK [31]	Ireland [34]	Colorado [36]	NSW [12]	Alberta [33]	Manitoba [35]
Birth options appropriate to level of risk			✓		✓		
Elements of care: newborn care to ~six weeks postpartum							
Newborn care							
Breastfeeding support/promotion		✓	✓		✓	✓	
Newborn screening		✓				✓	
Immunisation		✓					
Skin-skin contact/Secure attachment Early parent–infant attachment is critical for newborn and child development and the growth of healthy families		✓				✓	
Maternal mental health		✓					
Women should be encouraged to attend a six week post-natal check with her GP			✓			✓	
Postnatal care							
Nutrition and physical activity		✓			✓		
Oral health		✓					
Safety		✓					
Ready to learn		✓					
Review of child development		✓					
Support parents to provide a safe, nurturing and stimulating home environment					✓		

Notes:

Canada: Elements of pregnancy, labour and childbirth, newborn and early childhood care are being developed.

Ireland's framework also includes principles of care for bereavement and palliative care, and pregnancy loss.

Alberta Perinatal Health Program: Information obtained from the website *Information for Families – Healthy Parents Healthy Children* (http://www.healthyparentshealthychildren.ca). Elements of preconception care and pregnancy care are listed, but for labour and birth, newborn care and care early childhood care, the website provides information for parents, rather than elements. The website section for professionals was not accessible.

Principles and elements identified depend on information available.

Programs

We included 22 programs and 10 systematic reviews. Table 4 provides a summary, with detailed information available in Appendix 4.

There were 10 programs from Australia and 12 in other countries. Only four programs covered preconception through to the postpartum period and 13 programs included an evaluation.

Of the 10 Australian programs, four were offered in Indigenous populations, and five in specific populations, such as refugees and vulnerable families. Only the Western Australian program targeting preterm birth was population-based.

Among the programs conducted in other countries, four covered whole populations, one was conducted in an Indigenous population, and seven in other specified populations.

In this section, we also included 10 systematic reviews, covering: preconception health interventions; group prenatal care; number of antenatal visits; carrying full case notes; telephone support; maternity care coordination; childbirth in birth centres or hospital wards; midwifery-led continuity of care; and early postpartum home visiting. One reviewed maternal and child health services for Australian Aboriginal and Torres Strait Islander peoples.

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
Programs – Australia								
Aboriginal Family Birthing Program[42, 43]	Australia, SA	Aboriginal families living in major city, inner and outer regional, and remote/very remote areas of SA	A network of services to provide culturally competent antenatal, intrapartum and early postnatal care.	✓	✓	✓	×	✓
Baby Basket Program[44-46]	Australia, Cape York	Pregnant Murri women	A baby basket provided to pregnant women at three time points: in the first trimester, immediately prior to birth and in the first weeks post-birth. Aim to encourage early and frequent attendance at antenatal clinics and regular post-natal check-ups.	✓	✓	✓	✓	✓
Aboriginal Maternity Group Practice Program[47, 48]	Australia, WA: metro	Pregnant Aboriginal teens/women	The program employed Aboriginal Health Officers, Aboriginal grandmothers and midwives to work with existing services.	✓	✓	✓	×	✓
NSW Aboriginal Maternal and Infant Health Strategy (AMIHS)[49]	Australia, NSW, in 20 Local Government Areas	Aboriginal women and non-Aboriginal women with Aboriginal partners during pregnancy and	A community midwife and Aboriginal health worker were established to provide community-based services for Aboriginal women in conjunction with existing medical,	✓	✓	✓	✓	Currently underway

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
	(majority rural/remote)	the postnatal period up to eight weeks	midwifery, paediatric and child and family health staff.					
Best Beginnings[50, 51]	Australia, WA	Parent/s with specific risk factors that make their child vulnerable to poor attachment, development delay and poor life outcomes	An intensive home visiting service for pregnant women and parents of children up to two years old.	✓	✓	×	✓	✓
WA Preterm Birth Prevention Initiative[52, 53]	Australia, WA	All pregnant women	Program designed to reduce rates of preterm birth. Three components: outreach education program for health care professionals; a dedicated preterm birth prevention clinic at a tertiary hospital; a print and social media campaign for women and their families.	×	×	✓	×	✓
Group Pregnancy Care study[54]	Australia, Victoria	Refugee women during and after pregnancy	Involves inter-agency collaboration between public maternity hospitals, refugee settlement agencies, and maternal and child health (MCH) services.	✓	✓	×	×	Evaluation planned

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
Mater Mothers' hospital refugee antenatal clinic[55]	Australia, Qld; large tertiary maternity hospital	Women from refugee backgrounds	Dedicated antenatal clinic providing continuity for culturally and linguistically diverse women, across all maternity care providers, in conjunction with appropriate community support.	✓	✓	✓	×	✓
Sustaining NSW Families[56]	Australia, NSW	For families experiencing social and economic disadvantage, who are vulnerable and who have associated impacts on their mental health and wellbeing	Home visiting (HV) program, in conjunction with other service providers, including GPs. Other allied health professionals (eg. speech therapists, dietitians, occupational therapists, physiotherapists, and drug and alcohol counsellors) provide advice to the HV nurse. Ideally starts during pregnancy and continuing until the child's second birthday.	×	✓	×	✓	✓
Youth Parents Program[57, 58]	Australia; NSW	Young parents (aged 13-25 years)	Through three stages (residential, outreach and aftercare), aims to improve the capacity of very young parents to live and parent independently.	×	×	×	✓	Evaluation to be conducted in 2018 (prior evaluation 2010)

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
Programs – other countries								
Area Based Childhood Programme[59]	Ireland	Families living in 13 specified geographic areas of disadvantage	A cross-departmental initiative in various settings (health and other). Examples include: community-based antenatal care and education; parent and family support; supporting oral language development for children aged up to seven years, infant mental health	✓	✓	×	✓	Evaluation underway
Preparing For Life[60]	Ireland, Dublin	All pregnant women living in defined disadvantaged communities in Dublin	RCT - evidence-based intervention to meet the needs of the local community. Pregnant women randomised to high support (five-year home visiting program from pregnancy to start school, Triple P Positive Parenting Programme, baby massage classes) or low support (usual care) treatment groups. Other low level supports available to both groups.	×	✓	×	✓	✓
Youngballymun[61, 62]	Ireland, Dublin	People living in defined disadvantaged communities in Dublin	A community change initiative comprising five child- and youth-centred service strategies to improve learning and well-being outcomes for all children and young people in Ballymun.	×	✓	×	✓	✓

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
New Baby Programme (NBP)[63]	Northern Ireland, South Eastern part	Pregnant women with socially complex circumstances presenting to antenatal care	Pilot RCT involving 50 women, 25 to receive NBP (based on Nurse-Family Partnership). Other 25 to receive standard Universal Core Programme.	×	✓	×	✓	Planned
Healthy Pregnancy 4 All[64-66]	Netherlands	Focusing on deprived areas with a higher than average perinatal mortality and morbidity rate	Customized preconception care, and antenatal risk assessment, including medical and non-medical risk factors to be followed by patient-tailored multidisciplinary care pathways.	✓	✓	✓	×	Implementation only, other evaluation planned
Ready for a Baby[67]	Netherlands, Rotterdam, north district	Women and partners planning pregnancy, pregnant women, women giving birth, women with a new baby, families with children	Program consists of projects that are based on standard care in the obstetrical chain of care, supplemented by a number of non-medical measures (preconception care, antenatal care, birth, maternity care, youth and family centres).	✓	✓	✓	✓	Planned
MAMAACT study[68-70]	Denmark (large maternity hospital)	Pregnant migrant women	The MAMAACT study was a perinatal health component of a project to develop initiatives for migrants across various institutional settings taking a life-course approach. Educational material and a smartphone app, translated into informal language in six	×	✓	✓	×	✓

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
			languages, education campaign for midwives to create awareness about the increased risk of poor reproductive outcomes among some migrants, and to strengthen skills in intercultural communication.					
Keeping Childbirth Natural and Dynamic[71]	Scotland	Healthy pregnant women	Midwife-led care program.	×	✓	✓	×	✓
Indigenous prenatal and infant-toddler health promotion programs in Canada[72]	Canada, review of studies	Indigenous parenting and infant-toddler health promotion programs in Canada		✓	×	×	✓	✓
Healthy Mother Healthy Baby[73]	Canada, Saskatchewan	Pregnant teens and women living in the community with risk factors such as: food insecurity, low income, isolation, substance use, inadequate housing, mental health issues, abusive relationships, pregnant and parenting students	A community-based program within the Saskatchewan Health Authority, aiming to promote optimal pregnancy outcomes and healthy lifestyle choices. The program works collaboratively with other programs within the Saskatchewan Health Authority.	×	✓	×	U	×

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
1st Five Healthy Mental Development Initiative[74]	USA, Iowa	All children, program available from birth	Community care - Children identified at risk for developmental concerns are referred to a 1st Five coordinator to manage needed services.	×	×	×	✓	×
Integrated Maternity and Child Health Services Pilot Evaluation New Zealand (NZ) program[75]	NZ, three district health boards	Pregnant women , children, their families and their health care providers	Demonstration pilot programs of integrated services, to identify what works, and the benefits of integrating maternal and child health services.	✓	✓	✓	✓	✓
Systematic Reviews								
Aboriginal and Torres Strait Islander (ATSI) maternal and child health services[76]	Systematic review, Australia, ATSI	Antenatal and postnatal programs for Aboriginal and Torres Strait Islander population	23 ATSI maternal and child health programs and services from, 1993-2012.	✓	✓	✓	✓	✓
Preconception Health Interventions delivered in Public	Systematic review	Women or men of reproductive age (15–45 years). Included 12	Preconception health interventions delivered in public health and community settings.	✓	×	×	×	✓

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
Health and Community Settings[77]		studies from 3 countries (USA, Australia, Italy)						
Group Prenatal Care[78]	Systematic review	Pregnant women – various characteristics (eg. some low socioeconomic status, African American, nulliparous; others general population, others matched by age, race, parity). Included 14 studies (12 from USA, mostly urban settings)	Group of 5-12 patients meeting with obstetric provider and facilitator for two-hour session every 2-4 weeks throughout pregnancy.	×	✓	✓	×	✓
Maternity Care Coordination (MCC)[79]	Systematic review	Pregnant women, studies in USA	Most common MCC programs included referrals to community resources, or frequent contact between the patient and coordinator to discuss pregnancy-related concerns, or prenatal and healthy pregnancy education.	×	✓	×	×	✓
Giving women their own case notes to carry during pregnancy[80]	Cochrane Systematic Review	Women in pregnancy or in the first four weeks post birth	Intervention groups were given complete antenatal records to carry; control groups were given a card with abbreviated	×	✓	✓	×	✓

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
			information and no clinical follow-up or clinical progress information.					
Alternative versus conventional institutional settings for birth[81]	Cochrane Systematic Review	Pregnant women at low risk of obstetric complications	Intervention included care during labour and birth in an alternative institutional birth setting. Antenatal and postnatal care may also have occurred in the alternative setting. Care may have been provided by the same group of caregivers, or by separate groups of caregivers in the alternative versus conventional settings. Control: care in conventional institutional birth setting.	×	×	✓	×	✓
Telephone support for women during pregnancy and first six weeks postpartum[82]	Cochrane Systematic Review	Women in pregnancy or in the first six weeks post birth, or both, most studies from high resource settings	Telephone support introduced in pregnancy or in the first six weeks post birth, or both. It may, or may not, have extended from the antenatal to postnatal period. Many trials recruited women from high-risk groups (eg. high risk of depression, or smokers) with intervention designed to address the risk factor.	×	✓	✓	✓	✓
Midwifery-led continuity of care[83]	Cochrane Systematic Review	Pregnant women – mostly healthy/low risk (some excluded women	Public health settings, various models of are (eg. case-load, team, continuity of midwife).	×	✓	✓	✓	✓

Table 4: Summary of included programs and systematic reviews

Program Name	Country/ region	Target population	Description of Program	NSW Health objectives for care of women and babies				Any evaluation
				Preconception	Pregnancy	Birth	Postpartum	
		with significant maternal disease and substance abuse). Studies from Australia, Canada, Ireland, UK						
Alternative versus standard packages of antenatal care for low risk pregnancy[84]	Cochrane Systematic Review	Pregnant women attending antenatal clinics and considered to be at low risk of developing complications during pregnancy and labour	Assess a provision of a schedule of reduced number of visits, with or without goal-oriented antenatal care, compared with a standard schedule of visits.	×	✓	✓	✓	✓
Schedules for home visits in the early postpartum period[85]	Cochrane Systematic Review	Enrolled participants in the early postpartum period (up to 42 days after birth); studies recruiting women from specific high-risk groups (e.g. with alcohol or drug problems) were excluded	Home visiting in the postpartum period (excluding studies with antenatal home visiting in which the visits continued); may include outreach visits to non-healthcare facilities.	×	×	×	✓	✓

Note: U denotes unclear.

Key findings from programs

In total, 16 programs or systematic reviews assessed short-term outcomes, four assessed intermediate-term outcomes and three evaluated long-term outcomes. Of the programs, only one was a randomised controlled trial, and one used a control group. One compared changes over time and the remainder compared to population data. Outcomes evaluated are summarised in Table 5.

Short-term outcomes

Most programs did not appear to be effective in reducing low birth weight, preterm birth, admissions to neonatal intensive care, nor in increasing the proportion of mothers who initiated breastfeeding. The small number of programs that were beneficial targeted specific population groups (e.g pregnant Indigenous women or refugees) and were effective in reducing smoking rates, increasing the frequency and earlier attendance for antenatal care, and in reducing perinatal mortality.

Intermediate-term outcomes

Four programs assessed outcomes (such as breastfeeding at six months, parenting skills and child development) between six months and one year, and results were mixed (Table 5).

Long-term outcomes

Three programs reported outcomes after one year and each targeted disadvantaged populations. The *Sustaining NSW Families* program compared participants' outcomes to the general population. It found that most children had normal developmental outcomes at 24 months, and stimulation and support of children in the home had improved during the program (from four to 12 to 24 months). At around 48 months of age, children in the high treatment arm of the *Preparing For Life Programme* (a randomised controlled trial in Ireland), had better cognitive and social and emotional development and better physical wellbeing, but little difference in language skills, compared to the control group. The Irish *Youngballymun* program also showed a significant improvement in learning outcomes among children aged five and nine years.

Satisfaction

Satisfaction with care was evaluated by eight of the programs and positive experiences were mostly reported among programs or services delivered during antenatal care. This included women receiving the *Aboriginal Family Birthing Plan* services, *Baby Basket* program, *Mater Mothers' Hospitals Refugee Antenatal Clinic*, midwife-led continuity of care, telephone support during pregnancy and the postnatal period, home visiting for disadvantaged families and birth in an alternative setting of a hospital birth centre. The main drivers for satisfaction with care included: involvement in the birth process; freedom to express feelings; support from midwives; and involvement in decision-making. Where evaluated, women expressed disappointment and some anxiety with programs that lacked continuity during the intrapartum and postnatal period. Healthcare workers' satisfaction was assessed by two programs and found staff were highly satisfied with the respective program and considered it to be essential.

Economic evaluation

Only three programs evaluated costs, and there was a lack of consistency in measuring maternity care costs and in the economic evaluation methods applied. Nevertheless, these all showed a trend towards cost savings. One program, the *Sustaining NSW Families*, a home visiting service for disadvantaged or vulnerable families in seven sites, compared program costs with health benefits (associated with avoided injuries, reduced child mortality, avoided out of home care costs, and long-term increased earning capacity, avoided crime and special education costs). Since inception, it found a net benefit to the economy of $3.1 million, equivalent to a benefit-cost ratio of ~1.2. Programs promoting coordinated and integrated maternity care via referrals between multiple providers and patients, individual case management, shared decision-making and prenatal and healthy pregnancy education programs showed a consistent cost saving effect of at least $2 for every $1 spent, either in return on investment or compared with comparison group. While different economic evaluations were performed for midwifery-led continuity of care, all suggested a cost-saving effect in intrapartum care.

Sub-group analyses

Sub-group analysis was performed by only three programs or reviews. Analysis of women in maternity coordinated care programs by race showed that African American participants experienced a reduction in low birthweight infants compared with white American women. However, there was no difference in preterm birth among women receiving group versus standard antenatal care. There was also no difference in short-

term outcomes (caesarean birth, instrumental vaginal delivery, spontaneous vaginal birth, intact perineum, preterm birth <37 weeks, fetal loss) among low and mixed-risk women receiving midwifery-led compared with standard care. A reduction in preterm birth was only observed among low-risk women.

Table 5: Outcomes of programs

	Program name		
	Showing effect / benefit	**No / negative effect**	**Summary**
Short-term outcomes (pregnancy until six weeks of age)			
Reduction in low birthweight	- Integrated Maternity and Child Health Services Pilot Evaluation NZ (small improvements)	- ATSI MCH community controlled & community-based programs (SR) - Aboriginal Family Birthing Plan - Aboriginal Maternity Group Practice Program; - NSW Aboriginal Maternal and Infant Health Strategy; - Preparing For Life Programme; - Coordinated maternity care (SR) - Group prenatal care (SR: 0/3) - Telephone support for women during pregnancy and first six weeks post-partum (SR)	Only one from eight programs, including three systematic reviews or summary of programs, showed a reduction in low birthweight compared with standard care.
Reduction in preterm birth	- Midwifery-led continuity of care (SR) - WA Preterm Birth Prevention Initiative	- ATSI MCH community controlled & community-based programs (SR) programs) - Aboriginal Family Birthing Plan - Aboriginal Maternity Group Practice Program - Mater Mothers' Hospital Refugee Antenatal Clinic - Coordinated maternity care (SR) - Group prenatal care (SR) - Telephone support for women during pregnancy and first six weeks post-partum (SR)	Only two from eight programs showed a reduction in preterm birth compared with standard care
Initiation of breast feeding		- Mater Mothers' Hospitals Refugee Antenatal Clinic - Integrated Maternity and Child Health Services Pilot Evaluation NZ - Preparing For Life Programme - Group prenatal care (SR)	Among four programs evaluating breastfeeding initiation, none showed a significant improvement.

	Program name		
	Showing effect / benefit	**No / negative effect**	**Summary**
		- Giving women their own case notes to carry during pregnancy (SR)	
Lower rates of maternal smoking	- Mater Mothers' Hospitals Refugee Antenatal Clinic - Preconception health interventions (SR)	- Baby basket program - Integrated Maternity and Child Health Services Pilot Evaluation NZ - Preparing For Life Programme - Telephone support for women during pregnancy and first six weeks post-partum (SR)	Among six programs, one targeted at preconception care and another in refugee women showed a reduction in maternal smoking. Others showed a decreasing trend or improved reporting of smoking.
Increased vaginal delivery	- Mater Mothers' Hospitals Refugee Antenatal Clinic - Midwifery-led continuity of care (SR) - ATSI MCH Community controlled & community-based programs (SR)* - Alternative versus conventional settings for birth (SR)	- Coordinated maternity care (SR)	Two out of three programs showed an increase in vaginal birth complimented by a non-significant reduction in caesarean section.
Reduced admission to Neonatal Intensive Care	- Telephone support for women during pregnancy and first 6 weeks post-partum (SR)	- Group prenatal care (SR) - Coordinated maternity care (SR: 0/7)	
Reduced alcohol consumption in pregnancy	- Baby basket program - Preconception health interventions (SR)	- Preparing For Life Programme	
Increase in frequency and earlier antenatal attendance	- Baby basket program - ATSI MCH Community controlled & community-based programs (SR)		
Reduced perinatal mortality	- ATSI MCH Community controlled & community-based programs (SR) - Midwifery-led continuity of care (SR)	- Giving women their own case notes to carry during pregnancy (SR) - Alternative versus conventional settings for birth (SR)	

	Program name		
	Showing effect / benefit	**No / negative effect**	**Summary**
Intermediate-term outcomes (six weeks to 12 months)			
Breastfeeding at 6 months	- ATSI MCH Community controlled & community-based programs (SR) - Alternative versus conventional settings for birth (SR)	- Sustaining NSW Families	
Parenting skills	- Preparing For Life Programme (more interactions with their child, higher quality interactions, higher regard for infants, more patient and react with less hostility, lower levels of parenting stress) - Sustaining NSW Families	- Preparing For Life Programme (healthy attachment, parental efficacy, general parental distress)	
Child development		- Preparing For Life Programme (temperament, communication and socio-emotional well-being, indicators of developmental delay)	
Longer-term outcomes (>12 months after birth)			
Child Development outcomes	- Preparing For Life Programme - Youngballymun - Sustaining NSW Families		Includes cognitive and language development, physical wellbeing, motor development, social and emotional development

Note: SR denotes systematic review.

Facilitators and inhibitors

Facilitators of effective maternity care were described by 10 programs and were focused around the themes of: development and provision of culturally appropriate maternity care services; integrated models with continuity of care; stakeholder engagement and participation in the design and implementation of a program; training and capacity building of maternity care providers; and the development of effective administrative and governance systems (Table 6).

Table 6: Facilitators of effective pregnancy programs

Theme	Facilitators	Programs
Maternity care		
	Provision of social support, coping strategies, stress reduction for low SES groups, integrated care	Group antenatal care, Coordinated maternity care, Youngballymun
	Continuity of carer throughout antenatal period	Mater Mothers' Hospitals Refugee Antenatal Clinic
	Established model of care (eg group antenatal care, midwifery led, hospital birth centre)	Group antenatal care
	Individual case management	Coordinated maternity care
	Patient education programs, availability of resources	Coordinated maternity care
	Culturally appropriate antenatal care (eg Aboriginal grandmothers, Indigenous staff, female staff)	Aboriginal Family Birthing Plan
	Pregnancy packs	Integrated Maternity and Child Health Services NZ, MAMAACT
	Hand-held pregnancy info cards	Integrated Maternity and Child Health Services NZ
	Strategies tailored to context	Keeping Childbirth Natural and Dynamic
Stakeholder participation		
	Participatory planning in service design and strategic development of program	Youngballymun
	Community involvement	Youngballymun
	Engagement with national and international experts	Youngballymun
	Cross-sectoral relationships/ interdependency	Youngballymun
	Motivated population that participate	Group antenatal care
	Communication and relationships between health providers (team approach, shared decision-making)	Integrated Maternity and Child Health Services NZ
	Consumer involvement, collaboration, feedback	Integrated Maternity and Child Health Services NZ, MAMAACT
Workforce development		
	Trained, multidisciplinary providers	Integrated Maternity and Child Health Services NZ

	Workforce development (training, mentoring, resources, capacity building)	Integrated Maternity and Child Health Services NZ
	QI methodologies and training	Integrated Maternity and Child Health Services NZ
	Midwifery directory	Integrated Maternity and Child Health Services NZ
Systems		
	Institutional buy-in and commitment	Group antenatal care
	Local Champion	Group antenatal care
	Governance guidance	Integrated Maternity and Child Health Services NZ
	Systems that support integration (incl. information technology, finance, human resources)	Integrated Maternity and Child Health Services NZ

Inhibitors of effective maternity care were reported by eight programs and were generally the converse of the facilitators described in the above section and in Table 6. The main themes identified as inhibitors were around: the logistics and accessibility of services; workforce training and partnership between agencies; system support and infrastructure; and cultural support understanding and collaboration (Table 7).

Table 7: Inhibitors of effective pregnancy care

Theme	Inhibitors	Programs
Logistics		
	Adequate number of women at same gestation	Group antenatal care
	Childcare	Group antenatal care
	Scheduling	Group antenatal care
	Vehicle/ transport for health workers	Baby basket program
	Transport to healthcare facility	Mater Mothers' Refugee Antenatal Clinic
Workforce training and development		
	Training of facilitators	Group antenatal care
	Offering in other languages	Group antenatal care
	Clarity/agreement of roles of midwives and Aboriginal workers working in program	Aboriginal Family Birthing Plan, Keeping Childbirth Natural and Dynamic, Youngballymun
	Teamwork/partnership between staff and agencies	Aboriginal Family Birthing Plan, Keeping Childbirth Natural and Dynamic, Youngballymun

	Opportunities for collaboration/communication	Integrated Maternity and Child Health Services NZ, Youngballymun
	Adjustment to new service planning	Youngballymun
System support and infrastructure		
	Cost of program	Group antenatal care, Integrated Maternity and Child Health Services Pilot Evaluation NZ
	Use of pre-existing services	Aboriginal Maternity Group Practice Program
	Lack of infrastructure	Integrated Maternity and Child Health Services Pilot Evaluation NZ
	Lack of shared electronic records/ information technology systems	Integrated Maternity and Child Health Services Pilot Evaluation NZ
	Interagency agreement/privacy	Integrated Maternity and Child Health Services Pilot Evaluation NZ
	Administrative barriers (human resources, finance)	Youngballymun
	Conflict between national policies, other sectors, community and capacity building activities	Youngballymun
Cultural issues		
	Women's reluctance to allow healthcare workers into their homes	Baby basket program
	Expectation that women attend clinic	Baby basket program
	Engagement, collaboration and partnership with community	Youngballymun

Discussion

Our review sought to identify: life-course approaches for maternal and infant health services that have been implemented and evaluated (Question 1); the maternal and infant outcomes that have improved as a result of these approaches (Question 2); and the critical success factors impacting these approaches (Question 3).

Question 1: Life-course approaches for maternal and infant health services that have been implemented and evaluated

We found a number of frameworks and programs have been implemented in various settings using a life-course approach. These covered various stages of perinatal care from preconception through to the postpartum period. The frameworks targeted whole populations, but have not been evaluated. In contrast, the programs targeted specific populations, mostly evaluated only short-term outcomes, and showed little difference between those who received programs and comparison groups. Despite the longitudinal evidence that early life affects later health, we found little evidence of effective life-course approaches for maternal and infant healthcare services, applied at a whole population level. However, there were differences in maternal and infants' outcomes found in programs that targeted specific populations.

Question 2: What health outcomes for mothers and babies have been shown to improve as a result of these life-course approaches

Only three programs evaluated long-term outcomes and all found a positive impact on: school age developmental outcomes, including improved cognitive and language development; physical wellbeing and motor development; social and emotional development; and standardised test scores. The main elements of these programs included: long-term home visiting programs starting from pregnancy up to five years; implementation of parenting programs/clinics; supporting mothers' (and their partners') adaptation to pregnancy and access to existing services in the community; and building infant mental health capacity across sectors. All three programs targeted specific groups and, as such, these would need to be implemented and evaluated more broadly to determine if effects can be extrapolated to the general population.

Very few programs provided detailed information about effective labour and childbirth practices to improve long-term outcomes. Quality of care during labour and childbirth and in the immediate postnatal period is important for ensuring optimal maternal and infant outcomes.[86] Core essential interventions for effective pregnancy and childbirth healthcare have been identified in a global review by the WHO and related experts[87] and are summarised in a review by Lavender.[86] Recent studies using NSW population perinatal data show that there is increasing evidence that minimising unnecessary interventions around the time of birth, such as reducing planned birth before 39 weeks, have an impact and improve both short- and long-term maternal and child health and child development outcomes.[88, 89]

Question 3: What were the critical success factors identified by study authors in these life-course approaches?

The recent introduction of frameworks in various settings using a life-course approach address long-term outcomes, but are yet to be evaluated. These covered all stages of care from preconception through to childhood. They espouse common general principles, such as woman or family-centred care, evidence-based approach to care, equity, cross-sectoral partnerships, and other aspects of quality care. These components were identified in our review as major contributors to satisfaction with care, and as facilitators of successful programs. Furthermore, our review shows that programs targeting specific population groups will improve clinical and longer term outcomes. In addition, these would also address general principles of equity, access and appropriateness of care.

These principles are also consistent with the WHO Impact Framework that support quality of care programs and take a life-course approach (Figure 3)[90] and with NSW Kids and Families *Healthy Safe and Well: a Strategic Plan for Children, Young People and Families 2014–24*.[12]

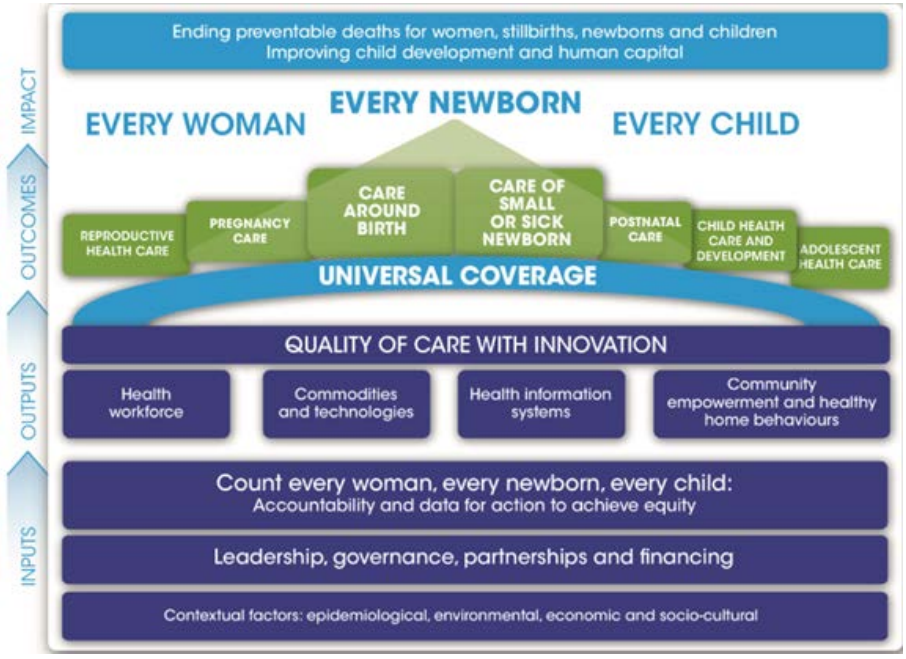

Figure 3: WHO Impact Framework[90]

While the NSW Strategic Plan provides general principles that should underpin an evidence-based approach for programs across the perinatal period, frameworks from other countries detailed elements of care that took a life-course approach. These elements, listed in Table 3, were identified following reviews of evidence, such as the rapid review supporting *Health Matters* (UK).[38] From an Australian perspective, the National Health and Medical Research Council *Clinical Practice Guidelines for Pregnancy Care*[91] and the *Perinatal Mental Health Guidelines*[92] support many of these elements across the perinatal stage of the life-course and are directly applicable to NSW.

Perinatal care policies ensure a healthy start to life, but need to be linked to ongoing evidence-based policy throughout childhood (e.g parenting skills, home visiting) to maximise longer-term outcomes. To implement a life-course approach, this review suggests that NSW should focus on facilitators of effective programs identified in Table 6 (development and provision of culturally appropriate, integrated models with continuity of care; stakeholder engagement; workforce training and capacity building; effective administrative and governance systems) and that are all features identified in the WHO Impact Framework for quality (Figure 3).[90]

Other key considerations

In addition, quality of care should be data driven[93] and requires rigorous measurement, strong program tracking and accountability.[90] Implementation of mandated standardised data collection systems across all maternal and child health settings using effective information technology systems are key to data collection.[93] Development of universal, valid and reliable health-care quality indicators and patient reported outcomes that can also be aggregated are also important to facilitate benchmarking and ongoing quality improvement in care.[94]

The provision of a continuum of care throughout the life course also requires seamless, functional coordination between levels of health services and the public and private sectors. Delivering health care to women and newborns requires coordination between technical programs and initiatives and collaboration among all concerned stakeholders: governments, professional associations, civil society, academic and research institutions, the business community, development partners and families. Cross-sectoral policies with both government and non-government agencies that take into account economic, cultural, structural and social and political systems are also needed.[90]

In summary, the main gaps in our review include: i) little evidence to support the life-course approach at a whole population level; ii) few maternal and child health frameworks or programs implementing and evaluating a life-course approach; iii) only three frameworks implemented, and none evaluated; and iv) at a program level, only three evaluated long-term outcomes.

Conclusion

Despite the longitudinal evidence that early life affects later health, we found little evidence of effective life-course approaches for maternal and infant healthcare services, applied at a whole population level. However, where differences in maternal and infants' outcomes were found, these were in programs that targeted specific populations. The life-course approach is relatively new to policy and programming. We identified only three settings in which it is currently being implemented as a framework (NSW's *Healthy, Safe and Well*; the Canadian *Family-Centred Maternity and Newborn Care: National Guidelines*; and the UK's *Health Matters*). However, none of these frameworks have been evaluated. At a program level, most targeted specific populations. While only three programs evaluated long-term outcomes, all found a positive impact. As such, these would need to be implemented and evaluated more broadly to determine if effects can be extrapolated to the general population.

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Appendix 1: Details of search strategies used in targeted literature review

Search strategies

To identify relevant studies, we searched both the grey literature, and conducted a systematic search of online databases for citations written in English, since 2013.

1. Grey literature

Online searches were conducted for relevant programs in Australia, New Zealand, Canada, United Kingdom, Europe/Sweden and the USA.

2. Databases

Using OVID, we searched the following data bases on 26 April 2018:
MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present; Premedline; PsycINFO 2002 to April Week 2 2018; Maternity & Infant Care Database (MIDIRS) 1971 to March 2018; Joanna Briggs Institute EBP Database - Current to April 18, 2018; EBM Reviews - Cochrane Database of Systematic Reviews 2005 to April 18, 2018; and EBM Reviews - Database of Abstracts of Reviews of Effects 1st Quarter 2016. Also, the search terms were modified and used to search CINAHL.

Database search terms

	Term
1	postnatal care.mp. or *Postnatal Care/
2	prenatal care.mp. or *Prenatal Care/
3	perinatal care.mp. or *Perinatal Care/
4	preconception care.mp. or *Preconception Care/
5	1 or 2 or 3 or 4
6	[exp PROGRAM EVALUATION/]
7	program*.ti.
8	evaluation.ti.
9	6 or 7 or 8
10	5 and 9
11	limit 10 to (english language and yr="2013 -Current") [Limit not valid; records were retained]

CINAHL search terms

	Term
1	(MM "Postnatal Care") OR "postnatal care"
2	(MM "Prenatal Care") OR "prenatal care"
3	(MM "Perinatal Care") OR "perinatal care"
4	"'preconception care' or 'pre-pregnancy care' or 'prepregnancy care'" OR (MM "Prepregnancy Care")
5	1 or 2 or 3 or 4
6	(MM "Program Evaluation
7	(MM "Evaluation")
8	6 or 7
9	5 and 8
10	Limit to English language, publication 2013-2018, geographical region: Aust and NZ, Canada, continental Europe, Europe, UK and Ireland, USA. Excluded medline records and pre-CINAHL

In addition, the Cochrane Database of Systematic Reviews was searched (on 2 March 2018) for completed reviews published since 2013. We reviewed all titles published by the:
1. Pregnancy and Childbirth Review Group
2. Neonatal or Pregnancy and Childbirth Groups under the topic Effective Practice and Health Systems
3. Effective Practice and Organisation of Care Group under the topics Child Health, Neonatal Care or Pregnancy and Childbirth.

Appendix 2: Data extraction forms

Key characteristics of the xxx approach

Characteristic	Details
Program name	Include abbreviations if any
Lead organisation(s)	Full name of participating organisations Funded by…
Country and type of health setting	Country and key details on whether metro/rural/remote Summary of health setting here (eg, midwifery care in the community vs in-hospital setting etc)
Program design and duration	Describe program/intervention – ie the model of care and its core components (but NOT how it was evaluated) As well as duration include actual month/year that it began and ended (or was evaluated)
Context for the approach	Background – why was the program developed?
Formative research	**Aspect one** Describe any formative research cited by program authors and how it was used to develop program. **Aspect two etc as needed** Describe any formative research cited by program authors and how it was used to develop program
Theory	Describe any theory cited by program authors as underpinning their approach. If none cited, state 'Not reported'
Target population(s)	1. List details (eg, pregnant women in first trimester) List details as needed
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes/No (choose one) 2. To improve access to high quality woman-centred care from early pregnancy: Yes/No (choose one) 3. To strengthen the provision of safe, evidence-based birth options: Yes/No (choose one) 4. To support transition from postnatal care to parenthood: Yes/No (choose one)
References	List author, year (NB important to list all refs – may be more than 1 for each program – if so, make sure each ref can be differentiated)

Key findings from the xxx approach

Characteristic	Details
Program name	As per above table
Details of evaluation	Describe method of evaluation/assessment: the who, what, how and when
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Numeric results for individual outcomes to be included in excel spreadsheet
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Numeric results for individual outcomes to be included in excel spreadsheet For example, if breastfeeding at 3 months was reported, it would go here
	Long term outcomes (measured 1 year or longer after birth) Numeric results for individual outcomes to be included in excel spreadsheet For example, if child development at 3 years of age was reported, it would go here
	Satisfaction Numeric results for individual outcomes to be included in excel spreadsheet
	Economic evaluation Numeric results for individual outcomes to be included in excel spreadsheet
	Relevant subgroups analysis Numeric results for individual outcomes to be included in excel spreadsheet
	Other outcomes Numeric results for individual outcomes to be included in excel spreadsheet
Factors which influenced outcomes	**Facilitators** Describe any success factors identified by the study authors
	Inhibitors Describe any barriers identified by the study authors
Any other relevant information	Eg, ongoing/planned changes to program; planned follow-up at a later date etc

Appendix 3: Frameworks: key characteristics

Key characteristics of the Family-Centred Maternity and Newborn Care: National Guidelines

Characteristic	Details
Program name	The Family-Centred Maternity and Newborn Care: National Guidelines (FCMNC)
Lead organisation(s)	Public Health Agency of Canada
Country and type of health setting	Canada These maternal and newborn health guidelines are for health care providers, other Canadians involved with maternal and newborn health and those who plan, manage and decide on maternal and newborn health programs and service.
Program design and duration	These guidelines provide principles for FCNBC. Chp 1 (principles) and Chp 2 (preconception care) published. Other chapters (care during pregnancy, care during labour and birth, early postpartum care, breastfeeding, loss and grief, organization of services) to follow. FCNBC has17 principles: 1. family-centred approach to maternal and newborn care is optimal 2. pregnancy and birth are normal, healthy processes 3. early parent–infant attachment is critical for newborn and child development and the growth of healthy families 4. applies to all care environments 5. is informed by research evidence 6. requires a holistic approach 7. Involves collaboration among care providers 8. Culturally-appropriate care is important in a multicultural society 9. Acknowledges Indigenous peoples have distinctive needs during pregnancy and birth 10. Provides care as close to home as possible is ideal 11. Individualized maternal and newborn care is recommended 12. Women and their families require knowledge about their care 13. Women and their families play an integral role in decision making 14. The attitudes and language of health care providers have an impact on a family's experience of maternal and newborn care 15. Family-centred maternal and newborn care respects reproductive rights 16. Family-centred maternal and newborn care functions within a system that requires ongoing evaluation 17. Family-centred maternal and newborn care best practices from global settings may offer valuable options for Canadian consideration National guidelines for maternal and newborn care in Canada were first published in 1968; this is 5th revision. Originally titled Recommended Standards for Maternity and Newborn Care – but early guidelines failed to recognize the crucial nature of family-centred care for mothers, babies and families. Chp 1 lists principles. Chp 2 lists guidelines for preconception care, information for health care provideers for maximising preconception health.
Context for the initiative	The Family-Centred Maternity and Newborn Care: National Guidelines are intended to assist health care organizations, providers, program planners, policy makers, administrators and families to propose, plan, implement and evaluate maternal and newborn health care policies and practices. They are not considered clinical practice guidelines (CPGs), although CPGs originating from such bodies as The Society of Obstetricians and Gynaecologists of Canada (SOGC), and the UK's National Institute for Health and Care Excellence (NICE), as well as from the provinces (such as British Columbia's perinatal guidelines), have been extensively consulted to determine the optimal recommended principles and practices.

Characteristic	Details
Formative research	Many factors were considered in developing these guidelines, including: the strengths and limitations of technological developments in maternal and newborn health care; the richness of the Canadian mosaic with its culturally diverse population; the recognition of Canada's responsibility to Indigenous Peoples; the multifaceted nature of health care that incorporates psychological, social, cultural and spiritual components, in addition to biological health; the changing nature of families as they face evolving economic and social demands; and our country's vast geographical and climatic challenges. These considerations have been filtered through the lens of the Canada Health Act and its primary objective which is 'to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers'.
Theory	Family-centred maternity and newborn care (FCMNC) is a complex, multidimensional, dynamic process of providing safe, skilled and individualized care. It responds to the physical, emotional, psychosocial and spiritual needs of the woman, the newborn and the family. FCMNC considers pregnancy and birth to be normal, healthy life events and recognizes the significance of family support, participation and informed choice.
Target population(s)	Women, infants and families
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Family-Centred Maternity And Newborn Care In Canada https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/healthy-living/maternity-newborn-care/maternity-newborn-care-guidelines-chapter-1-eng.pdf https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html
Not evaluated	

Key characteristics of the Alberta Perinatal Health Program

Characteristic	Details
Program name	Alberta Perinatal Health Program (APHP)
Lead organisation(s)	Alberta Health Services …
Country and type of health setting	Canada/Alberta (provincial) Overall Leadership and Coordination of the program and its services to stakeholders across Alberta is provided through the office of the Executive Director for Women's Health, Edmonton Zone and the Alberta Perinatal Health Program. Program Coordinators are identified to support the activities and services provided for each of Quality and Innovation, Education and Consultation, and Information Management and Research.
Program design and duration	APHP focuses on pregnancy and being a parent. APHP provides services to health care professionals and families to increase practitioner knowledge and skills, improve clinical practice; improve the quality of care to mothers and infants and influence perinatal health policy. Website includes Healthy Parents Healthy Children- a practical guide to pregnancy and being a parent covers information for pregnancy, labour and delivery, and infancy/childhood. APHP considers the range of services delivered in Alberta across the continuum of care, including prevention, early identification, intervention and harm reduction. Unknown
Context for the initiative	To promote maternal health, positive birth outcomes and healthy infancy by providing provincial leadership and enhanced support to health zones, health professionals, Alberta Health and other stakeholders. The APHP focuses on the perinatal health of infants and their mothers, healthy or at risk, in the context of their families and communities. The program is guided by a population health approach, and is planned and evaluated at the individual, aggregated and population levels. The program undertakes its mandate in partnership with stakeholders. Recognizing that the APHP does not provide direct patient services, program staff value and strive for positive relationships with their key partners health zones, health professionals and others.
Theory	The program is guided by ethical principles, which form the basis for decisions. The program is guided by the best available evidence and promising practices, informed by evaluation. Program staff will look for evidence and will incorporate it in program planning and decision-making. The program uses an outcomes-oriented approach to measure success.
Target population(s)	Pregnant women.
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes? (under Alberta Health Services, preconception info provided) 2. To improve access to high quality woman-centred care from early pregnancy: Yes? 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Alberta Perinatal Health Service http://aphp.dapasoft.com/Lists/HTMLPages/index.aspx
Not evaluated	
Notes	Information obtained from the website – Information for Families – Healthy Parents Healthy Children. Elements of preconception care and pregnancy care are listed, but for labour and childbirth, newborn care and care early childhood care, the website provides information for parents, rather than elements. The website section for professionals was not accessible.

Key characteristics of the Healthy Child Manitoba program

Characteristic	Details
Program name	Healthy Child Manitoba (HCM)
Lead organisation(s)	The Healthy Child Manitoba Act in 2007, the Healthy Child Committee of Cabinet. Healthy Child Manitoba bridges departments and governments, the community.
Country and type of health setting	Canada, Manitoba (province) Led by the Healthy Child Committee of Cabinet, Healthy Child Manitoba bridges departments and governments and, together with the community, works to improve the well-being of Manitoba's children and youth. HCM focuses on child-centred public policy through the integration of financial and community-based family supports. In addition to these cross-sectoral government structures, The HCM Act also continues the work of cross-sectoral community structures, including Parent-Child Coalitions and the Provincial Healthy Child Advisory Committee (PHCAC). HCM researches best practices and models and adapts these to Manitoba's unique situation. It strengthens provincial policies and programs for healthy child and adolescent development, from the prenatal period to adulthood. HCM then evaluates programs and services to find the most effective ways to achieve the best possible outcomes for Manitoba children, families, and communities.
Program design and duration	The HCM Strategy is a network of programs and supports for children, youth and families. Through a combination of financial and community-based family supports, HCM works to help families and communities raise children who are healthy, safe and secure, successful at learning, and socially engaged and responsible. Support extends through adolescence, with a focus on the most critical stage of early childhood development, from the prenatal period to the preschool years. 2000
Context for the initiative	To help all children and youth reach their potential
Formative research	Response to research indicating the first five years of life are critical to a child's future development.
Theory	Goals best achieved through: 1. Multiyear, early intervention for families: prenatal to 6 years, including home visiting and nutrition programs. 2. High quality child care and preschool experiences. 3. A holistic, accessible, integrated system, involving partnerships with parents, children and youth, and communities.
Target population(s)	Pregnant mothers, children and families
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Healthy Child Manitoba http://www.gov.mb.ca/healthychild/about/index.html http://www.gov.mb.ca/healthychild/programs/index.html
Not evaluated	

Key characteristics of the Colorado Early Childhood Framework

Characteristic	Details
Program name	Colorado Early Childhood Framework
Lead organisation(s)	Early Childhood Leadership Commission
Country and type of health setting	USA Colorado Early childhood services
Program design and duration	Framework for whole child and family centered, prenatal through age eight, strengths based, culturally relevant and responsive, outcomes focused Informed by evidence based and promising practices and cross sector collaboration. It is a web-based, interactive tool that allows organizations to share programs and best practices and align their work under the domains and outcomes of the Framework. Updated 2015
Context for the initiative	The Early Childhood Colorado Framework was originally created in 2008, and updated in 2015. It is based on and guided by these principles: The Framework is a shared vision for Colorado's young children and their families. It guides planning and mobilizes action to ensure all children are valued, healthy and thriving. It is intended for use by providers, policymakers, researchers and local and state agencies to share programs and best practices that align under the Domains and Outcomes of the Framework.
Formative research	
Theory	Not reported
Target population(s)	Children – prenatal to age 8 years
Change goals	1. *To help parents prepare for pregnancy and improve their health: No* 2. *To improve access to high quality woman-centred care from early pregnancy: Unclear* 3. *To strengthen the provision of safe, evidence-based birth options: Unclear* 4. *To support transition from postnatal care to parenthood: Assume so*
References	http://earlychildhoodframework.org/
Not evaluated	

Key characteristics of the Healthy, Safe and Well Strategic Plan

Characteristic	Details
Program name	Healthy, Safe and Well
Lead organisation(s)	NSW Kids and Families (NSW Health)
Country and type of health setting	Whole of NSW In-hospital and community: complete framework
Program design and duration	10 year strategic health plan for all children, young people and families providing a comprehensive planning, service and policy roadmap from preconception to 24 years of age. Five strategic directions including (1) Caring for women & babies: 1.1 Help parents prepare for pregnancy and improve their health 1.2 Improve access to high quality, woman centred care from early pregnancy 1.3 Strengthen provision of safe, evidence based birth options 1.4 Support transition from postnatal care to parenthood (2) Keeping children and young people healthy: 2.1 Boost community capacity to pursue good health 2.2 Improve screening, health checks and immunisation rates 2.3 Improve health literacy 2.4 Reduce risk taking and minimise harm. (3) Addressing risk and harm : 3.1 Increase awareness of violence, abuse and neglect on health over time 3.2 Improve identification and triage care for those at risk of harm 3.3 Build capacity to appropriately respond to victims of violence, abuse and neglect 3.4 Reduce the incidence and health impact of accidents, injuries and self-harm (4) Early intervention: 4.1 Identify children who need extra support 4.2 Intervene early to prevent poor health, growth and development for children at risk 4.3 Act early to help children with chronic health conditions (5) Right care, right place, right time: 5.1 Deliver best-practice care as close to home as possible 5.2 Provide safe, high-quality, and effective healthcare 5.3 Deliver integrated, connected healthcare 5.4 Provide inclusive, family centred, culturally respectful and age appropriate care Details of Implementation: Implementation of Healthy, Safe and Well will be led by NSW Kids and Families in a staged process to allow ongoing refinement over the next 10 years. NSW Kids and Families have established a NSW Kids and Families Council, made up of senior leaders from each Local Health District, the Specialty Health Networks in maternal, child and youth health, and from the Ministry of Health and Pillar organisations, to provide expert guidance to the rollout. The Council will oversee the development of a three-year implementation plan by early 2015, outlining the key deliverables for each strategy, metrics and the partners involved. It will also help guide decision making on priorities for each three year period, support stakeholder engagement and partnership initiatives, and promote local innovation. The Council will direct a first stage review of the Plan in 2018 to provide independent feedback on progress against each of the objectives as a guide to policy adjustments and to identify areas for potential improvement. Attracting, training and keeping highly skilled personnel is key to all of NSW Health, but is crucial in child and family care where the range of skills and geography covered necessitates a flexible, skilled and culturally competent workforce with ready access to training, best-practice knowledge and specialist advice 2014-2024
Context for the initiative	This strategic plan – Healthy, Safe and Well: A strategic health plan for children, young people and families 2014–24 – was developed as a response to recommendations by Peter Garling SC in his report on acute services in NSW
Formative research	NSW Health policy, planning and services are informed by evidence-based research, world's best practice and extensive consultation, an approach that will underpin the future of our health, and drive research and innovation.
Theory	Not reported
Target population(s)	People in NSW from preconception to 24 years of age

Characteristic	Details
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	NSW Kids and Families. Healthy, Safe and Well. A strategic plan for children, young people and families. 2014-2024. http://www.health.nsw.gov.au/kidsfamilies/Publications/healthy-safe-well.pdf
Not evaluated	

Key characteristics of the Ireland National Maternity Strategy – Creating a Better Future Together 2016-2026

Characteristic	Details
Program name	National Maternity Strategy – Creating a Better Future Together 2016-2026
Lead organisation(s)	Ireland Department of Health
Country and type of health setting	Ireland Ireland's first National Maternity Strategy for maternity and neonatal care, to ensure that it will be safe, standardised, of high-quality and offer a better experience and more choice to women and their families.
Program design and duration	National strategy 2016-2026
Context for the initiative	The model of care proposed in the Strategy is based on the principle that childbirth is a natural, physiological process. At the same time, it recognises that some women have higher care needs. Proposes one model of care with three care pathways; Supported Care, Assisted Care and Specialised Care. Across all pathways, care will be evidence-based, woman-centred and provided by a multidisciplinary team. Four strategic priorities have been identified: 1. A Health and Wellbeing approach is adopted to ensure that babies get the best start in life. Mothers and families are supported and empowered to improve their own health and wellbeing; 2. Women have access to safe, high quality, nationally consistent, woman-centred maternity care; 3. Pregnancy and birth is recognised as a normal physiological process, and insofar as it is safe to do so, a woman's choice is facilitated; 4. Maternity services are appropriately resourced, underpinned by strong and effective leadership, management and governance arrangements, and delivered by a skilled and competent workforce, in partnership with women.
Formative research	Growing emphasis on taking account of women's experiences, of the type of care they want and of the way in which they want to be treated. Based on strategic developments internationally, a wellness paradigm for pregnancy and childbirth acknowledges that pregnant women are predominantly well because pregnancy and birth are normal physiological life events. Clinical decisions about medical intervention should be informed by this understanding.' A commissioned review highlighted key areas for consideration in the development of a maternity strategy with a particular focus on models of care as they impacted on: a. patient safety; b. patient-centredness; c. quality assurance; d. accessibility; e. cost; f. training and staffing implications; g. governance.
Theory	Review followed the main steps outlined by Arksey and O'Malley (2003), including: 1. identifying the key questions, which were broad in nature; 2. identifying topic-relevant studies, Government reports and other grey literature through a search that focused on a set of indicative countries (New Zealand, Australia, Canada, United Kingdom, the Netherlands and Ireland); 3. selecting studies using a set of inclusion criteria; 4. reviewing the sorted and sifted data through the identification of key themes; 5. analysing the results through thematic analysis and reporting findings descriptively and numerically.
Target population(s)	At the centre of this Strategy is the mother.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Ireland Department of Health. Creating a better future together: national maternity strategy 2016 – 2026. http://health.gov.ie/wp-content/uploads/2016/01/Final-version-27.01.16.pdf
Not evaluated	

Key characteristics of the Health Matters: U.K. Framework

Characteristic	Details
Program name	Health Matters: U.K. Framework
Lead organisation(s)	National Institute for Health Research, National health Service
Country and type of health setting	U.K.; universal framework national!
Program design ar duration	Describe program/intervention – ie the model of care and its core components (but NOT how it was evalua Framework to promote child health for every child. It includes ; • **Healthy Child Programme** which is a schedule of services from 28 weeks pregnant to age 5 years including: -screening -immunisation during pregnancy and childhood immunisations -health and development reviews -advice and support to help children's physical and emotional development • **Healthy Start**: scheme to improve the health of low-income pregnant women and families through the provision of vouchers and vitamin tablet drops • Fit for pregnancy: pre-conception. .Pre-conceptual care includes giving advice on: -full immunisation status -vitamin D and folic acid -reducing alcohol consumption -giving up smoking -contraception, family spacing and sexual health • Teenage pregnancy: developed a range of resources to support teenage conception service improvement. The Family Nurse Partnership provides targeted support for vulnerable young families • Fit during pregnancy: -nutrition & exercise -eat healthily -take vitamin D, folic acid -advise on physical activity • Sexual health: all women offered screening for syphilis & HIV as part of routine antenatal care • Vaccination: pregnant women offered pertussis between 16 & 32 weeks, and encouraged to take flu vaccine • Risk factors in pregnancy -smoking: encourage women to stop smoking. NICE guidelines outlines interventions to support stopping smoking in pregnancy -drinking alcohol during pregnancy: Updated guideline from UK Chief Medical Officer state safest approach is not to drink alcohol while pregnant -social isolation & stress: NICE has produced guidance for health & social care commissioners who may come into contact with people who experience or perpetrate domestic violence and abuse. • Protecting health in infancy: - Newborn screening - Immunisation: NICE makes recommendations to improve access to immunisations • Supporting the transition to parenthood: - Secure attachment - Breastfeeding**: UNICEF Baby Friendly Initiative** & **Start4Life campaign**. - Maternal mental Health: interactive tool to help local providers plan their approach to perinatal and infant mental health in their area. • The first 2 years in life - Nutrition & physical activity - Oral health - Safety: guidance on reducing unintentional injuries in and around the home among children under 5 - Ready to learn: all disadvantaged 2 years olds are entitled to 15 hours early years provision. • A review of the child's development at 2- 2.5 years: universal 2 year review by health visitor (at home, at local clinic or child centre) to identify children who are not developing as expected and who may require extra support As well as duration include actual month/year that it began and ended (or was evaluated)

Characteristic	Details
Context for the initiative	Background – why was the program developed? What happens in pregnancy and early childhood impacts on physical and emotional health all the way through to adulthood. Supporting good maternal health is important for safe delivery and good birth weight to give babies the best start. The prevention of adverse health factors in pregnancy is vital. Premature and small babies are more likely to have poorer outcomes. The earliest experiences, starting in the womb, shape a baby's brain development. During the first 2 years of life the brain displays a remarkable capacity to absorb information and adapt to its surroundings. Positive early experience is therefore vital to ensure children are ready to learn, ready for school and have good life chances. The 'All Party Parliamentary Group for Conception to Age Two' says that tackling problems associated with early life should be no less a priority for politicians and health and social care professionals than national defence.
Formative research	
Theory	Not reported
Target population(s)	Antenatal to 5 years of age
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options:?Yes 4. To support transition from postnatal care to parenthood: Yes
References	Health matters: giving every child the best start in life. Public Health England. 12 May 2016 https://www.gov.uk/government/publications/health-matters-giving-every-child-the-best-start-in-life/health-matters-giving-every-child-the-best-start-in-life#summary National Institute for Health Research ,2017. Better Beginnings: Improving Health for Pregnancy. February 2017 https://www.dc.nihr.ac.uk/themed-reviews/Better-beginnings-web-interactive.pdf Included programmes: Healthy Child Programme. Pregnancy and the first five years of life. Update of Standard One (incorporating Standard Two) of the National Service Framework for Children, Young People and Maternity Services (2004) Department of Health. October 2009 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/167998/Health_Child_Programme.pdf Healthy Start. NHS. https://www.healthystart.nhs.uk/ Family Nurse Partnership http://fnp.nhs.uk/ Start4Life https://www.nhs.uk/start4life
Not evaluated	

Appendix 4: Program key characteristics and findings

Key characteristics of the Aboriginal Family Birthing Program

Characteristic	Details
Program name	Aboriginal Family Birthing Program (AFBP)
Lead organisation(s)	Funded by Commonwealth Government
Country and type of health setting	South Australia; metro/rural/remote Community
Program design and duration	The Aboriginal Family Birthing Program (AFBP) was established to reduce disparities in Aboriginal maternal and child health outcomes in SA. It is a network of services to provide culturally competent antenatal, intrapartum and early postnatal care for Aboriginal families living in major city, inner and outer regional, and remote/very remote areas of SA. The program involved the employment of Aboriginal Maternal and Infant Care (AMIC) workers. Key roles of the AMIC workers include: community engagement and promoting the program to women in the local community; health promotion and health education; advocacy on behalf of women and families; supporting women to access support for social health issues; clinical care under supervision of midwives and/or medical practitioners; supporting women in labour and birth; and supporting women with infant care and feeding in the first 6-8 weeks after birth. 2009; evaluated 2014
Context for the initiative	Aboriginal and Torres Strait Islander women are three times more likely to die during childbirth compared with other Australian women, and two to three times more likely to have a stillbirth or neonatal death, preterm birth, and/or low birthweight infant. Despite long-standing recognition of these health differentials, there has been limited progress toward improving maternal and perinatal outcomes for Aboriginal and Torres Strait Islander families.
Formative research	Only a small number of studies have evaluated specific programs and initiatives designed to improve Aboriginal maternal and child health outcomes in most cases reporting on small-scale programs operating out of a single hospital, community-based health service, or regional health service
Theory	Not reported
Target population(s)	Aboriginal women attending antenatal care
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Brown, S. J., et al. (2015). "Improving Aboriginal women's experiences of antenatal care: findings from the Aboriginal families study in South Australia." Birth **42**(1): 27-37. Middleton, P., et al. (2017). "'Partnerships are crucial': an evaluation of the Aboriginal Family Birthing Program in South Australia." Australian & New Zealand Journal of Public Health **41**(1): 21-26.

Key findings from the Aboriginal Family Birthing Program

Characteristic	Details
Program name	Aboriginal Family Birthing Program (AFBP)
Details of implementation	The AFBP, implemented across six regional/remote sites and three major city sites from 2009 onwards. With a commitment to continuity of care and primary care principles, this program created a new AMIC worker position in a leadership role; provided education and training for AMIC workers in antenatal, birthing and postnatal care; and created intercultural and skill exchange between AMIC workers and midwives with general practitioner assistance. Although each site has implemented the program in a different way, most of the regional programs employ two part-time Aboriginal and Maternal Infant Care (AMIC) workers/trainees and one or two part-time midwives, each aiming to provide care to around 20-30 Aboriginal women per year.
Details of evaluation	In 2013, the Australian Research Centre for Health of Women and Babies at the University of Adelaide and the Murdoch Childrens Research Institute were commissioned by the Women's and Children's Health Network (WCHN) to evaluate the AFBP and to make recommendations for future operation and development of the program. The evaluation framework was developed during 2012, based on a review of program documentation, consultation and more than 20 in-depth interviews. The evaluation involved a number of components: the use of routinely collected data provided by the SA Pregnancy Outcome Unit (POU) and key informant interviews with clients of the program (Aboriginal women) and health professionals and managers to describe the social and obstetric characteristics and birth outcomes of Aboriginal women who used AFBP services.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Mothers that were part of AFBD were younger, of lower SES, be unemployed, live in a major city and have anaemia or a UTI while pregnant compared to Aboriginal mothers giving birth at same time period not in AFPB Preterm birth (1,2,3): proportion of preterm birth was not significantly different to Aboriginals that were not part of AFPB Low birthweight (1,2,3): proportion of infants with low birthweight was not significantly different to Aboriginals that were not part of AFPB SGA (1,2,3): proportion of SGA infants was not significantly different to Aboriginals that were not part of AFPB
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Women who attended the AFBP services were much more likely to report positive experiences of antenatal care than women attending mainstream public maternity services.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** The findings echo these results, demonstrating that Aboriginal women highly value care provided by other Aboriginal women.
	Inhibitors There was a lack of clarity and/ or agreement regarding the roles of the AMIC workers and midwives working in the program. The model requires a high degree of effective teamwork and partnership between staff, and between agencies. Even in services where there was a high degree of good will towards the program, efforts to sustain interagency meetings and sort out logistical issues often flagged over time.
Any other relevant information	Not reported

Key characteristics of the Baby Basket Program

Characteristic	Details
Program name	Baby Basket Program
Lead organisation(s)	Funded by Apunipima Cape York Health Council (ACYHC)
Country and type of health setting	Cape York (remote northern region of Queensland), Australia Family-centred approach; included home visiting & involvement of extended family members
Program design and duration	The Baby Basket program aimed to engage Murri women from Cape York with the health system through encouraging early and frequent attendance at antenatal clinics and regular post-natal check-ups by providing a baby basket at 3 time points: in the first trimester, immediately prior to birth and in the first weeks post-birth. The Baby Basket program was introduced in 2009, evaluated 2014 using data 2008-2013
Context for the initiative	Despite global improvements in maternal and child health outcomes, Indigenous people worldwide still experience much poorer maternal and child health outcomes than the non-Indigenous population. In Australian the Indigenous child mortality is more than double non-Indigenous population. In 2008 the Australian government pledged to halve the gap in mortality rates for children under 5 by 2018.
Formative research	Not reported
Theory	Not reported
Target population(s)	Pregnant women in one of 11 Cape York communities
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	McCalman et al 2015. Empowering families by engaging and relating Murri way: a grounded theory study of the implementation of the Cape York Baby Basket program. BMC Pregnancy and Childbirth (2015)15:119 Edmunds et al 2016. Apunipima baby basket program: a retrospective cost study. BMC Pregnancy and Childbirth (2016)16:337 McCalman et al 2014. Evaluating the Baby Basket program in north Queensland: As delivered by Apunipima Cape York Health Council 2009 to 2013. May 2014

Key findings from the Baby Basket Program

Characteristic	Details
Program name	Baby Basket Program
Details of implementation	The Baby Basket program was developed and implemented by Apunipima Cape York Health Council (provides primary health care services to the 11 Indigenous communities) in partnership with the Royal Flying Doctor Service to deliver antenatal services. Three different baskets were delivered to each woman and contained items appropriate to her stage of pregnancy or early motherhood (in the first trimester, immediately prior to birth, and the first weeks post-birth). In conjunction with the baskets the program also provided education about nutrition, exercise, smoking, alcohol-related behaviours and care for babies provided during home visits. Implementation occurred through a process of engaging & relating between healthcare workers and women and their family members. Nurses and midwives play a clinical, educative and support role; total costs of delivering to 170 particiapnts was $148,642, approx $874 per basket participant
Details of evaluation	Performed by Hunter Medical Research Institute & James Cook University, for Lowitja Institute. Qualitative methods based on interviews and focus groups; quantitative evaluation based on (1) surveys of women who received baskets, (2) cost analysis of 170 participants & (3) analysis of indicators based on routinely collected data from One21 Seventy.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Gestational age at first antenatal visit: compared to control sites, a higher proportion of antenatal visits occurred in BB when baby was <13 weeks. Frequency of antenatal visits was more favourable than control sites. Prevalence of women receiving healthcare advice was inconsistent, but trend for this improving. Smoking and alcohol during pregnancy: a trend increase of women smoking in pregnancy (might be results of better clinical investigation and reporting) and trend to decreased in women consuming alcohol. Iron levels in pregnancy: data suggests a favourable result as deficient iron level is lower compared to control sites
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Evidence of scabies (>3 months) is at a similar level to control sites. Failure to thrive: showed improvement over time of program but change from CDC to WHO growth charts impacts this result; similar to control sites
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Women appreciated the items in the baskets and found them useful in preparing for their own and baby's needs. Healthcare workers were highly satisfied with the Baby Basket program and considered it to be essential.
	Economic evaluation Costs estimated not evaluated
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** The presence of Indigenous and female staff has been critical components of the approach
	Inhibitors Barrier's to home visiting included: - Women's reluctance to allow healthcare workers into their homes - A perception that it was women's responsibilities to attend the clinic - Need for resourcing with a vehicle to enable healthcare workers to get to women's homes.
Any other relevant information	Not reported

Key characteristics of the Aboriginal Maternity Group Practice Program

Characteristic	Details
Program name	Aboriginal Maternity Group Practice Program (AMGPP)
Lead organisation(s)	I think Federal Government – hard to work out
Country and type of health setting	Western Australia: metro Community in partnership with antenatal hospital services
Program design and duration	The program employed Aboriginal Health Officers (AHOs), Aboriginal grandmothers and midwives in each district to work with the existing services. The program model was culturally secure, with a focus on early access to antenatal care, employment of Aboriginal staff, and holistic care, including awareness of the social determinants of health. Clients with low-risk pregnancies gave birth at the local district hospital, and higher risk pregnancies were referred to KEMH, as per the standard SMHS policy. A home-visiting service was available. Outreach clinics were provided in various locations, including women's refuges, Aboriginal community centres and mobile GP services. Started 2011
Context for the initiative	Element Two of the National Partnership Agreement on Indigenous Early Childhood Development (IECD2), part of the Closing the Gap suite of health care reforms initiated in late 2008, aimed to improve the access of Aboriginal women (particularly teenagers) to antenatal care and other women's health care services. The Aboriginal Maternity Group Practice Program (AMGPP) was funded under this element, and commenced operating at various locations in the area of Perth served by the South Metropolitan Health Service (SMHS) in early to mid 2011. The need for the program was identified by local Aboriginal community members, who voiced concerns that many women were presenting late in pregnancy for antenatal care or not receiving antenatal care at all. Before the AMGPP was introduced, local Aboriginal community members were concerned that some women were presenting late in pregnancy or giving birth at KEMH irrespective of their risk status. The AMGPP aimed to improve timely access to existing antenatal and maternity services in south metropolitan Perth, and to thereby increase the number of women giving birth safely in a local hospital.
Formative research	The AMGPP was designed by local Aboriginal community members through planning and implementation steering groups initiated by the program contract manager, the South Metropolitan Population Health Unit (SMPHU), which has a well-established Aboriginal Health Team.
Theory	Not reported
Target population(s)	343 women (with 350 pregnancies) who participated in the AMGPP and gave birth between 1 July 2011 and 31 December 2012
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Bertilone, C. and S. McEvoy (2015). Success in Closing the Gap: favourable neonatal outcomes in a metropolitan Aboriginal Maternity Group Practice Program. Medical Journal of Australia **203**(6): 262.e261-267. Bertilone, C. M., et al. (2017). Elements of cultural competence in an Australian Aboriginal maternity program. Women & Birth: Journal of the Australian College of Midwives **30**(2): 121-128.

Key findings from the Aboriginal Maternity Group Practice Program

Characteristic	Details
Program name	Aboriginal Maternity Group Practice Program (AMGPP)
Details of implementation	The program employed Aboriginal Health Officers (AHOs), Aboriginal grandmothers and midwives in each district to work with the existing services. The Grandmothers working in the AMGPP were respected local Elders whose role was to provide cultural support, pregnancy and parenting advice, advocacy, and transport. The Aboriginal Health Officer worked with the midwife to perform home visits, organise appointments, provide health promotion advice (including workshops), and refer to or liaise with other services. Although in some districts staff were occasionally able to attend births at the request of a client, due to resource constraints this was not a component of the common core model.
Details of evaluation	Evaluation was performed by South Metropolitan Population Health Unit comparing neonatal health outcomes for Aboriginal women who gave birth while participating in the AMGPP between 1 July 2011 and 31 December 2012 to (i) a historical control group consisted of Aboriginal women who resided in the SMHS and had given birth between 1 January 2009 and 30 June 2011; (ii) the contemporary control group consisted of Aboriginal women who resided in the NMHS and had given birth between 1 June 2011 and 31 December 2012. Data was identified from the WA Midwives Notification Scheme. Also a qualitative evaluation was performed to describe the elements of the SMHS AMGPP model that contributed to cultural competence using the Organisational Cultural Competence Assessment Tool (CCAT). Qualitative data sources included staff interviews, surveys distributed to program partners, and client surveys.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Preterm birth: infants born to mothers in AMGPP were significantly less likely to be born preterm than both the historical and contemporary control cohorts Low birthweight: there was not a significant difference in low birth weight infants born to mothers in AMGPP or historical and contemporary control cohorts Resuscitation at birth: infants born to mothers in AMGPP were significantly less likely require resus at birth than both the historical and contemporary control cohorts Infant LOS >5 days: infants born to mothers in AMGPP were significantly less likely require a hospital stay of >5 days than both the historical and contemporary control cohorts
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Providing culturally appropriate care: The partnership model of the AMGPP influenced maternity staff and other health service providers in at least three of the five districts to provide more culturally appropriate care.
Factors which influenced outcomes	**Facilitators** The employment of Aboriginal Grandmothers was a critical component of the AMGPP. The use of Grandmothers in antenatal services has been previously suggested as a means of improving the cultural appropriateness of antenatal care. Several strengths of the Grandmother role were identified including improvements to maternity care access through the early identification of pregnant Aboriginal women in the community, its position of respect and influence for young Aboriginal women, and its health promotion role using yarning as a means to impart knowledge. These factors were critical in gaining women's trust and engaging them with the program.
	Inhibitors Using pre-existing services can be a limiting factor when there are institutional barriers to providing a culturally competent service, as was the case in one of the five districts. Utilising the infrastructure of pre-existing services can also pose problems when they are not suitable for Aboriginal people, for example, clinic rooms that are not able to accommodate large families.

Characteristic	Details
Any other relevant information	Not reported

Key characteristics of the NSW Aboriginal, Maternal and Infant Health Strategy (AMIHS)

Characteristic	Details
Program name	NSW Aboriginal, Maternal and Infant Health Strategy (AMIHS)
Lead organisation(s)	NSW Health
Country and type of health setting	NSW in 20 Local Government Areas; majority rural/remote Delivered through a continuity of care model by midwives and Aboriginal health workers in the community
Program design and duration	A community midwife and Aboriginal health worker were established to provide community-based services for Aboriginal women in conjunction with existing medical, midwifery, paediatric and child and family health staff. Implementation commenced 2001; evaluated end of December 2004
Context for the initiative	The program was implemented to improve the health of Aboriginal women during pregnancy and decrease perinatal morbidity and mortality for Aboriginal babies
Formative research	The Service is delivered through a continuity-of-care model, where midwives and Aboriginal Health Workers collaborate to provide a high-quality maternity service that is culturally safe, women-centred, based on primary healthcare principles and provided in partnership with Aboriginal people. AMIHS acknowledges and builds on the awareness, knowledge and understanding of Aboriginal families and communities about pregnancy and child health and its relationship to lifelong health.
Theory	Not reported
Target population(s)	Aboriginal women and non-Aboriginal women with Aboriginal partners during pregnancy and the postnatal period up to eight weeks.
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	NSW Health 2005, NSW Aboriginal Maternal and Infant Health Strategy Evaluation http://www.health.nsw.gov.au/kidsfamilies/MCFhealth/Documents/nsw-aboriginal-maternal-infant-strategy-evaluation.pdf

Key findings from the NSW Aboriginal, Maternal and Infant Health Strategy (AMIHS)

Characteristic	Details
Program name	NSW Aboriginal, Maternal and Infant Health Strategy (AMIHS)
Details of implementation	The NSW Aboriginal Maternal and Infant Health Strategy (AMIHS) was funded by NSW Health in December 2000 and commenced implementation in 2001. The Strategy included: seven targeted antenatal/postnatal programs for Aboriginal women and infants across six of the former Area Health Services, representing 20 Local Government Areas (LGAs); a statewide Training and Support Program for midwives and Aboriginal health workers who provide these services; the evaluation. The care is provided in a partnership model by midwives and Aboriginal Health Workers/Aboriginal Health Education Officers, alongside Community Health, Aboriginal Health or Maternity Units. AMIHS includes community development activities that provide a holistic approach to developing the health and wellbeing of the women and families involved. The foundations of this strategy incorporate the principles of primary health care and were guided by Aboriginal Community consultations. Partnerships between Area Health Services (AHS) and the Local Aboriginal Community Controlled Health Services (ACCHS) are critical to the success of AMIHS. Other partnerships that are necessary include Brighter Futures, child and family health services, government and non-government organisations. Staffing: An AMIHS team consists of an Aboriginal Health Worker or Aboriginal Health Educator and a midwife. Each member of the AMIHS workforce requires particular skills, knowledge and attributes. In general, each member of the team needs to have knowledge of the philosophy, values and guiding principles of AHIMS and an understanding of how their roles relate to meeting these aspirations.
Details of evaluation	Evaluation by NSW Health was built in as part of the AMIHS implementation. The first evaluation was performed in 2005 using both qualitative and quantitative data for the 2004 calendar year. There is another evaluation (2016-2018) being conducted by Murawin and Human Capital Alliance to investigate the reach, impact and cost of the NSW Aboriginal Maternal and Infant Health Services (AMIHS) Program since it was established over 15 years ago.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** *Results from previous evaluation (2005)* Antenatal visit before 20 weeks: the program significantly improved the % of women accessing antenatal services before 20 weeks. Maternal smoking: there was no change in rates of maternal smoking; however it is suggested the rates of maternal smoking were underreported at the start of the program due to lack of trust Preterm birth: the % of babes born prematurely has significantly reduced since establishment of AMIHS Proportion of low birth weight: did not change Perinatal mortality: there was a reduction in perinatal mortality but not significant
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction *Results from previous evaluation (2005)* Aboriginal women were very satisfied with the AMIHS programs. Home visiting, the inclusion of an AHW/AHEO in the team and reminders about, and transport to, antenatal appointments were the most important aspects for Aboriginal women.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported

Characteristic	Details
Factors which influenced outcomes	**Facilitators** *Results from previous evaluation (2005)* Greater success in accessing women occurs when programs are linked with the local Aboriginal controlled health services based in the community. Strong partnerships in a number of areas have developed as a result of AMIHS being located in Aboriginal community controlled health services. Strengths of AMIHS: The team approach, where an AHW/AHEO and a midwife work together in a primary health care model to provide continuity of care, is a major strength of the AMIHS. Aboriginal women were particularly positive about the level of continuity provided by a culturally appropriate caregiver that the AMIHS provided. One of the other strengths of the AMIHS is the ability of the teams to be in the community, provide home visits, and follow up women, especially those who are hard to find. The level of trust that the AMIHS clinicians had with women may mean that they disclosed more information than previously.
	Inhibitors *Results from previous evaluation (2005)* There are still challenges to address. Many of these reflect long term social and economic factors and require ongoing work and commitment.
Any other relevant information	*Results from previous evaluation (2005)* A number of innovative and exciting community development projects have been undertaken as part of the AMIHS. These include art programs, peer education and partnerships with other organisations.

Key characteristics of the Best Beginnings Program

Characteristic	Details
Program name	Best Beginnings
Lead organisation(s)	Department for Child Protection and Family Support, W.A. Government & Department of Health
Country and type of health setting	Western Australia Home visiting service
Program design and duration	Best Beginnings is an intensive home visiting service of parents of children up to 2 years old and pregnant women. The program involves regular home visits by trained staff – including nurses, teachers, social workers, and psychologists – that provide support, advice, information, community connections and practical help to parents. The program aims to: • improve child health and wellbeing • foster attachment and bonding between mothers and infants • improve parent and family functioning • develop social support networks. Best Beginnings was introduced as a pilot program in metropolitan Perth during 2000. It is now available in all CPFS districts throughout WA. The final expansion occurred following the 2007 Ford Review recommendation that the program be rolled out state-wide and this was expedited in 2010 by the provision of Royalties for Regions funding for six regions in which the service had not been established.
Context for the initiative	Not reported
Formative research	Best Beginnings was informed by the Queensland Department of Health's Family CARE model (Armstrong, Fraser, Dadds, & Morris, 1999) and the Nurse Family Partnership (NFP) model (e.g. Olds, Henderson, & Kitzman, 1994; Olds, Henderson, Tatelbaum, & Chamberlin, 1986).
Theory	The program emphasises the ecological perspective (Bronfenbrenner, 1979), self-efficacy (Bandura, 1977) and attachment theory (Bowlby, 1969).
Target population(s)	Service accepts mothers referred antenatally or before the baby is three months old, and works with them until the baby is two years of age. Best Beginnings is targeted to parent/s with specific risk factors that make their child vulnerable to poor attachment, development delay and poor life outcomes
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Annette Jackson and Sarah Wise, A Review of Best Beginnings as part of a Child Protection strategy focussed on engaging earlier with vulnerable families. 2016 http://www.parliament.wa.gov.au/publications/tabledpapers.nsf/displaypaper/3914731ccc1340867b0a781a4825804a0004780b/$file/tp-4731.pdf Multiple other references are cited, all prior to 2010.

Key findings from the Best Beginnings program

Characteristic	Details
Program name	Best Beginnings
Details of implementation	Social workers, psychologists and Aboriginal workers. Teams meet regularly to ensure a holistic approach to meeting the needs of the families.
Details of evaluation	An earlier qualitative evaluation was performed by the Telethon Institute in 2004. In 2016, another evaluation performed by the Berry Street Childhood Institute, commissioned by the Department of Child Protection and Family Support. The aim of this review was to explore whether Best Beginnings is fit for working with highly vulnerable pregnant women and families where the infant is at risk of maltreatment and whether the current program theory and design is fit for this purpose or whether adaptations are required. Special regard was given to the appropriateness or otherwise of the program for Aboriginal families. The review employed program theory evaluation, consultation, document review and literature review as its key methods. It concluded: While Best Beginnings began as a prevention and health promotion service targeting families who had difficulties or needed additional support, it has shifted over time such that it is currently targeting the most "at-risk" and "hard to reach" families in Western Australia. The conclusion drawn from the program theory evaluation is that Best Beginnings in its current configuration is not designed or adequately equipped to respond to families where the child is at risk of maltreatment. If its focus was on more imminent high risk it would be even less equipped.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the WA Preterm Birth Prevention Initiative

Characteristic	Details
Program name	WA Preterm Birth Prevention Initiative
Lead organisation(s)	Joint collaboration between: Government of Western Australia, the University of Western Australia, King Edward Memorial Hospital, Women & Infants Research Foundation
Country and type of health setting	Western Australia, state-wide 3 components: an outreach program providing on-site education about new clinical guidelines to health care professionals; a new dedicated preterm birth prevention clinic at a tertiary hospital; and a public health campaign based on print and social media for women and their families
Program design and duration	Focused on outreach program providing on-site education about new clinical guidelines to health care professionals throughout the state, a new clinic at a tertiary hospital for referral of cases at highest risk, and an awareness campaign (print and social media, called thewholeninemonths.com.au) for women Partial introduction during 2014, full enactment during 2015
Context for the initiative	Initiative aimed to safely lower the rate of preterm birth across the state
Formative research	Not reported
Theory	Not reported
Target population(s)	Not reported
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: Maybe 4. To support transition from postnatal care to parenthood: No
References	Newnham P, Meharry S, Lee H-S, et al. Reducing preterm birth by a statewide multifaceted program: An implementation study The Western Australian Preterm Birth Prevention Initiative. The whole nine months [Available from: http://www.thewholeninemonths.com.au/ accessed 7 May 2018 WA Health's Women and Infants Research Foundation. The WA preterm birth prevention initiative [Available from: http://ww2.health.wa.gov.au/News/Preterm-birth-prevention-project-to-continue accessed 7 May 2018.

Key findings from WA Preterm Birth Prevention Initiative

Characteristic	Details
Program name	WA Preterm Birth Prevention Initiative
Details of evaluation	See below
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** In the state overall, the rate of singleton PTB in 2015 was 6.9%, lower than in any of the preceding 6 years, with the reduction being statistically significant when compared with 2012 and 2013 when the rates were 7.4% and 7.5%, respectively. The statewide reduction in PTB rates included the 28-31, 32-36, and <37 week gestational age groups.
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Group Pregnancy Care Study

Characteristic	Details
Program name	Group Pregnancy Care
Lead organisation(s)	Research project by Murdoch Children's Research Institute; partnered with: The Victorian Foundation for Survivors of Torture (Foundation House) Victorian Cooperative on Children's Services for Ethnic Groups (VICSEG New Futures) Monash Health (Dandenong Hospital) Western Health (Sunshine Hospital) Northern Health Mercy Hospitals Victoria Wyndham City Council Brimbank City Council Hume City Council **Policy Partners:** Victorian Department of Premier and Cabinet Victorian Department of Health and Human Services Victorian Department of Education and Training Municipal Association of Australia
Country and type of health setting	Melbourne, metro Involves inter-agency collaboration between public maternity hospitals, refugee settlement agencies, and maternal and child health (MCH) services.
Program design and duration	The aim of the program is to provide multifaceted, culturally appropriate preventive health care, information and support to refugee women during and after pregnancy in a group setting. The program is cost-free; provides care and information that is woman-directed, culturally appropriate and in women's language; and facilitates links and referrals to services as necessary. The organisations and staff involved have agreed to apply these principles: Community consultation and engagement Establish rapport with the woman and when present her family Giving women time and space to ask questions, check understanding and consent for medical tests and other procedures and Inform family of procedures, when appropriate Provide an on-site interpreter for pregnancy appointments Continuity of care (including interpreters and bicultural workers) Support women and her family's pathway through the health system Promote women's understanding of preventative health Respect, empathy, openness and sensitivity to cultural difference Recognise and understand the refugee re-settlement experience Work within a social model of health Outreach, referral and service co-ordination
Context for the initiative	The program was developed following a successful demonstration project - called Healthy Happy Beginnings - was established by working with the Karen community (from Burma). Community feedback about gaps in services and information was a catalyst for developing the program, and the Karen community have continued to be actively involved in refining how the program works to support their community.
Formative research	Not reported
Theory	Not reported
Target population(s)	Refugee women during and after pregnancy
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options No 4. To support transition from postnatal care to parenthood: No
References	Healthy Mothers Healthy Families Research Group. The group pregnancy care study: Murdoch Children's Research Institute. https://www.mcri.edu.au/research/projects/group-pregnancy-care-study

Key findings from the Group Pregnancy Care Study

Characteristic	Details
Program name	Group Pregnancy Care Study
Details of implementation	Not yet implemented (hard to work out when is/ if it has begun) The Group Pregnancy Care Study will facilitate multi-faceted opportunities for refugee background bicultural staff to build capabilities relevant to improving maternal and child health outcomes in their communities through participation in service delivery and research activities. Bicultural workers will be involved in program delivery as members of the multidisciplinary teams providing care to women during and after pregnancy. In addition, bicultural researchers will contribute to program evaluation providing opportunities for building their skills and knowledge of research activities.
Details of evaluation	Evaluation (not yet done) will involve: • use of routinely collected hospital data to compare health service use and maternal and infant outcomes before and after program implementation using an interrupted time-series design • interviews with women participating in the program at 30 weeks gestation and at 4 months postpartum • audit of hospital medical records for all participating women • focus groups with participating women and service providers • assessment of cost effectiveness.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported here
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Mater Mothers' hospital refugee antenatal clinic program/approach

Characteristic	Details
Program name	Mater Mothers' Hospitals refugee antenatal clinic
Lead organisation(s)	Mater Mothers hospital
Country and type of health setting	Australia; large tertiary maternity hospital; metro In-hospital
Program design and duration	A dedicated antenatal clinic for women from refugee backgrounds attending a large, Australian, tertiary maternity hospital. Evaluated 2010 after the first year of operation
Context for the initiative	Not reported
Formative research	Research suggested that continuity for culturally and linguistically diverse women, across all maternity care providers, in conjunction with appropriate community support, was likely to be more beneficial than the provision of intensive obstetric services alone.
Theory	Not reported
Target population(s)	A specialist antenatal clinic for women from refugee backgrounds
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Stapleton, H., et al. (2013). "Women from refugee backgrounds and their experiences of attending a specialist antenatal clinic. Narratives from an Australian setting." Women & Birth: Journal of the Australian College of Midwives **26**(4): 260-266.

Key findings from the Mater Mothers' hospital refugee antenatal clinic program/approach

Characteristic	Details
Program name	Mater Mothers' Hospitals refugee antenatal clinic
Details of implementation	The service began in 2009 and operates two days/week and is located within the hospital's mainstream antenatal clinic. The all-female staff appointed, comprising a midwife, obstetrician and social worker, were encouraged to develop a 'best practice' model of care which included psycho-social support, culturally appropriate and timely interpreting services, and an ongoing programme of staff training. The clinical remit was limited to the antenatal period and contracted hours were on a part-time basis for all clinic staff.
Details of evaluation	The evaluation, which was completed in 2010 by researchers from Aust Catholic Univerity, sought to explore how such women described their maternity experiences, and to identify recommendations for improvements in future service provision. The evaluation, which was undertaken after the first year of clinic operations, specifically aimed to identify facilitators and barriers to the delivery and quality of care. The evaluation was mixed methods, combining qualitative and quantitative approaches is particularly well suited to studying populations from refugee/immigrant backgrounds. Maternity staff were surveyed and women were interviewed. The hospital databases provided clinical and psychosocial data for the 190 women who had attended the specialist clinic between the opening (January 2009) to the end of the evaluation (May 2010). Data were compared with the broader population of women [n = 4158] giving birth at the same public hospital.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Maternal smoking: significantly less women who attended the clininc smoked compared to hospital Maternal weight: significantly less women who attended the clinic were obese compared to hospital Preterm birth: there was no significant difference between PTB rates of those at clinic and rest of hospital Onset of labour: significantly more women who attended clinic had a spontaneous onset of labour Mode of birth: significantly more women who attended clinic had a vaginal delivery Perineal trauma: significantly more women who attended clinic had an intact perineum Breast feeding at discharge: significantly more women who attended clinic were feeding with breast milk and formula
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Whilst women's narratives described overwhelmingly positive experiences with regards to the antenatal care they received, lack of continuity during labour and the postnatal period provoked disappointment and worry.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** All participants confirmed that a major strength of the clinic as the provision of continuity throughout the antenatal period, which reduced the need for women to revisit traumatic memories and facilitated the development of trusting relationships. Continuity of carer also resulted in less time conferring with an interpreter over historic events, leaving longer to discuss current concerns.
	Inhibitors The central location of the hospital was problematic as many women resided in outer city suburbs and faced lengthy, and expensive, commutes by public transport. Few women had access to the private vehicles used by males in the household for work or study-related travel.

Characteristic	Details
Any other relevant information	A more flexible appointment schedule might also help to resolve associated problems including the 'school run', and hence reduce pressures on women to demonstrate that they were responsible and caring mothers. A proposal currently under discussion by the hospital managers concerns the relocation of the clinic, or the provision of outreach services, in women's areas of residence. The introduction of a Midwifery Group Practice, to improve continuity throughout the maternity episode, is also under consideration.

Key characteristics of the Sustaining NSW Families program

Characteristic	Details
Program name	Sustaining NSW Families (SNF)
Lead organisation(s)	NSW Kids and Families
Country and type of health setting	Australia Home visiting service
Program design and duration	SNF is a child and family health service that offers home visits to infants and their parents by specialist trained Child and Family Health Nurses over the first two years of the child's life and ideally before the mother gives birth. The program is designed as a prevention program to improve child outcomes for children who may be at risk of compromised development. SNF clinicians work in partnership with other service providers, including General Practitioners. Families continue to receive maternity care from their preferred health provider. In contrast to most home visiting programs, SNF is unique in that it employs other allied health professionals (such as speech therapists, dieticians, occupational therapist, physiotherapists, and drug and alcohol counsellors) to participate in case reviews and provide advice to the nurse. The aims of the SNF program are to improve child outcomes, strengthen a parent's capacity to provide a safe and nurturing environment, improve parenting competence and self-efficacy, and strengthen the relationships between children, parents, carers and health care professionals. 2010; evaluated 2015
Context for the initiative	The program fulfils a key recommendation from the NSW Keep Them Safe plan to provide integrated, multi-disciplinary child and family services in locations of greatest need, and by outreach, if necessary.
Formative research	Evidence from previous local and international health home visiting programs has shown that families benefit through improved home environment; secure parent –child relationships; child development; and increased immunisation and breastfeeding maintenance rates, as well as decreased rates of child abuse and neglect.
Theory	The program grew out of an extensive body of literature showing that adverse events during the prenatal, postnatal periods and the early years can put children at risk of experiencing poor outcomes in their health, development, and wellbeing which endure into later life. In particular, the SNF program was closely modelled on the home visiting programs identified in the literature as being able to demonstrate outcomes for participants including the Nurse Family Partnership program in the United States and the Miller Early Childhood Sustained Home visiting (MECSH) trial in New South Wales.
Target population(s)	The program has been designed for families experiencing social and economic disadvantage, who are vulnerable and who have associated impacts on their mental health and wellbeing. SNF is offered free to eligible families, ideally starting during pregnancy and continuing until the child's second birthday.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	KPMG, June 2015 Evaluation of the Sustaining NSW Families Program. FINAL report

Key findings from Sustaining NSW Families program

Characteristic	Details
Program name	Sustaining NSW Families (SNF)
Details of implementation	The program commenced in 5 sites in 2010 and expanded to another 2 sites in 2011 which focussed on specific cohorts; Arabic & Mandarin speaking families, and Aboriginal families A total of $28.576 million has been allocated to the program over the five year period 2009-10 to 2013-14. This comprises $18.75 million in one-off funding for establishment and staff professional development and $10 million in recurrent funding.
Details of evaluation	An independent evaluation of the Sustaining NSW Families (SNF) program was commissioned by NSW Kids and Families. The evaluation involved a process, outcomes and economic evaluation of the program and was undertaken by KPMG over the period January 2014 to December 2014. It included: case file review, interviews and focus groups of mothers and nurses and measures of child development
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Breastfeeding exclusively at 6 months: not as high as the general population Immunisation: higher than average immunisation rates Majority of children had normal developmental outcomes at 4 & 12 months but not compared to anything Safe sleeping practices: higher proportion than general population. Parenting: 93% of parents demonstrated an improved parenting skills
	Long term outcomes (measured 1 year or longer after birth) For example, if child development at 3 years of age was reported, it would go here Majority of children had normal developmental outcomes at 24 months but not compared to anything. There were improvements in the HOME inventory which measures the quality and quantity of stimulation and support available to children in the home environment from 4 months, 12 months to 24 months.
	Satisfaction All staff and families interviewed reported there were benefits from the program in its focus on both direct, content specific skills such as meal preparation and language acquisition activities, as well as indirect skills such as exploring relationships and values, and understanding infant temperament.
	Economic evaluation The cost benefit analysis estimated that the SNF program has delivered a net benefit to the economy since inception of $3.1 million (in 2013-14 prices). This is equivalent to a benefit cost ratio of approximately 1.2, which means for every dollar that has been invested in the program, it is estimated to generate $1.20 in benefits. The net benefit per child completing at least one year of the SNF program was estimated to be $9,769.
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	The evaluation did not compare most outcomes to any other rates, they state: Children from disadvantaged backgrounds often do poorly on these types of measures and further research is needed to determine the extent to which the SNF program may have ameliorated adverse outcomes in these areas in the absence of other interventions.

Key characteristics of the Youth Parents Program

Characteristic	Details
Program name	Youth Parents Program (YPP)
Lead organisation(s)	Australian Red Cross
Country and type of health setting	Australia; NSW Metro Residential care for young parent in the community
Program design and duration	Aims to improve the capacity of very young parents (aged 13 to 25 years) to live and parent independently through its Residential, Outreach and Aftercare stages. YPP stablished in Randwick In 1993, expanded to Parramatta, Gosford & Nowra in 2010
Context for the initiative	Originally established as residential service to accommodate young women and children, then expanded to become a 3 stage parenting program (residential, outreach, aftercare) in response to an internally identified need for housing and ongoing staged support when families concluded their residential placement.
Formative research	International & domestic research has shown that: Young mothers who disengage from school are more likely to have subsequent teenage pregnancies and are at higher risk of abusive relationships. Children of adolescent parents are at greater risk of cognitive impairment, lower educational attainment, poor nutrition, abuse and neglect Children who are removed from families often results in negative longer term outcomes at great expense to government.
Theory	YPP is a 'unique holistic model of best practice that takes a strengths-based early intervention approach to family restoration aimed to build the capacities of the young parents to live independently in secure housing and parent successfully.'
Target population(s)	YPP provides accommodation, support and educational services to pregnant and parenting young parents under the age of twenty-five in New South Wales, Australia
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Dr Rochelle Spencer, Dr Gillian Vogl, Centre for Research on Social Inclusion, Macquarie University. 'Turning Points. Evaluation of Red Cross Young Parents Program' 2010

Key findings from the Youth Parents Program

Characteristic	Details
Program name	Youth Parents Program (YPP)
Details of implementation	Not reported
Details of evaluation	Macquarie University performed an evaluation in 2010. This evaluation involved a qualitative analysis. There was no quantitative data collected. Another evaluation is due in 2018.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) *From 2010 evaluation:* Parental education: The researchers observed and heard about many 'turning points' for the parents that resulted directly from their engagement with the program. Young Parents Program is evidently successful in creating aspirations, confidence and building the skills of these parents. A significant turning point for many of the clients came in the form of learning how to balance study with parenting. One of the most fundamental changes for young parents participating in the program is in their aspiration for their future.
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes *From 2010 evaluation:* Young Parents Program engages often distressed young parents with respect and affirms the reparative potential in young parents by enhancing strengths as opposed to deficits. Nurturing engagement in meaningful relationships and in meaningful activities are essential factors for positive change. Young Parents Program strives to accomplish this by exploring and mutually agreeing on goals the young parents are truly invested in; exploring and agreeing on ways to reach those goals; to see the ability to make positive change; to see intervention as a collaborative process and to regularly ask for feedback and adapt. This research suggests that Young Parents Program demonstrates a contribution to building the capacity of individuals for self realisation. Even for those parents who did not successfully complete Young Parents Program, their involvement in the program elicited some positive outcomes for each client as it focused on individual strengths and capacity building.
Factors which influenced outcomes	**Facilitators** *From 2010 evaluation:* Findings from this research suggest that integral to the success of this program are the following key findings: -The dynamic nature of the program where there is a continual focus on building the skills of staff to deal with more diverse and more 'at risk' clients with challenging behaviours; -The twelve month Residential phase of the program is an essential component for working with the most disadvantaged and 'at risk' clients; -The collaborative ways in which the program works with NSW Community Services and other services in joined up ways; -The community hub of support that has been developed around the Residential component.
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of The Area-Based Childhood (ABC) Programme

Characteristic	Details
Program name	The Area-Based Childhood (ABC) Programme
Lead organisation(s)	Co-funded by the Irish Government (Department of Children and Youth Affairs) and the Atlantic Philanthropies The Area Based Childhood Programme is a cross-departmental initiative announced in the Programme for Government. The Centre for Effective Services (CES) has been asked by the Department of Children and Youth Affairs (DCYA) and Atlantic Philanthropies (AP) to support and oversee the design, planning, evaluation and implementation of this programme.
Country and type of health setting	Ireland – families living in areas of disadvantage Is a cross-departmental initiative in various settings (health and other). Examples include: community-based antenatal care and education; parent and family support; supporting oral language development for children aged up to 7 years, infant mental health; promoting youth mental health and wellbeing; supporting implementation of Aistear, Síolta and Highscope in early years settings; promoting social and emotional development among children up to 8 year olds; improving literacy and numeracy among school-aged children; and improving transitions for 4-6 year olds moving from early years services to primary schools.
Program design and duration	It is a prevention and early intervention initiative targeting investment in effective services to improve the outcomes for children and families living in areas of disadvantage. Services are provided in the included areas according to local needs. Programme to run from 2013-2017
Context for the initiative	The ABC programme targets investment in evidence-informed interventions to improve the long-term outcomes for children and families living in areas of disadvantage. It aims to break "the cycle of child poverty within areas where it is most deeply entrenched and where children are most disadvantaged, through integrated and effective services and interventions" in the following areas: child development, child well-being, parenting and educational disadvantage. The ABC programme will focus on the implementation of interventions and approaches found to significantly improve child outcomes in an Irish setting. The interventions and approaches within Areas should also be integrated with mainstream services such as health, education and the new Child and Family Agency.
Formative research	The ABC Programme builds on the learning from the previous Prevention and Early Intervention Programme (PEIP) 2006-2013, co-funded by DCYA and the Atlantic Philanthropies and delivered across three areas in Dublin: Ballymun (youngballymun), Dublin Northside (**Preparing for Life**) and Tallaght West (Childhood Development Initiative). The PEIP involved the evaluation of a diverse range of prevention and early intervention approaches and learning to date has demonstrated significant improved outcomes in a number of domains, in the areas of child behaviour, parenting, child health and development and learning. Under the ABC Programme, investment will be extended from the three existing PEIP Areas to a further ten Areas.
Theory	Not reported
Target population(s)	Families living in areas of disadvantage (13 geographic areas included in ABC programme)
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	https://www.dcya.gov.ie/documents/publications/20170421ABCProgramme2013to2017.pdf https://www.pobal.ie/FundingProgrammes/Area%20Based%20Childhood%20(ABC)%20Programme/Pages/default.aspx
Not evaluated	A national evaluation of the ABC Programme is underway. https://www.dcya.gov.ie/documents/publications/20170421ABCProgramme2013to2017.pdf

Key characteristics of the Preparing For Life Programme

Characteristic	Details
Program name	Preparing For Life Programme
Lead organisation(s)	Operated by the Northside Partnership (NSP) in Dublin, Ireland …
Country and type of health setting	Ireland, Dublin, metro Community / home setting
Program design and duration	An evidence-based intervention to meet the needs of the local community was developed by local agencies and community groups. A range of supports was provided to participating families from pregnancy until school entry. It was designed as an RCT. Pregnant women identified in maternity hospital or community were randomly assigned to either a high support treatment group (n=115) or a low support treatment group (n=118). Pregnant women in the high treatment group received a 5-year home visiting programme (mentors visit the family home for between 30 minutes and 2 hours every week, starting during pregnancy and continuing until the children started school), were offered the Triple P Positive Parenting Programme (when child was 2 years old) and baby massage classes (between birth and approx. 10 months of age, offered 5 group sessions of around 2 hours duration, or individual sessions of around 40 minutes). These supports were delivered by PFL mentors who were assigned to families at recruitment, and where possible, worked with the family over the course of the programme. Other low level supports were available to both the high and low treatment groups including: social events, facilitated access to local services, developmental toys and book packs, public health workshops, facilitated access to enhanced pre-school. PFL programme was developed between 2003 and 2008, conducted CHECK 2008-2015. Was superseded by the ABC Programme
Context for the initiative	Over half of the children living in the programme catchment area were starting school without the necessary skills to make a successful transition to school life. PFL aimed to promote child development and improve low levels of school readiness by supporting parents to develop skills and knowledge to help prepare their children for school.
Formative research	PFL was designed to prepare children for school by equipping parents with the skills needed to encourage child development from pregnancy onwards.
Theory	The theory of human attachment, socio-ecological theory of development, and social-learning theory.
Target population(s)	All pregnant women living in the catchment area between 2008 and 2010. Catchment area included 10 disadvantaged communities in Dublin. No exclusions, participation was voluntary. Prior to the start of PFL in these areas, 42% of families lived in social housing, 7% of the population had completed third level education, and unemployment was approximately three times the national average at 12%.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	UCD Geary Institute for Public Policy. Preparing for life early childhood intervention final report. Evaluation of the 'preparing for life' early childhood intervention programme. Dublin: UCD Geary Institute for Public Policy, 2016. PFL Evaluation Team at the UCD Geary Institute. Preparing for life early childhood intervention. Assessing the early impact of preparing for life at 6 months. Dublin: University College Dublin, 2011. PFL Evaluation Team at the UCD Geary Institute. Preparing for life early childhood intervention. Assessing the impact of preparing for life at 12 months. Dublin: University College Dublin, 2012. PFL Evaluation Team at the UCD Geary Institute for Public Policy. Preparing for life early childhood intervention. Assessing the impact of preparing for life at 36 months. Dublin: University College Dublin, 2014. Doyle O, Delaney L, O'Farrelly C, et al. Can early intervention improve maternal well-being? Evidence from a randomized controlled trial. PLoS One 2017;12(1):e0169829

Key findings from the Preparing For Life Programme

Characteristic	Details
Program name	Preparing For Life Programme
Details of evaluation	RCT (high support treatment group n=115, low support treatment group n=118). Surveys conducted before and during the programme. Families participated in research visits involving questionnaires, observations, and direct assessments when their children reached 6, 12, 18, 24, 36, and 48 months of age. Maternity and children's hospital records were also reviewed. In junior infants school, teachers completed online surveys about the children's school readiness, and researchers interviewed the children on their experiences of school life.
Outcomes/Impact	233 women agreed to take part in the programme, 52% of all those eligible. The remaining eligible women were not identified at recruitment (22%), or were approached but refused to participate or could not be contacted again after initial contact was made at the hospital (26%). A sample of women (n=102) who were eligible but did not participate, completed a short survey when their children were 4 years old. These mothers who did not join the programme were older, were more likely to have had a job during pregnancy, and had spent a longer time in school than the mothers who joined the programme. This suggests that the programme was effective in recruiting families most in need of the intervention. **Short-term outcomes (pregnancy to 6 weeks after birth)** Birthweight, breast feeding as a baby – no difference between groups **Intermediate-term outcomes (occurring 6 weeks to 1 year after birth)** At 6 mths: Children in the high treatment group and children in the low treatment group did not differ significantly across 1. any of the child developmental domains 2. many child health domains, including child health since birth, sleep routines, amongst others. However, the following significant differences were identified: • Children in the high treatment group were more likely to eat age-appropriate foods and to eat more often. • Children in the high treatment group were significantly more likely to have received the recommended immunisations at 4 months of age. • More mothers in the high treatment group reported that their children had experienced breathing difficulties compared to those in the low treatment group. • Children in the low treatment group were more likely to sleep in their own bed rather than with a parent or sibling. Family home environments in the high treatment group and the low treatment group did not differ significantly across many of the measured domains. Mothers in the high treatment group did not differ significantly from mothers in the low treatment group in terms of social support across such domains as discussing the programme with friends and family and level of support from friends, relatives and their child's father. However, a number of significant differences were identified: • Mothers in the high treatment group were less likely to be satisfied with the father's level of involvement in their child's life. • Mothers in the high treatment group were more likely than those in the low treatment group to know other parents with children the same age as their child. • Mothers in the high treatment group were more likely than those in the low treatment group to regularly meet with friends. • Children in the high treatment group were more likely to have visits with their grandparents. • Mothers in the high treatment group were more likely than mothers in the low treatment group to discuss the programme with their partner and other non-family individuals.

Long term outcomes (measured 1 year or longer after birth)

(Most results for this section taken from outcomes at ~48 mths, and then again at school entry ~59 mths)

PFL programme had a notable effect on children's cognitive development from 12 months until they started school. This positive impact was consistent across reports from mothers, teachers, and direct assessments of the children. The PFL programme not only improved cognitive development, it also increased the number of children scoring above average on these tests, and reduced the number scoring below average

Results suggest that the PFL programme had no impact on children's basic or advanced literacy skills.

Compared to assessments at younger ages, fewer impacts on social and emotional development were found at school entry, using reports from teachers. However, teachers reported reductions in hyperactivity and inattentive behaviours, and improvements in social competencies and levels of autonomy.

At 48 mths, high treatment children:
• had better fine motor skills and were less likely to be delayed in their fine motor skills
• slept longer
• were less likely to be overweight
• were more likely to be toilet trained

Almost all of the high and low treatment children visited hospital at least once before the age of 4. However, high treatment children used significantly fewer hospital services overall. Fewer ED visits. Ie Hospital records showed that the PFL children used fewer hospital services and used services more effectively.

Satisfaction

Overall, participant satisfaction with the programme between programme entry and six months was high. As expected, the high treatment group reported greater satisfaction with the programme than the low treatment group. However, the low treatment group reported also relatively high levels of satisfaction with the programme.

Economic evaluation - Not reported

Relevant subgroups analysis

Findings suggested the PFL Programme benefited both primiparous and multiparious mothers. Also benefited both lone and partnered parents but in different ways, benefited both mothers with higher and lower cognitive resources, with mothers with higher cognitive resources having more treatment effect, may be particular benefits for mothers at relatively high domestic risk in the high treatment group and their families, most notably in child health – such as child eating and sleeping habits and appropriate child immunizations, parenting, such as positive interactions with child, and home environment and safety, which includes the availability of appropriate and stimulating materials for children and general infant safety. However, in other domains, such as social support, there were treatment effects for both groups of mothers.

	Other outcomes *Maternal outcomes*: At 6 mths, no significant differences between mothers in the high treatment and low treatment groups except significantly fewer mothers in the high treatment group were hospitalised for special medical care immediately after having given birth. Mothers in the high treatment group and mothers in the low treatment group did not differ significantly across many of the parenting domains. The intervention had no impact on global well-being as measured by life satisfaction and parenting stress or experienced negative affect using episodic reports derived from the Day Reconstruction Method. Treatment effects were observed on measures of experienced positive affect derived from the DRM and a measure of mood yesterday. *Both participants and the implementation team:* • spoke positively about the Preparing for Life programme and their involvement with it • described the importance of the mentor-participant relationship. • spoke highly of the programme materials and their usefulness • Had general sense that the PFL programme was growing and changing in the community *Implementation team spoke of:* • the small changes and improvements that they have witnessed in the homes of the participants, and how these changes were not openly talked about by the participants. • felt the mentors involved the whole family in the programme (mentors did not refer to this aspect of their work)
Factors which influenced outcomes	**Facilitators -** Not reported **Inhibitors -** Not reported
Any other relevant information	Evaluations conducted at 6, 12, 18, 24, 36 months and a final report. Details are provided in the relevant reports.

Key characteristics of the Young Ballymun program

Characteristic	Details
Program name	Young Ballymun
Lead organisation(s)	Joint funding from the Atlantic Philanthropies (AP) and the former Office of the Minister for Children and Youth Affairs (OMCYA)
Country and type of health setting	Ballymun (in Dublin) Ireland, An area-based prevention and early intervention initiative
Program design and duration	A Community Change Initiative (CCI) which was with. It comprises five child- and youth-centred service strategies designed to improve learning and well-being outcomes for all children and young people in Ballymun. The five service strategies targeted identified needs across the life cycle of a child in three main areas: literacy and language, health and development, and mental health. The five services and the overall strategy reflect a commitment by youngballymun to: (1) promote innovative evidence-based programmes and evidence-informed, prevention and early intervention practice; (2) encourage collaborative and integrated practices/ways of working through multi-stakeholder engagement; (3) build capacity in families, amongst practitioners and within services; (4) promote an 'outcomes-focused' culture of service provision; and (5) ultimately foster lasting systemic change (i.e. change across multiple levels and systems). The 5 service strategies: Ready Steady Grow: incorporates 3 approaches (1) Implementing an enhanced baby development clinic for all 0-18 month olds and their parents to promote wellbeing in the parenting context and to strengthen adaptive systems in children; (2) Supporting mothers' (and their partners') adaptation to pregnancy and supporting the developing relationship between the mother, partner and the unborn child though the enhancement of existing services in the community; (3) Building the infant mental health capacity and skills of practitioners, families, programmes and systems to foster secure attachment, infant and toddler health and development. Other 4 strategies target older children: 3, 4, 5 Learning Years; Incredible Years; Write-Minded; What's Up? Established in 2007, development 2003-2006
Context for the initiative	Rationale includes: (1) the concentration and persistence of multiple forms of deprivation in clearly defined geographical areas, and (2) the potential for enhancing localised partnership working and bottom-up development which can, typically, be more difficult to establish at a regional/national level. As part of the Prevention and Early Intervention Programme (PEIP), the Irish government funded the development of area-based strategies to provide supports for early childhood education and to tackle child poverty.
Formative research	Not reported
Theory	Not reported
Target population(s)	Disadvantaged area of Dublin, Ireland
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Ghate D, Macdonald G, Metz A, et al. Reviewing the Story: Youngballymun's independent 'Expert Jury' review of their contribution and effectiveness: Preliminary Conclusions, 2015. McGilloway S, O'Brien M, Ní Mháille G, et al. A Process Evaluation of Youngballymun. Ireland: Maynooth University, 2013.

Key findings from the Young Ballymun Program

Characteristic	Details
Program name	Young Ballymun
Details of evaluation	Process evaluation: A 'theory-based evaluation' approach, located within a broader implementation science framework. Data collection included: documentary analysis and literature reviews; observations; cross-sectional survey; interviews & focus groups; and instrumental case-studies. Child-based outcomes: Data sources: school-based pupil monitoring system; a census survey of the social and emotional outcomes of 3rd class pupils (9 –year olds, 2013, 2014 and 2015) and of senior Infants (5-year olds) for two years; and a performance story evaluation approach (qualitative method of reporting the impacts) Expert Jury review and evaluation of above evaluations.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Attachment at 15 months evaluated (but results not reported) Learning outcomes at 5 and 9 years of age • significant reductions (ranging from 35% to 67%) in the proportion of the lowest achieving pupils (i.e. pupils scoring ≤10th percentile) in need of learning support • significant reductions (ranging from 8% to 40%) in the proportion of pupils scoring ≤ 30th percentile (i.e. pupils who may find in difficulty to cope in the mainstream classroom) • significant increases (ranging from 32% to 447%) in the proportion of pupils scoring ≥ 50th percentile (i.e. scoring average and above) • year on year improvements in pupils mean standardised test scores also observed • evidence of better social and emotional outcomes - between 2006 and 2015 • reductions (ranging from 17% to 77%) in the percentage of 4 and 5 year old children rated as having 'high needs' on all of problem SDQ subscales • reductions (ranging from 19% on the emotional symptoms subscale to 92% on the pro-social behaviour subscale) in the percentage of 9-11 year old children rated by their parents as having 'high need' across all but one of the problem SDQ subscales • teacher-completed SDQ data on Ballymun 9 year olds compare favourably with national data for Growing up in Ireland on 9 year-olds in DEIS Band 1 schools
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported

Characteristic	Details
	Other outcomes **Process evaluation** At SERVICE DESIGN AND STRATEGIC DEVELOPMENT OF PROGRAMME A significant period of time was spent on the 'exploration' and 'installation' stages of the Youngballymun initiative. Ultimately, however, this protracted period of service design and planning was beneficial and, as the service design process continued, the programme became more multifaceted. At ENGAGEMENT, COLLABORATION AND PARTNERSHIP WORKING Youngballymun successfully built engagement, particularly through its services, which helped to enhance collaborative working between the initiative and the local service community, and in establishing cross-community partnership working. While the IT structure has lacked aspects of a leadership role, it was proven to be an important resource in relationship building and information sharing. Equally, the ITs have potential for progressing the work of youngballymun as it evolves into the future, particularly in relation to the development of strategic thinking, the integration of principles and practices across the service community, and policy development. At CAPACITY BUILDING IN THE COMMUNITY • At the level of the individual, attitudes, beliefs, skills, knowledge and practices have been strengthened. • At an organisational level, new systems and structures (e.g. new services and strategies) have been implemented. Local leadership has also been leveraged. • At an environmental level, there is some evidence of increased awareness of some of youngballymun's key themes including: infant mental health, literacy and youth mental health. Social capital has also been buttressed by means of capacity building activities. • These outcomes provide a useful platform for building further capacity, whereby improved skills, practices and systems enable the delivery of better services for families and, in turn, strengthening community capacity. At INTEGRATION AND SYSTEMS CHANGE • Youngballymun successfully positioned itself as a strategic response to addressing changes in service provision for children, young people and families. More recently, it has pursued this through strategic approaches which draw together its services and engage cross-sectoral groups. • Youngballymun aimed to develop a life-cycle approach, which privileges prevention and early intervention rather than crisis response. The initiative has been most successful in developing its work relating to infancy, and the early primary school years. However, some gaps remain in the context of interventions for young people (although these are a work in progress), as well as in the focus of its policy work.

Characteristic	Details
Factors which influenced outcomes	**Facilitators** At SERVICE DESIGN AND STRATEGIC DEVELOPMENT OF PROGRAMME • exploring and understanding the needs of the community through research, needs analysis and consultation • Commitment and leadership (demonstrated by numerous stakeholders including the BDG, the youngballymun staff team and representatives from key local organisations) which drove the design and development process and was enabled, in particular, by the introduction of collaborative and participatory planning processes (e.g. the SDTs). • The availability of financial and human resources for the planning process • Initiating and maintaining flexibility and an openness to change • Actively promoting community involvement and collaboration At ENGAGEMENT, COLLABORATION AND PARTNERSHIP WORKING •Recruitment of experienced and knowledgeable staff • A sensitivity to the local context • The provision of training and mentoring by service staff • The development of effective working relationships At CAPACITY BUILDING IN THE COMMUNITY • Accessibility of resources to support new/changed practices (e.g. mentoring/modelling and coaching to ensure the transfer of training into practice; technical and expert input; practical and material resources) • Individualised and tailored approaches (e.g. phased implementation of capacity building activities informed by a local needs analysis and aligned with national policy (e.g. DEIS)) • Compatibility between capacity building and existing work roles/organisational demands/goal and national policy • Positive relationships between youngballymun staff and community members/practitioners • Leadership and commitment within organisations At INTEGRATION AND SYSTEMS CHANGE • The active promotion of community involvement and participation has been facilitated through the development of the Learning Community – formally through working groups, workshops, etc. and informally through the continued development of interpersonal relationships that foster the sharing of ideas. • The engagement with national and international experts has helped to help develop strategic thinking and policy papers and inputs. • The integration of approaches and principles across youngballymun and its services has created a more uniform set of responses to key issues. • There is a greater awareness of the benefits of cross-sectoral relationships and interdependency

Characteristic	Details
	Inhibitors At SERVICE DESIGN AND STRATEGIC DEVELOPMENT OF PROGRAMME • the need for the individuals involved to adjust to a new service planning methodology • the need for greater collaboration and partnership working • difficulties securing buy-in • a period of resistance and organisational rivalry • relationship between youngballymun and the local schools, while previously identified partners (Community Mothers) withdrew their participation in the initiative At ENGAGEMENT, COLLABORATION AND PARTNERSHIP WORKING • challenges in fostering collaboration within and across the statutory health and education sectors • the perception amongst some organisations of exclusion and an absence of support • the potential lack of capacity amongst some organisations to fully engage and participate At CAPACITY BUILDING IN THE COMMUNITY • System barriers (e.g. insufficient human resources to implement changed practices; lack of financial capacity) and • Conflict between organisational/individual work roles and/or national policies and capacity building activities. • Sociopolitical factors have changed throughout the lifetime of the youngballymun initiative and fluctuating economic factors (e.g. staff reductions), in particular, across both the statutory and community/voluntary sectors, pose a considerable threat to the further development and success of capacity building activities. At INTEGRATION AND SYSTEMS CHANGE • Engaging with senior management in the statutory sector has proved challenging to some extent and this was highlighted as a potentially significant barrier to implementing broader systemic change • Some organisations/sectors (e.g. post-primary education and youth training) have a perceived sense of exclusion from the work of youngballymun. • The economic climate has impacted quite considerably on resources for services/organisations and this may continue to negatively influence their ability to participate effectively with youngballymun and to adapt to its change process. Equally, current public sector reform has made engagement increasingly difficult as some services may withdraw to focus more on core work.
Any other relevant information	This is one of three programmes, preceding the introduction of the Area-Based Childhood (ABC) programme

Key characteristics of the New Baby Program

Characteristic	Details
Program name	New Baby Program (NBP)
Lead organisation(s)	South Eastern Health and Social Care Trust in Northern Ireland
Country and type of health setting	Northern Ireland Program for pregnant women presenting to antenatal care with socially complex circumstances in Ulster, Ards and Bangor Hospitals (County Down) in the South Eastern Health and Social Care Trust in Northern Ireland.
Program design and duration	Pilot RCT of 25 randomised to receive NBP. The remaining or standard Universal Core Programme recommended in the Healthy Child Programme through midwifery and health visiting services Pilot over 10 month period.
Context for the initiative	Determine whether the NBP, compared with routine antenatal and postnatal care, can improve infant attachment and maternal sensitivity among pregnant women with complex social factors* and the quality of maternal-child relationships). *social isolation/low family support/father in prison, intimate partner violence; substance misuse; maternal stress or history of mental ill health; current involvement with social services or probation; history of care or a care leaver; abnormal reaction to pregnancy
Formative research	Nurse-Family Partnership program is home visiting program targeted solely at first-time mothers, evaluated in US (3 RCTs) with positive outcomes, but no evidence of impact in 2 UK studies. Is commissioned for use in UK. No current provision of program for older and/or multiparous mothers presenting with complex social factors
Theory	Drew on evidence concerning the importance of maternal health and wellbeing in pregnancy for optimal in utero development and the importance of secure attachments and ensuring healthy social and emotional development in the early years
Target population(s)	Pregnant women presenting to antenatal care with socially complex circumstances
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Macdonald et al. Pilot and Feasibility Studies (2018) 4:44

Key findings from the New baby Program (NBP)

Characteristic	Details
Program name	New Baby Program (NBP)
Details of implementation	Pilot study- monthly health visits after booking to establish rapport, assess health, screen for domestic violence, monitoring of health, education, prepare for birth, refer to health and social services, assist in behavioural change. Postpartum- weekly visits up to 8 weeks, fortnightly til baby is 5 months and then monthly til 12 months, and every 3 months til 2 years.
Details of evaluation	Evaluation to come: 1. Primary outcomes: parent (primarily the mother)-child relationship, assessed by measuring both maternal sensitivity and child attachment 1. maternal mental health and outcomes for children, at birth and during the first year of life. aspects of parenting that are known to have a bearing on child development, such as parental mental health, smoking and substance use, neglect and maltreatment 2. process outcomes: recruitment, retention, program acceptability, study processes
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not assessed
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Ongoing evaluation

Key characteristics of the Healthy Pregnancy 4 All Program

Characteristic	Details
Program name	Healthy Pregnancy 4 All (HP4All)
Lead organisation(s)	Dutch Ministry of Health, Welfare and Sport, The Hague, grant 318804, and by financial support from participating municipalities, health care insurer Menzis and ZonMw (The Netherlands Organisation for Health Research and Development, grant number 50-52000-99
Country and type of health setting	The Netherlands. A national Geographic Information System (GIS) was used to divide The Netherlands into 62 municipalities, being the 50 municipalities with > 70.000 inhabitants and the 12 provinces (excluding the 50 previously selected municipalities). Dependent on risk assessment. For the majority of women pregnancy is not treated medically and low risk pregnancies and deliveries are managed by independently practicing midwives in the community, Secondary/tertiary care is indicated for high risk pregnancies only and provided by obstetricians
Program design and duration	A nationwide study focusing on deprived areas with a higher than average perinatal mortality and morbidity rate. By selecting these areas they aimed to intervene in potentially high risk populations that would benefit the most. 2 planned sub-studies 1) a population based prospective cohort study focusing on the effectiveness of customized preconception care (PCC) and 2) a systematic antenatal risk assessment score-card including both medical and non-medical risk factors followed by patient-tailored multidisciplinary care pathways. August 2012, and the first included study participant delivered in March 2013. Paper published 2015 reports still currently recruiting.
Context for the initiative	Inequality in perinatal mortality rates and slower decline than other European Countries
Formative research	Studies using The Netherlands Perinatal Registry showed increased adverse pregnancy outcome in large urban areas, in particular in deprived areas. Analyses of this database provided recognition that four specific morbidities precede perinatal mortality in 85% of cases, (the 'Big4' morbidities : congenital anomalies, preterm birth (<37th week of gestation), small for gestational age (SGA, birth weight <10th percentile for gestational age) or low Apgar score (<7, 5 minutes after birth). Several municipal pilot studies in Rotterdam provided its framework (Denktaş, 2014) **Aspect two** Comparison of Big4 prevalence across selected 62 areas. Standardisation of perinatal outcomes for population differences by maternal age, parity, ethnicity, and SES. For all comparisons the standardized rate (STND), the inequality-rate (INEQ, the relative risk of the standardised outcome for low SES pregnant women compared to high SES pregnant women) **Aspect three** Decile scores assigned to regions, varying from one (the region is one of the 10% areas with best outcomes) to 10 (the region belongs to the 10% worst outcomes) for both the Preconception and the antenatal risk assessment study **Aspect four** Areas with the highest decile scores invited to commit to the HP4All study. Criteria to participate were: a) active involvement by a local Policy Officer (>one day per week for the duration of the study), b) local political support for the study (e.g. financial support, involvement in health related policy, local resources, involvement of local networks).
Theory	Not reported but DoHAD mentioned in references about the preconception care aspect
Target population(s)	2. Deprived areas with a higher than average perinatal mortality and morbidity rate a) **Preconception population**: women aged 18-41 years old. Women are informed about the PCC consultations by: (1) an invitational letter from the municipal health service or municipality, (2) invitational letter from the family doctor, (3) referral by the youth health care service, (4) referral by a preconception health educator. **b) Antenatal population:** midwifery practices in participating municipalities randomly assigned to either the use of a score card ('R4U') based antenatal risk assessment, care pathways and multidisciplinary consultation (intervention group) or conventional risk assessment (control group). The R4U scorecard consists of six domains (social status, ethnicity, care, lifestyle, medical history and obstetric history), subdivided into 70 items.

Characteristic	Details
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Denktaş et al.: Design and outline of the Healthy Pregnancy 4 All study. BMC Pregnancy and Childbirth 2014 14:253. Vos et al Process evaluation of the implementation of scorecard-based antenatal risk assessment, care pathways and interdisciplinary consultation: the Healthy Pregnancy 4 All study Public Health 150 (2017) 112-120 Vos et al. Effectiveness of score card-based antenatal risk selection, care pathways, and multidisciplinary consultation in the Healthy Pregnancy 4 All study (HP4ALL): study protocol for a cluster randomized controlled trial Trials 2015, 16:8

Key findings from the Healthy Pregnancy 4 All Program

Characteristic	Details
Program name	Healthy Pregnancy 4 All
Details of implementation	Saunders 7 step method used to assess process of implementation for the risk assessment part of the HP4All program The study is implemented by the national HP4ALL staff of the Erasmus Medical Center in Rotterdam and by the local HP4ALL project managers. The staff consists of 2 junior researchers, research assistants and 2 project managers (1 for each sub-study) and 2 program directors. The local project managers are either allocated from the municipality or from the municipal health services Extra resources were allocated where necessary – budget amounts not stated.
Details of evaluation	**NO EVALUATION YET Process Evaluation planned** (1) Were all elements of the RA intervention delivered by the HP4All team (dose delivered)?; (2) To what extent were the interventions within the RA intervention implemented by healthcare professionals (dose received)?; (3) To what extent did local caregivers and local project coordinators provide support for the new approach in RA (fidelity and completeness)?; (4) How many local healthcare professionals were involved throughout the project, and how many study participants were reached (reach)?; (5) Will midwives and gynaecologists continue with the intervention as implemented (participant responsiveness)?
Outcomes/Impact	**NO EVALUATION YET Planned Short-term outcomes (pregnancy to 6 weeks after birth)** **Primary outcomes:** - Preterm birth - Small for gestational age **Secondary outcomes** - Undetected small for gestational age and unexpected preterm births (babies born in the first level of care) Prevalence of risk factors - Risk accumulation - Involved healthcare professionals during pregnancy - Detection and prevention of impaired growth and preterm birth during pregnancy - Perinatal mortality - Congenital anomalies - Delivery modus - Place of delivery - Asphyxia - Neonatal admission - Maternal morbidity (such as pre-existing chronic disease, pregnancy complications, positive booking bloods), and maternal mortality. - Patient satisfaction
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Planned to assess patient satisfaction
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported

Characteristic	Details
	Other outcomes **Care Provider Outcomes** - Current status number of patients and employees - Use of risk selection instruments - Collaboration with hospitals and (other) midwifery practices - Work processes (for example, counseling for prenatal screening, or ultrasound facilities) - Care provider satisfaction in both groups - Feasibility - Efficacy of implementation - Collaboration - Continuation of intervention
Factors which influenced outcomes	**Facilitators** • New partnerships between the curative and preventive sectors arose or were intensified • Organised meetings to design customised care pathways and the RA tool were found to bridge gaps between the curative setting and public health and create integrated care setting • The intervention triggered all involved professionals to acknowledge that RA in early pregnancy is important, and that identified risks need intervention because of detrimental local perinatal mortality and morbidity rates. • Three municipalities embedded the project goals in their formal local health policy, and a follow-up study is planned for the next three years (Healthy Pregnancy 4 All 2) allowing the authors to maintain, improve and further promote sustainability of the achieved outcomes in RA and the collaboration investments • healthcare professionals may need training to assess and encounter non-medical risk factors. • Time schedule of the first antenatal visit may have to be extended for the RA itself and the actions and multidisciplinary consultations to be undertaken
	Inhibitors • Contextual factors challenging • Professionals from obstetric care, social welfare and community health services should agree on the concept of comprehensive RA as a starting point for collaboration but a challenge due to existing interprofessional communication barriers. • The fact that this intervention was performed within a randomised controlled trial provided implementation challenges. Municipalities were made aware of their local perinatal health statistics, and subsequently allocating them to the control group seemed contradictory to ambitions to intervene. • For local health authorities, participation in the control arm of the study seemed to demand a large amount of effort without any direct benefit. This perhaps reflects a lack of understanding of randomised controlled trials and different motives or agendas that warrant qualitative evaluation because they might form barriers to future randomised controlled trials. • Control municipalities offered the opportunity to cross-over to use of the R4U after they had included a certain number of participants but uptake low. It is possible that the concept of a randomised controlled trial contradicts other motives of local health authorities? • Healthcare professionals stated that requirements to inform participants, such as information letters with predefined content and documenting informed consent, were barriers to asking women to participate (e.g. in the case of low literacy) or for women to participate when asked. • Neighbourhood deprivation is known to be associated with selective participation. The authors were not able to verify the non-response to the questionnaires in relation to sociodemographic characteristic.
Any other relevant information	Not reported

Key characteristics of the Rotterdam Perinatal Health "Ready for a Baby"program

Characteristic	Details
Program name	Ready for a Baby
Lead organisation(s)	Erasmus University Medical Centre and the Municipal Health Services Rotterdam Rijnmond, The Netherlands, in close collaboration with the The School of Midwifery at the Rotterdam University of Applied Sciences, the Municipal Centre for Statistics, Youth and Family centres, ACHMEA Health Insurance and the Stichting Trombosedienst&Artsenlaboratorium Rijnmond (STARMDC).
Country and type of health setting	The Netherlands. Urban. Rotterdam, north district. Secondary to National data showing that rates of small for gestational age, preterm birth, and perinatal mortality are highest in deprived areas in Rotterdam Dependent on risk assessment, at a single timepoint by the midwife. Dependent mainly on medical rather than lifestyle risk assessment. The Dutch health care system is organized according to a 3-tiered system with clear boundaries between primary, secondary and tertiary levels of care. The midwife is the primary care provider and gatekeeper in the maternity care setting in the Netherlands. The programme office consists of two project managers (one appointed by the municipal health care services and one by the Erasmus University Medical Centre), a number of programme advisers and a communication team. In close collaboration with health care and other professionals working in the field, the programme office formulates and manages selected projects. Professionals involved in a programme project are committed to targets by means of a covenant.
Program design and duration	The programme consists of projects that are based on standard care in the obstetrical chain of care and supplemented by a number of non-medical measures. 1) **Preconception care** - in the North district of Rotterdam a pilot study on preconception care was initiated. Pilot study aimed to develop a model protocol for preconception care that can be implemented in the whole city. The major challenge of this pilot study was not only to raise public awareness for the concept of preconception care but also to reach the most vulnerable population groups 2) **Antenatal care** – Plan to reduce delayed entry into antenatal care and better assess risk early. A Prenatal risk screening instrument—the R4U (Rotterdam Risk Reduction Checklist)—was developed and previously tested in a midwifery practice. Pilot project of a shared care model using R4U with two aims: (1) to develop a protocol or model for shared care and (2) improve the quality of care and counselling of high risk pregnancies. 3) **Birth** – opening of birth centres co-located to hospital 4) **Maternity Care** – Available to all women in Netherlands are maternity care assistants to support mother and baby post discharge but services not used by 80% of women in deprived areas. Part of the project was to better understand the barriers for these groups and to link better with birth centres. 5) **Youth and Family Centres** – provide transition support to child health – the centres provide advice, guidance and assistance, from the start of pregnancy until the moment a child is grown (-9 months until 23 years). The "Ready for a Baby" Program tried to also link these centre back to preconception care Official launch Jan 2009
Context for the initiative	Inequality in perinatal mortality rates and slower decline than other European Countries

Characteristic	Details
Formative research	**Aspect one** Development of the design of the program took 9 months and several steps: Expert meeting with health care professionals, academics and municipal executives to discuss and analyse the poor perinatal health outcomes. The meeting resulted in (a) determination of areas of special attention, (b) outline of the problem in relation to the desired level of care, (c) delineation of responsibilities of each type of health care professional in the chain of care, (d) analysis for the proposed measures in terms of costs and benefits, (e) identification of innovation options and (f) phasing and overall time schedule for the plan. **Aspect two** Summary of scientific literature produced about risks, interventions, the differences in socio-economic, ethnic and geographical factors **Aspect three** Draft outline for monitoring and evaluation plan **Aspect four** Subsequent forum that consisted of health care professionals, municipal executives and academics approved starting document which provided a framework for the problem analyses, the strategic plan and the envisaged organisational and political form of the municipal programme
Theory	Not reported but DoHAD mentioned in references about the preconception care aspect (Barker)
Target population(s)	Women and partners planning pregnancy Pregnant women Women giving birth Women with a new baby Families with children
Change goals	1. To help parents prepare for pregnancy and improve their health: **Yes** 2. To improve access to high quality woman-centred care from early pregnancy: **Yes** 3. To strengthen the provision of safe, evidence-based birth options: **Yes** 4. To support transition from postnatal care to parenthood: **Yes**
References	Denktaş S, Bonsel GJ, Van der Weg EJ, et al. An urban perinatal health programme of strategies to improve perinatal health. Maternal and Child Health Journal 2012;16(8):1553-58.
Note	This was a pilot program for the Healthy Pregnancy 4 All programme

Key findings from Ready for a Baby program

Characteristic	Details
Program name	Ready for a Baby Urban Perinatal Health Program
Details of evaluation	*An initial design for the overall evaluation is described*: • Developments will be monitored across the city over a number of years • Project-based evaluations will be carried out. • Baseline measurements using registered data started pre -launch • Additional information will be collected by means of random surveys. • Similar measurements will be collected annually for the next 10 years and reported in a "perinatal Atlas of Rotterdam".
Outcomes/Impact	**NO EVALUATION YET planned short-term outcomes (pregnancy to 6 weeks after birth)** **Primary outcomes:** - Preterm birth - Small for gestational age - Perinatal Mortality
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported **Care Provider Outcomes** Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	

Key characteristics of the MAMAACT study

Characteristic	Details
Program name	MAMAACT study
Lead organisation(s)	Funded by a grant from the Danish Council for Strategic Research (Grant number 0603-00445B)
Country and type of health setting	Denmark (at Hvidovre Hospital, the largest maternity ward in Denmark) Hospital
Program design and duration	Based on needs analysis, the research group drafted potential activities, including individual level (migrant women) and societal level (health system). The study was to be implemented at the largest maternity ward in Denmark (where 22% of delivering women were first- or second-generation migrants). A project group with the leading ANC midwives was organized to assure contextual relevance, ownership and intervention fit. We met regularly with the project group to discuss and adjust project development. How the study activities (input) were expected to lead to the project outcomes were drafted as a programme theory. Although the study was designed to address the needs of migrant women, it was decided to include all women no matter the origin, because we considered it beneficial for all. Developed educational material (in a folder) and a smartphone app, and translated into informal language in six languages (Arabic, Persian, English, Somali, Turkish and Urdu). Developed a 5-h training session for the midwives conducting ANC and answering the emergency phone at the maternity ward (create awareness about the increased risk of poor reproductive outcomes among some migrants and the mechanisms behind, to strengthen the skills of intercultural communication in care provision, to know and manage the MAMAACT folder and app, and finally to know and understand the own implementing role of the MAMAACT project). Implemented 2014-2015
Context for the initiative	In 2012 in Denmark, the SULIM project was initiated to improve the knowledge for developing and implementing preventive initiatives for migrants across various institutional settings taking a lifecourse approach covering health in different phases of life. One component addressed perinatal health, including an intervention for improved reproductive health (the MAMAACT study).
Formative research	Conducted a needs assessment – consisting of studies to understand the reproductive health patterns among migrant women in Denmark ; assessment of the organization of the midwife-based ANC for migrant women in Denmark; a qualitative study on the perception of migrant women regarding pregnancy and childbirth and their experiences with the Danish ANC; investigated perceptions of health professionals and insight into the context of ANC provision with semi-structured qualitative interviews and by observing ANC visits at midwives, the first ANC visit at GPs, home visits with a visiting nurse and a mothers group, all located in areas with high density of migrant residents.
Theory	Not reported
Target population(s)	Pregnant migrant women
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Villadsen SF, Mortensen LH, Andersen AM. Care during pregnancy and childbirth for migrant women: How do we advance? Development of intervention studies--the case of the mamaact intervention in denmark. Best Pract Res Clin Obstet Gynaecol 2016;32:100-12. Villadsen SF, Mortensen LH, Morrison CH, et al. Improved response to warning signs among pregnant migrant women in denmark: A feasibility studysarah fredsted villadsen. European Journal of Public Health 2015;25(suppl_3):ckv170.013-ckv170.013. SULIM Research Project - Towards sustainable healthy lifestyles interventions for migrants. Mamaact – ethnic equality in maternal and child health [Available from: http://sulim.ku.dk/mamaact/ accessed 22 May 2018.

Key findings from the MAMAACT study

Characteristic	Details
Program name	MAMAACT study
Details of evaluation	MAMAACT implemented at maternity ward where the study was implemented, and in 2 of the 4 geographically separated ANC clinics. The other 2 clinics were control clinics. Evaluation assessed the feasibility of the study, and acceptability among the midwives and migrant women. However, also a quantitative evaluation of outcomes regarding the knowledge of warning signs and perceived actions, using a before-and-after comparison of the intervention clusters relative to the control clusters.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Not reported
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Process evaluation Preliminary results show that the standardized organization of ANC was a challenge for conducting diversity-sensitive care. Among the midwives, increased reflection on cultural diversity was initiated and welcomed. Insufficient interpretation services were a concern. The folder gained popularity as the midwives became more familiar with it. The pregnant women evaluated the folder and app positively. Summary - The MAMAACT study was a feasible and acceptable strategy that has the potential to improve the cross-cultural communication and response to warning signs in routine ANC.
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Keeping Childbirth Natural and Dynamic (KCND)

Characteristic	Details
Program name	Keeping Childbirth Natural and Dynamic (KCND)
Lead organisation(s)	NHS Scotland
Country and type of health setting	Scotland, national program Midwife led care program
Program design and duration	National steering group, led by Chief nurse for Scotland. 3 components: appointment of consultant midwife in each district, multiprofessional care pathways, midwife led care. To each district to show commitment and to tailor intervention to each site, a consultant midwife was appointed Introduced in 2007, over 3 years
Context for the initiative	To promote midwife led care to decrease birth interventions and increase satisfaction
Formative research	The Scottish Government maternity care policy over 20 years had endorsed pregnancy and childbirth as normal life events and recommended midwife-led care for healthy pregnant women, with provision of care tailored to risk and evidence informed practice. However, Interventions unsupported by evidence had become embedded in practice, in particular, routine use of intrapartum electronic fetal monitoring (EFM) and routine admission EFM, and the rate of caesarean section had reached 30% in some hospitals.
Theory	Not reported
Target population(s)	Healthy pregnant women
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Cheyne H, Abhyankar P, McCourt C. Empowering change: Realist evaluation of a scottish government programme to support normal birth. Midwifery 2013;29(10):1110-21.

Key findings from the Keeping Childbirth Natural and Dynamic (KCND)

Characteristic	Details
Program name	Keeping Childbirth Natural and Dynamic (KCND)
Details of implementation	Consultant midwife appointed to each district to show commitment an tailor intervention to each site
Details of evaluation	Realist evaluation: 1. semi-structured interviews and focus groups with program leaders from each district 2. multi-case study, including case record audit 3. overall analysis/summary
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth** Increase in number of low risk women with no labour intervention Increase in no use of routine electronic fetal monitoring for low risk women
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Commitment mechanism was important- local program champions using strategies tailored to context (subtle strategies in favourable contexts and tough approaches in unfavourable contexts). Successful implementation depended on context's readiness to change, existing models of care, relationships among professional groups, and stakeholders' attitudes.
	Inhibitors KCND was seen as an initiative for and by midwives. Acknowledging midwives lead role created dissatisfaction with service providers, and raised concerns that GPs may withdraw from maternity care.
Any other relevant information	Not reported

Key characteristics of the Indigenous prenatal and infant-toddler health promotion programs

Characteristic	Details
Program name	Health promotion programs with positive impacts on prenatal, infant or toddler health outcomes
Lead organisation(s)	Realistic review (review article) This study was initiated as part of an Indigenous knowledge network focused on enhancing public health and Indigenous knowledge sharing regarding Indigenous infant, child and family health between academic researchers, policy makers, program managers and front line practitioners. A key network activity was to conduct an international review of Indigenous parenting and infant-toddler health promotion programs in Australia, Canada, Hawaii, New Zealand, and the United States.
Country and type of health setting	Canada – indigenous populations Health promotion programs
Program design and duration	The aims of this review: 1. identify Indigenous prenatal and infant-toddler health promotion programs in Canada that demonstrate positive impacts on prenatal or child health outcomes. 2. understand how, why, for which outcomes, and in what contexts Indigenous prenatal and infant-toddler health promotion programs in Canada positively impact Indigenous health and wellbeing. Systematically searched computerized databases for published program evaluations as part of our international systematic review in June 2010. We updated our search for Canadian programs in March 2013 and January 2015
Context for the initiative	Adequate and appropriate Indigenous community engagement and participation has emerged as a policy imperative in Indigenous health research, policy, programs and services in Canada over the past two decades. Key documents supporting this approach include the Report on the Royal Commission on Indigenous Peoples, the Health Commission of Canada Report "Understanding and Improving Indigenous Maternal and Child Health in Canada", the United Nations Declaration on the Rights of Indigenous Peoples and the updated Tri-Council Research Guidelines.
Formative research	Despite this marked health inequity and sizeable program response, there is a gap in the literature that systematically identifies, documents and evaluates the effectiveness of Indigenous prenatal and infant-toddler health promotion programs in Canada. Evidence indicates that health promoting approaches effective in non-Indigenous contexts will not necessarily be effective in Indigenous contexts and point towards a need for messaging and approaches that reflect local Indigenous systems of health knowledge and practice. A synthesis of the evidence regarding program effectiveness specific to Indigenous contexts is therefore urgently required. In addition to the classic review of program effectiveness, a realist inquiry into how, why and in what contexts programs are working is also extremely relevant for ongoing policy and practice.
Theory	Not reported
Target population(s)	Indigenous parenting and infant-toddler health promotion programs in Canada, focused on culture-based Indigenous parenting programs and Indigenous prenatal, infant, and toddler health promotion programs. Articles and program reports were included if they evaluated a prenatal or child (age six or under) health promoting program, as well as health promotion programs focused on women of childbearing age, in an Indigenous population.
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Smylie J, Kirst M, McShane K, et al. Understanding the role of indigenous community participation in indigenous prenatal and infant-toddler health promotion programs in canada: A realist review. Social Science & Medicine 2016;150:128-43.

Key findings from Indigenous prenatal and infant-toddler health promotion programs

Characteristic	Details
Program name	Indigenous prenatal and infant-toddler health promotion programs
Details of implementation	Not reported
Details of evaluation	Programs in Canada that demonstrate positive impacts on prenatal or child health outcomes.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** 11/20 programs identified demonstrated positive impacts that were deemed to be of at least moderate clinical impact. Six programs documented relatively minor health outcome changes and the remaining three programs were not linked to any positive health impacts. Evaluated outcomes included: breastfeeding, prenatal care utilization, child oral health, child/family respiratory outcomes, child/family nutrition, physical activity and healthy lifestyle knowledge, birth weight, family violence, and child development. Specific results by outcome not reported in detail. **Intermediate-term outcomes (occurring 6 weeks to 1 year after birth)** Not reported **Long term outcomes (measured 1 year or longer after birth)** Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Realist review: review found a middle range theory of Indigenous community investment-ownership-activation as an important causal pathway linked in a cross-cutting manner to successful Indigenous prenatal and infant toddler health promotion programs. Programs that built in local Indigenous community investment and thus achieved a sense of local community program ownership and subsequent sustained local program participation were successful in positively impacting a diverse range of prenatal and child health outcomes across a range of Indigenous populations and settings including: birth outcomes; access to pre and postnatal care for urban Indigenous women involved in substance use; street drug use during pregnancy for both urban and on reserve Indigenous women; breast-feeding initiation and duration; childhood tooth decay; infant nutrition; child development; and child knowledge and use of Indigenous languages and cultural traditions. Our study also demonstrates that programs with evidence of Indigenous community investment-ownership-activation are more likely to have significant positive program outcomes compared to those without.
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Healthy Mother Healthy Baby program

Characteristic	Details
Program name	Healthy Mother Healthy Baby
Lead organisation(s)	Saskatchewan Health Authority.
Country and type of health setting	Canada Healthy Mother Healthy Baby is a community based program within the Saskatchewan Health Authority, aiming to promote optimal pregnancy outcomes and healthy lifestyle choices. The program works collaboratively with other programs within the Saskatchewan Health Authority such as Population and Public Health, Primary Health, Maternal and Children's Services, Mental Health and Addictions, Food for Thought, and KidsFirst.
Program design and duration	This community based program offers information, education, advocacy, and support in clients' homes, Saskatoon Collegiates, West Winds Primary Health Centre, and other venues. The program offers milk, prenatal supplements and fruit and vegetable vouchers for pregnant teens and women whose diets are insufficient and whose incomes are inadequate to meet basic daily requirements. The program strives to be respectful and culturally sensitive to its clients and their families. Healthy Mother Healthy Baby works collaboratively with many other programs within the Saskatchewan Health Authority such as Population and Public Health, Primary Health, Maternal and Children's Services, Mental Health and Addictions, Food for Thought, and KidsFirst.
Context for the initiative	To promote optimal pregnancy outcomes and healthy lifestyle choices by providing support and education to individuals in the context of their family and community.
Formative research	Not reported
Theory	Not reported
Target population(s)	The program is designed for pregnant teens and women living in the community with risk factors such as: food insecurity, low income, isolation, substance use, inadequate housing, mental health issues, abusive relationships, pregnant and parenting students attending the Saskatoon Collegiates.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: yes (aims to improve health during pregnancy) 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Unclear
References	Saskatchewan Health Authority. Healthy Mother Healthy Baby. https://www.saskatoonhealthregion.ca/locations_services/Services/Healthy-Mother/Pages/Home.aspx
Not evaluated	

Key characteristics of the 1st Five Healthy Mental Development Initiative - Iowa

Characteristic	Details
Program name	1st Five Healthy Mental Development Initiative
Lead organisation(s)	Iowa Department of Public Health
Country and type of health setting	USA, Iowa - Local child health agencies operating in 88 Iowa counties impacting approximately 136,971 children from birth to 5 who are seen for well-child exams. Pending funding, the intent is to expand the 1st Five Initiative throughout Iowa. Community care – medical/physician practices and public service providers
Program design and duration	Children are assessed for social-emotional development and family risk factors, to identify children at risk for developmental concerns that, if left untreated, would play out later in life. Step 1. The primary care provider performs standardized surveillance for social/emotional development, family stress and parental depression. Step 2. When a medical provider discovers a concern, the provider makes a referral to a 1st Five coordinator. Step 3. The coordinator contacts the family to discuss available resources to meet the family's needs. Often other issues are identified and additional referrals are made. For every one medical provider referral to 1st Five, 2-3 additional referrals are made when the care coordinator contacts the family. The coordinator works extensively with families to assure follow-up and access to services. Step 4. The coordinator provides feedback to the referring provider on the status of the referral. Began in 2007, still operating
Context for the initiative	Current brain research indicates that social and emotional development in young children is as important as physical, cognitive, and language development. A significant portion of young children are not receiving adequate developmental surveillance and screening and many providers are not aware of available resources to refer families to, even when a concern is identified. 1st Five provides the necessary links to up-to-date community-based resources that match the needs of the family and child.
Formative research	Not reported
Theory	Not reported
Target population(s)	All children
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes *(*Starting age not clear)*
References	Iowa Department of Public Health. 1st five healthy mental development initiative [Available from: https://idph.iowa.gov/1stfive accessed 3 May 2018.
Not evaluated	

Key characteristics of the Integrated Maternity and Child Health Services Pilot Evaluation NZ

Characteristic	Details
Program name	**Integrated Maternity and Child Health Services Pilot Evaluation NZ**
Lead organisation(s)	NZ Ministry of Health and 3 district health boards Nelson Marlborough DHB (all communities in the region) Counties Manukau DHB (Otara communities) Lakes DHB (Rotorua, Turangi and Taupo communities).
Country and type of health setting	New Zealand. Mixture of urban and rural. Disparity in outcome for disadvantaged populations Lead Maternity Carer = midwife for pregnancy and delivery – at home or in hospital GP
Program design and duration	To learn more about what works and what benefits can result from integrating maternal and child health services, the Ministry of Health (MoH) funded demonstration pilots of integrated services at three District Health Boards (DHBs): Each DHB developed their own approach to integration to meet the needs of their communities. The evaluation sat alongside the pilots. The evaluation considered the aims of each pilot and the community and provider context in which they were developed. The purpose of the evaluation was to inform MoH and the integration pilot working groups on the progress and effectiveness of the pilot activities and to develop a body of knowledge on how to create a seamless system of care to improve the consumer experience, access, and health outcomes with regard to maternal and child health services. 30 January 2014 to 1 February 2016.
Context for the initiative	There is evidence in the literature that integrated services have benefits for agencies, service providers and consumers. Consumers want health services that meet their needs, are connected and well-integrated. They want to experience 'one health system' regardless of service structure, funding or governance. Integration of services such as maternal and child health services is an increasingly important goal for Government because it can improve the efficiency and quality of services and outcomes for people using the services.
Formative research	Each DHB set out their aims and priority areas to be tackled for their integration pilots 1) The Nelson Marlborough pilot aimed to achieve regional change that would improve maternal and child health services for providers and women in the region. **Aspect two** 2) The Counties Manukau pilot aimed to reach all providers, women and children in Otara. It was developed to meet the identified needs of the Otara locality with its predominantly Pacific and Māori population. Many of the community's families have deeprooted and complex health and social needs. Service delivery is also complex with four primary health organisations (PHOs) and a number of NGOs delivering a range of health and social services to the community. **Aspect three** 3) The Lakes DHB overarching outcome for the integration project is to have integrated and coordinated maternal and child health services that support improved health outcomes and reduced inequalities in the target population group
Theory	A generic logic model was developed for the integrated services project, based on information from a literature review (Figure 1 p 12 of report). The logic model sets out the inputs, activities and outputs for each stakeholder group (central government agencies, District Health Boards (DHB), service providers and consumers). Each is considered under the following categories: governance and leadership; management and planning; systems; communication; workforce development; relationships; and quality improvement
Target population(s)	Pregnant women, children, their families and their health care providers. These 3 DHBs include a range of different populations.
Change goals	1. To help parents prepare for pregnancy and improve their health: **Yes** 2. To improve access to high quality woman-centred care from early pregnancy: **Yes** 3. To strengthen the provision of safe, evidence-based birth options: **Yes** 4. To support transition from postnatal care to parenthood: **Yes**
References	www.malatest-intl.com Outcomes Evaluation Report – April 2016

Key findings from Integrated Maternity and Child Health Services Pilot Evaluation NZ

Characteristic	Details
Program name	**Integrated Maternity and Child Health Services Pilot Evaluation**
Details of implementation	A formative evaluation provided information to help with pilot site planning Three process evaluations provided feedback on progress including evaluation of different pilot site initiatives The final outcomes evaluation that aimed to demonstrate outcomes achieved as a result of the pilots.
Details of evaluation	• Quarterly interviews with the project manager(s) and key members of the working groups • Review of monthly and quarterly progress reports and newsletters provided by the pilot sites • Site visits • Interviews with representatives from the governance groups • Evaluation of different initiatives developed by the pilot visits – including site visits, interviews with providers and consumers, and surveys of providers and consumers • Pre- and post-surveys of providers in Otara and Nelson Marlborough • Analysis of MoH data sets.

Outcomes/Impact

Outcomes measures were developed and agreed with the regional teams. The intention was that outcomes measures would be based on administrative data, reporting that was already in place and new data to be sourced from local organisations Data received from MoH included:

- National Maternity Collection: unit records with domicile codes, monthly from January 2010 to December 2015 (final half of 2015 is preliminary data only and subject to change)
- Well Child/Tamariki Ora (WCTO): unit records for all pilot site areas (with domicile codes), from January 2013 to December 2015
- Well Child/Tamariki Ora (WCTO) supplementary analysis of timeliness of referral to WCTO provider and age at first core contact (analysis courtesy of MoH)
- Number of pregnant women offered advice to quit smoking (provided by MoH Smokefree team): DHB quarterly data from July 2013 to December 2015
- Number of preventable hospitable admissions (provided by MoH National Health Board): unit level data with domicile code, monthly from January 2010 to December 2015
- Newborn enrolment with PHO by 3 months (provided by MoH Business Services): DHB level, quarterly from January 2013 to December 2015
- Immunisations up to date at 8 months and 24 months (provided by MoH National Immunisation Register): DHB level, quarterly from January 2010 to December 2015.

Outcome	DHB1	DHB2	DHB3
Engagement with LMC by 12 weeks LMC registration	There has been a slight increase over time in registration by 12 weeks (74% in Q4 2013 to 78% in Q4 2015), consistent with the national change Rate of registration with LMC within first trimester around 10% above national average.	Fewer late registrations (29% registering in third trimester or after birth at the end of 2013; none in Q4 of 2015 and an increase in the proportion registering within the first trimester (increasing from 21% in Q4 2013 to 44% in Q4 2015), but rates remain lower than the DHB and national rates (72% at end of 2015).	Reduction in late registrations with a LMC in Turangi (20% of registrations in 3T in Q4 2013; 6% in Q4 2015); and earlier registration at Awhi House (mean GA reduced from 22.4 in first year (2014) to 16.7 in 2015). Rate of registration with LMC by 12 weeks in Western Heights shows increasing trend in line with Lakes and national trend
Maternal tobacco use at two weeks	Provision of advice to quit smoking high (92-100%) and smoking at two weeks lower than national average (fluctuating around 10% but no declining trend).	Fluctuating rate of smoking at two weeks; decreasing trend is evident, although this is also observed more widely across the DHB.	Approximately half (49%) of the total identified as smokers at Awhi House and Kia Puawai were recorded as offered NRT. decreasing trend in proportion smoking at two weeks
Reduction in proportion of babies born with low birth	Average birth weights slightly above national	slightly higher than DHB and national average (3.5kg in Q4 of 2013 and Q4	The number of babies born with low birth weight (<2.5kg)

Characteristic	Details			
	weight/pre-term births	level and no change evident	2015 in Otara, compared to 3.4kg national average). Proportion with low birth weight (<2.5kg) overall appears to be decreasing.	consistently low in Turangi, Genreally increased trend cons with nat average
	Exclusively or fully breastfed at two weeks	Breastfeeding at two weeks and at discharge from LMC consistent with national rate at around 79% and 72% respectively at the end of 2015.	(71% in Otara, compared to 75% for Counties Manukau and 79% nationally at the end of 2015. breastfeeding at discharge from LMC (58% compared with 74% nationally) 2015	100% breastfeeding exclusively/fully at birth in final quarter of 2015 at Awhi House. 88% BF exclusively/fully at birth at Kia Puāwai across all reporting periods.

Characteristic	Details
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth)

Enrolment with a PHO	Rate of enrolment with PHO by three months in Nelson Marlborough follows and slightly exceeds the national pattern (70% and 67% respectively at the end of 2015)	Data only available at DHB level and consistent with national pattern although rates slightly lower for Counties Manukau at 63% at the end of 2015, compared to 65% nationally.	Nearly all Hapū Māmā clients who gave birth in 2015 at Kia Puāwai had their child enrolled with a GP (62, 93%) and WCTO (65, 97%).
WCTO engagement	Increasing trend in rate of notification to WCTO provider, (92% at the end of 2015) consistent with national trends. Improvement in timeliness of referral to WCTO provider in latter half of 2015.	increased since the start of the pilot in Otara (55% at the end of 2013 to 88% at the end of 2015).	Notification of birth with WCTO provider reached 100% in Turangi and Western Heights from Q4 2014 to Q3 2015 inclusive. (Data on core contacts inconclusive – small sample).
Immunisations up to date at eight months	Increasing trend in immunisation rates follows national trend, but slightly lower at 92% in Nelson Marlborough at the end of 2015, compared to 94% nationally.	increased (90% Q4 2013 to 95% Q4 2015) in line with the national trend to exceed the national average from Q3 2014 (at around 94%). Rates of immunisation in the most deprived areas of Counties Manukau have increased from 86% Q4 2014 to more closely align with overall DHB rates in Q4 2015 (94%).	Immunisation rates at eight months increased in the most deprived areas of Lakes (dep 9-10) from 88% in Q4 2013 to 94% in Q4 2015. Increasing trend in immunisation rates in the most deprived areas (i.e. dep 9-10) in Lakes exceeds national trend (such that rates in Lakes exceed national rates throughout 2015).

	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported

Characteristic	Details
	Other outcomes Care Provider Outcomes Not reported
Factors which influenced outcomes	**Facilitators** • Hand-held pregnancy info cards • Communication and relationships between health providers • Midwifery directory • Pregnancy packs • Consumer voice/feedback • Governannce guidance • Multidisciplinary representation • Systems that support integration • Workforce development • QI methodologies and training
	Inhibitors • A lack of infrastructure • Funding • The lack of shared electronic records/ IT systems to support integration • Interagency agreement/privacy • Opportunities for collaboration/communication
Any other relevant information	Not reported

Key characteristics of the Aboriginal and Torres Strait Islander maternal and child health systematic review 2014

Characteristic	Details
Program name	Aboriginal and Torres Strait Islander maternal and child health SR
Lead organisation(s)	Funded by James Cook University
Country and type of health setting	Australia Community controlled & community-based programs
Program design and duration	Systematic review of literature describing and evaluating ATSI maternal and child health (MCH) programs and services in Australian primary health care settings from 1993-2012. Primary health care responses included in this review are first level health care services providing antenatal and postnatal care, maternal and child care. These primary care responses, operating out of mainstream community health services and Aboriginal Community Controlled Health Services, are increasingly being recognised as the preferred approach for effecting MCH outcomes. Antenatal and postnatal care were identified as main intervention types (61%); 17% identified integrated or continuum of care model as main intervention. Most common intervention types were health promotion/ education (70%); topics of health promotion included nutrition, breastfeeding, immunisation, infant care and accessing services. Other common interventions included home visiting (35%), antenatal and postnatal check-ups and support (22%), transport services (17%). Labour/birth support (135), assistance making or attending appointments (13%), pregnancy screening (9%) counselling/psychotherapy (9%). Referrals (9%) and training for Aboriginal midwives & health workers (9%). Publications 1993-2012
Context for the initiative	Indigenous people worldwide experience poor maternal & child health compared to non-indigenous populations. There is a lack of a quality evidence base to guide Indigenous health and wellbeing program globally, and particularly of intervention research focused on testing and analysing the effectiveness of potential solutions.
Formative research	In Australia, 2 reviews of ATSI maternal and child program reported outcomes such as improvements in antenatal attendance, decreased pre-term birth and improvements in infant birthweight. Herceg et al identified evidence gaps for key MCH issues, highlighted the lack of quality evidence for interventions, and stressed the need for high quality evaluations of programs. Herceg A. Improving health in Aboriginal and Torres Strait Islander mothers, babies and young children: a literature review. Canberra: Dept Health and Ageing 2005 Rumbold A., Cunningham J. A review of the impact of antenatal care for Australian indigenous women and attempts to strengthen these services. Mat Child Hlth J 2008; 12:83-100
Theory	Not reported
Target population(s)	Antenatal and postnatal programs for Aboriginal & Torres Strait Islander population
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Jongen C, McCalman J, Bainbridge R, et al. Aboriginal and Torres Strait Islander maternal and child health and wellbeing: A systematic search of programs and services in Australian primary health care settings. BMC Pregnancy & Childbirth 2014;14:251.

Key findings from Aboriginal and Torres Strait Islander maternal and child health systematic review 2014

Characteristic	Details
Program name	Aboriginal and Torres Strait Islander maternal and child health SR
Details of evaluation	Systematic review of 23 ATSI MCH programs and services from, 1993-2012; 14 of the publications reported program outcomes and/or effects
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Increase in antenatal attendance (6/23 pubs); increase in infant birthweight (5/23); decrease or lower proportion of preterm births (4/23); earlier antenatal attendance (4/23); decrease or lower proportion low birth weight (3/23). Decreased perinatal mortality (3/23) Lower caesarean rates
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) For example, if breastfeeding at 3 months was reported, it would go here Improved breastfeeding rate; improved nutritional status, such as decreased rates of stunting and malnutrition. Higher rates of immunisation.
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Positive views and/or experiences of the service from service users.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Preconception Health Interventions delivered in Public Health and Community Settings

Characteristic	Details
Program name	Preconception health interventions delivered in public health and community settings
Lead organisation(s)	Systematic review
Country and type of health setting	The 12 studies from 3 countries (8 USA, 3 Australia, Italy) identified, 1994-2013.
Program design and duration	Preconception health interventions delivered in public health and community settings
Context for the initiative	To develop a comprehensive, standardized approach to preconception health promotion and care in Canada, the effectiveness of preconception health interventions on reproductive, maternal, and child health outcomes needs to be evaluated.
Formative research	Ever-growing research suggests that preconception health affects reproductive, maternal, and neonatal health outcomes.
Theory	
Target population(s)	Women or men of reproductive age (15–45 years)
Change goals	1. To help parents prepare for pregnancy and improve their health: Yes 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: No
References	Brown et al., Preconception health interventions delivered in public health and community settings: a systematic review. Can J Public Health, 2017;108(4):e388-e397

Key findings from Preconception health interventions delivered in public health and community settings

Characteristic	Details
Program name	Preconception health interventions delivered in public health and community settings
Details of evaluation	Systematic review, included RCTs and quasi-experimental, pre–post, and time series designs. Study designs included RCTs (n = 5), quasi-experimental studies (n = 1), pre–post studies (n = 5) and interrupted time series (n =1) 12 studies from 3 countries (8 USA, 3 Australia, Italy) identified, 1994-2013 Study outcomes: knowledge increase, behaviour change, and health outcomes. Included 12 studies (RCTs=5)
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Most of the studies (n = 9) examined individual's knowledge of preconception health and most reported an increase in knowledge. Four studies examined self-reported change related to a specific health behaviour (eg using folic acid supplements, updating vaccinations, and reducing smoking and alcohol consumption) and all reported significant positive changes in behaviour. Only 1 study examined a health outcome – a statistically significant decrease in the prevalence of neural tube defects following a folic acid health promotion intervention.
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Other outcomes Methodological quality of existing research is poor. Using the EPHPP quality assessment tool, the global rating for 11 of the studies was weak.
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	

Key characteristics of Group Prenatal Care

Characteristic	Details
Program name	Group antenatal care, predominately Centering Pregnancy Program (12/14 studies)
Lead organisation(s)	Systematic review and meta-analysis from Washington university
Country and type of health setting	US (12), Canada (1), Iran (1)- mostly urban areas Various antenatal care settings (eg community and hospital-based health clinics/ centres, hospitals)
Program design and duration	CenteringCare program – 5-12 patients meeting with obstetric provider and facilitator for 2 hour session every 2-4 weeks throughout pregnancy. Various studies from 2001-2014
Context for the initiative	Patients as active participants in their care, involving: assessment, education, support. Focuses on nutrition, exercise, social support, health self-awareness, relaxation techniques.
Formative research	Prenatal care is widespread, but efficacy unknown. Recommended schedule of prenatal care throughout pregnancy, most women spend <2hours with obstetric provider throughout pregnancy. Minimal time to address pregnancy-related issues. (based on anecdotal evidence) **Aspect two etc as needed** Conflicting evidence re. impact of group care compared with traditional care on perinatal outcomes
Theory	Not reported
Target population(s)	Pregnant women – various – some low SES, African American, nullips; others general population, others matched by age, race, parity
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: 4. To support transition from postnatal care to parenthood: No
References	Carter EB, Temming LA, Akin J, et al. Group prenatal care compared with traditional prenatal care: A systematic review and meta-analysis. Obstetrics and Gynecology 2016;128(3):551-61. Carter EB, Barbier K, Sarabia R, et al. Group versus traditional prenatal care in low-risk women delivering at term: A retrospective cohort study. Journal of perinatology : official journal of the California Perinatal Association 2017;37(7):769-71 (low risk, term group) Mazzoni SE, Carter EB. Group prenatal care. American Journal of Obstetrics and Gynecology 2017;216(6):552-56.

Key findings from Group Prenatal Care

Characteristic	Details
Program name	Centering pregnancy
Details of evaluation	Systematic review of RCTs and observational studies comparing group prenatal care to traditional antenatal care
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** No difference in preterm birth, overall Lower rate of low birthweight, overall But, not for RCTs (0/4 studies, 0.92;0.73-1.16) No difference in admission to NICU (2/7 studies, 0.91; 0.68-1.22) No difference in breastfeeding initiation (1/
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis For African American women: no difference in preterm birth for group care compared with traditional care (significant for RCT)
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Provision of social support, coping strategies, stress reduction for low SES groups Motivated population that participate in program Established group prenatal program Providers trained by Centering Healthcare Institute Institutional buy-in and commitment Local Champion
	Inhibitors Physical space, childcare, scheduling, adequate number of women at same gestation, training of facilitators, offering in other languages, cost of program,
Any other relevant information	No

Key characteristics of the Veterans Affairs Maternity Care Coordinator Program

Characteristic	Details
Program name	Veterans Affairs Maternity Care Coordinator Program (VISN I MCC)
Lead organisation(s)	Veterans Affairs
Country and type of health setting	New England, USA 7 VA Medical Centres
Program design and duration	Centralized, full-time nurse and a social worker to provide telephonic maternity care coordination for all pregnant veterans enrolled in VA care across seven VISN 1 facilities. MCC staff members coordinated maternity, medical, and mental health care services for women veterans. Team-based approach to meet clinical and psychosocial needs during the pregnancy and postpartum period An initial telephone assessment of all enrolled pregnant veterans included demographic characteristics, pregnancy risk, current health and mental health conditions, social support systems; and then follow-up call every 2 months throughout pregnancy to assess clinical, social and psychosocial care needs, and facilitate ongoing care between VA and non-VA care providers and specialists and specialty services that required care coordination including maternal fetal specialists, endocrinologists, chiropractors, mental health practitioners, and pharmacists. Also developed local resource guides and follow-up of women up to 12 weeks postpartum to assess the health of the mother and the infant, and refer women and their infants to medical and psychosocial services in the community as needed. 1 full-time nurse and 1 full-time social worker Evaluation: October 2014- May 2015.
Context for the initiative	To overcome VA issued Handbook 1330.03, VHA Maternity Health Care and Coordination (VA, 2012) that stipulates each VA facility must have an MCC. Given small number of pregnant veterans at some facilities, a centralized, telephonic MCC program was developed for all pregnant veterans enrolled in VA care.
Formative research	None provided
Theory	Not reported
Target population(s)	All pregnant veterans enrolled for care in the VISN 1 MCC program
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Mattocks KM, Kuzdeba J, Baldor R, et al. Implementing and evaluating a telephone-based centralized maternity care coordination program for pregnant veterans in the department of veterans affairs. Women's Health Issues 2017;27(5):579-85

Key findings from Veterans Affairs Maternity Care Coordinator program

Characteristic	Details
Program name	Veterans Affairs Maternity Care Coordinator Program
Details of evaluation	Research staff not involved in MCC program conducted telephone interviews with 103 women who had participated in the program during their pregnancy at 6-8 weeks postpartum. The survey assessed satisfaction and use of MCC services, prenatal education classes, and infant and maternal outcomes (e.g., newborn birthweight, insurance status, maternal depression) using both closed-ended and open-ended questions.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Infant outcomes (e.g., preterm birth, birthweight) Maternal BF, depression, use of postnatal services
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) None reported
	Long term outcomes (measured 1 year or longer after birth) None reported
	Satisfaction satisfaction and use of MCC services Not reported
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Regular calls to pregnant veterans to assess progress of their pregnancy and assist them with care coordination with VA and non-VA services, to ensure comprehensive maternity, medical, and mental health care services. contact with veteran during the postpartum period, assess the health of the mother and infant, and refer women and their infants to medical and psychosocial services in the community as needed.
	Inhibitors
Any other relevant information	

Key characteristics of giving women their own case notes to carry during pregnancy (systematic review)

Characteristic	Details
Program name	Giving women their own case notes to carry during pregnancy (systematic review)
Lead organisation(s)	Cochrane Database of Systematic Reviews
Country and type of health setting	4 trials included (2 conducted in UK, 1 in Australia, 1 in Mongolia). Summary of health setting here - 3 trials in public health sector of UK, Australia (I UK- disadvantaged population, 1 UK in rural area, 1 Australia in urban teaching hospital) - 1 trial- rural Mongolia
Program design and duration	Program/intervention – Recruitment: first antenatal 'booking' visit. Outcome: self-administered questionnaires at birth, Mongolia RCT- 1-month postpartum 3 trials: intervention groups were given complete antenatal records to carry and control groups were given a card with much abbreviated information and no clinical follow-up or clinical progress information. 1 trial: women in the intervention group carried a handbook to log maternal health, pregnancy and delivery information as well as child health measures, such as immunisation and growth charts; women in the control arm of this trial received standard antenatal care, and the intervention was rolled out in control clusters after nine months. As well as duration include actual month/year that it began and ended (or was evaluated) Included trials were published between 1987 and 2015
Context for the initiative	Woman-carried records are important when women move from one facility to another during pregnancy. This includes a summary of their notes and pregnancy history and progress in a woman-carried card, which they bring with them for each visit. The objective is to have easy access to each pregnant woman's medical record and also to reduce the administrative costs involved in keeping and retrieving traditional hospital records. An indirect benefit is that the quality of care will improve as communication between the woman and the caregiver, and the woman is better able to participate in the information exchange.
Formative research	UK study found women want more control over their care during pregnancy and labour. Another study showed women carrying their own case notes are empowered by facilitating greater participation in their medical care (Homer 1999), and improve availability of records when needed and reduce costs.
Theory	Not reported
Target population(s)	Women in pregnancy or in the first 4 weeks post birth
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Brown HC, Smith HJ, Mori R, et al. Giving women their own case notes to carry during pregnancy. Cochrane Database of Systematic Reviews 2015(10)

Key findings from giving women their own case notes to carry during pregnancy (systematic review)

Characteristic	Details
Program name	Giving women their own case notes to carry during pregnancy (systematic review)
Details of evaluation	Systematic review of RCTs comparing women carrying case-notes versus very abbreviated notes or usual care. 4 randomised trials with 1,176 women included (2 trials in UK, 1 Australia, 1 Mongolia)
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Present findings/results by outcome [2] [3] (see excel for results) Secondary outcomes reported - Breastfeeding (2 RCTs) Smoking (2 RCTs)- no difference Epidural (1 RCT- not reported) Caesarean section (1 RCT- not reported) Perinatal death (2 RCTs) – no difference
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth)
	Long term outcomes (measured 1 year or longer after birth)
	Satisfaction Women's satisfaction with antenatal care- 2 studies
	Economic evaluation
	Relevant subgroups analysis
	Other outcomes - Women who felt in control (2 RCTs) - Women who wanted to carry case notes in subsequent pregnancy (3 RCTs)
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Overall, the quality of the evidence was graded as low to moderate. Women carrying their own case notes improved their sense of control and the availability of antenatal records, but insufficient evidence of additional effects such as health-related behaviours (smoking and breastfeeding), women's satisfaction and clinical outcomes.

Key characteristics of the alternative versus conventional institutional settings for birth review

Characteristic	Details
Program name	Alternative versus conventional institutional settings for birth
Lead organisation(s)	Cochrane Systematic Review
Country and type of health setting	Trials were included if the intervention included care during labour and birth in an alternative institutional birth setting. Antenatal and postnatal care may also have occurred in the alternative setting. Care may have been provided by the same group of caregivers, or by separate groups of caregivers in the alternative versus conventional settings.
Program design and duration	The majority of trials compared bedroom-like settings with conventional institutional labour wards. Five trials included at least some antenatal care in the alternative setting. All restricted access to women who were experiencing normal pregnancies.
Context for the initiative	
Formative research	Alternative institutional settings have been established for the care of pregnant women who prefer little or no medical intervention. The settings may offer care throughout pregnancy and birth, or only during labour; they may be part of hospitals or freestanding entities.
Theory	Not reported
Target population(s)	Pregnant women at low risk of obstetric complications.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: No
References	Hodnett ED, Downe S, Walsh D. Alternative versus conventional institutional settings for birth. Cochrane Database of Systematic Reviews 2012(8)

Key findings from the alternative versus conventional institutional settings for birth review

Characteristic	Details
Program name	Alternative versus conventional institutional settings for birth review
Details of evaluation	Included nine randomized or quasi-randomized controlled trials (11,503 women) with data that compared the effects of an alternative institutional birth setting to a conventional setting. *Primary objective*: effects on labour and birth outcomes *Primary maternal outcomes*: Spontaneous vaginal birth Maternal death or serious maternal morbidity, e.g. uterine rupture, admission to intensive care unit; septicaemia No analgesia/anesthesia for labour or birth Labour augmentation with artificial oxytocics Very positive views of intrapartum care. *Primary infant outcomes*: Perinatal death or serious perinatal morbidity *Secondary maternal outcomes*: Instrumental vaginal birth (forceps or vacuum) Caesarean delivery Postpartum haemorrhage Epidural analgesia Episiotomy *Secondary infant outcomes*: Admission to neonatal intensive care unit Five-minute Apgar score less than seven Perinatal mortality Any breastfeeding at six to eight weeks of age. *Secondary objectives* were to determine if the effects of care in alternative birth settings were influenced by: (a) whether the staff in the alternative setting were also part of the conventional maternity care staff (b) whether care in the alternative setting included more continuity of care provider than women experienced in the conventional hospital setting (c) whether the alternative setting was in a building that was geographically separate from the hospital (d) the architectural characteristics of the alternative setting *Planned subgroup analyses (for primary outcomes)*: type of alternative institutional setting location of alternative setting (in-hospital or freestanding birth centre) staffing model (separate staff for alternative setting or same staff who work in conventional labour ward setting) whether continuity of caregiver was a component of the care in the alternative setting
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Women randomized to care in an alternative birth setting were: more likely to labour and give birth without analgesia/anesthesia more likely to have a spontaneous vaginal birth no apparent effect on serious maternal morbidity/mortality less likely to have oxytocin augmentation of labour No difference in perinatal mortality and serious perinatal morbidity Secondary outcomes: Maternal - Women allocated to alternative settings were less likely to have epidural analgesia, instrumental vaginal birth and episiotomy, less likely to have caesarean birth and no apparent effect on postpartum haemorrhage. Infant - No apparent effect on babies' five-minute Apgar scores less than seven, admission to a neonatal intensive care unit or perinatal deaths. **Intermediate-term outcomes (occurring 6 weeks to 1 year after birth)** Results from one trial indicated that babies of women allocated to alternative settings were more likely to be breastfed at six to eight weeks. **Long term outcomes (measured 1 year or longer after birth)** Not reported

Characteristic	Details
	Satisfaction Three trials which measured women's views of their care had at least 80% follow-up. Those randomised to alternative care were more likely to prefer the same setting for a subsequent birth. Findings for involvement in the birth process, freedom to express feelings, support from midwives, and indicators of involvement in decision-making all either favoured those allocated to an alternative birth setting or suggested no differences.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes **Summary** - Hospital birth centres are associated with lower rates of medical interventions during labour and birth and higher levels of satisfaction, without increasing risk to mothers or babies. **Implications for practice**: Pregnant women should be informed that hospital birth centres are associated with lower rates of medical interventions during labour and birth and higher levels of satisfaction, without increasing risk to themselves or their babies. Decision-makers who wish to decrease rates of medical interventions for women experiencing normal pregnancies should consider developing birthing units with policies and practices to support normal labour and birth. It was not possible to examine the separate influences of types of alternative hospital settings or continuity of caregiver, and there were no trials of freestanding birth centres. There were no apparent differences in effects, based on whether the same or separate staff provided care in the alternative and conventional units. Thus those who wish to develop a alternative birth setting, and those who wish to use them, have little to go on when making decisions about the autonomy of the setting or its architectural features. These issues are critically important, in light of women's reports of greater satisfaction with alternative institutional birth settings, and the lower rates of interventions associated with alternative settings.
Factors which influenced outcomes	**Facilitators** Facilitators/ barriers – In the subgroup analyses, no apparent effects of whether the same or separate staff cared for women in the two settings on the likelihood of spontaneous vaginal birth, serious perinatal morbidity/mortality or serious maternal morbidity/mortality. It was not possible to draw conclusions in regard to women's views of their care.
	Inhibitors
Any other relevant information	

Key characteristics of telephone support for women during pregnancy and the first six weeks postpartum (systematic review)

Characteristic	Details
Program name	Telephone support for women during pregnancy and first six weeks postpartum (systematic review)
Lead organisation(s)	Cochrane Database of Systematic Reviews
Country and type of health setting	27 trials included (13 conducted in the USA, five in Canada, two in Australia, two in England and one each in Thailand, New Zealand, Italy, Zanzibar and Scotland). All but two were from a high-resourced setting. All of the trials examined telephone support versus usual care (no additional telephone support).
Program design and duration	Telephone support was introduced in pregnancy or in the first six weeks post birth, or both. It may, or may not, have extended from the antenatal to postnatal period. Interventions Telephone support may have occurred in any setting and was delivered by healthcare staff, peer supporters or using automated messaging. Many of the trials recruited women from high-risk groups (eg. at high risk of depression, or smokers) and the intervention was specifically designed to address the risk factor. 9 trials to support breast feeding, 8 recruited women post-partum 6 studies aimed to encourage women to quit smoking, or to prevent smoking relapse (3 in pregnancy, 1 post=partum, 2 both) 2 trials focused specifically on women at high risk of postnatal depression (1 in pregnancy and post-partum, 1 post-partum) 2 studies focused on women who were at high risk of preterm birth 1 trial recruited women at high risk of gestational diabetes 7 studies examined more general telephone support interventions (5 in pregnancy, 1 post-partum, 1 both) *Note: many of the included studies focussing on a condition (such as smoking or depression) would not have been eligible for this review). However the systematic review included all studies together.* Included trials were published between 1982 and 2012
Context for the initiative	Telephone interventions as part of health services and M-health (via mobile communication technologies, have grown in popularity, reaching those who, previously, may not have been reached. Telephones are now an integral tool in mother and health-professional communication.
Formative research	An earlier systematic review of telephone support for pregnant and postnatal women was published in 2008.
Theory	Not reported
Target population(s)	Women in pregnancy or in the first six weeks post birth, or both
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Lavender T, Richens Y, Milan SJ, et al. Telephone support for women during pregnancy and the first six weeks postpartum. Cochrane Database of Systematic Reviews 2013(7)

Key findings from telephone support for women during pregnancy and first six weeks postpartum (systematic review)

Characteristic	Details
Program name	Telephone support for women during pregnancy and first six weeks postpartum (systematic review)
Details of evaluation	Systematic review of RCTs comparing telephone support versus usual care (no additional telephone support). 27 randomised trials with more than 12,000 women included (13 trials in USA, 5 in Canada), 24 trials contributed to meta-analysis. Evaluation did not distinguish between trials aimed at specified conditions (such as depression, gestational diabetes) or trials with more general health support.
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Primary outcomes Maternal anxiety. No consistent evidence that telephone support reduces maternal anxiety during pregnancy or after the birth although anxiety outcomes were not easy to interpret (data were collected at different time points and using a variety of measurement tools). Secondary outcomes reported – *maternal* General health – the majority of women in both groups reported good general health Health service utilisation - overall, no strong evidence of differences between groups for health service utilisation (antenatal or postpartum). Much of the data for particular outcomes were derived from only one or two studies. Behaviour change a) smoking: Cotinine-validated smoking cessation in pregnancy - women receiving telephone support interventions were no less likely to be smoking at the end of pregnancy Self report by women themselves that they had stopped smoking at the end of pregnancy – no difference between groups Cotinine validated or self-reported smoking cessation (or non-relapse) no difference between groups b) breastfeeding: Results were inconsistent, No clear evidence that interventions had a positive effect on the number of women breastfeeding at six weeks postpartum although results were inconsistent between trials Secondary outcomes reported – *Infant* Preterm birth: a decrease in number of preterm births but not statistically significant Neonatal/infant mortality: 1 trial - more deaths among group where women received telephone support but not statistically significant No difference in mean birthweight, nor in risk of low BW (<2500g) infant Major neonatal/infant morbidity – higher among those with phone support, but no stat significant difference Fewer admissions to NICU if women had received telephone support
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Maternal anxiety a) No clear difference in groups at 3 months postpartum b) One trial with a small sample size suggested that support may reduce parenting stress (at 3 mths postpartum), but the difference between groups was not statistically significant. Postpartum depression: a) No clear difference between groups in diagnosis of PPD at 3 mths postpartum (1 study) b) women receiving telephone support interventions were less likely to have high risk of depression at three months postpartum Breast feeding: inconsistent results, but For longer-term breastfeeding outcomes (up to six months postpartum), results suggested that women receiving telephone support were more likely to continue any breastfeeding and exclusive breastfeeding for longer.
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction Maternal satisfaction - telephone support may increase women's overall satisfaction with their care during pregnancy and the postnatal period; although results for both periods were derived from only two studies.
	Economic evaluation Not reported

Characteristic	Details
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	**** *For most pre-specified outcomes few studies contributed data, and many of the results were based on findings from only one or two studies. Overall, results were inconsistent and inconclusive although there was some evidence that telephone support may be a promising intervention.*

Key characteristics of the Midwifery-led continuity of care approach

Characteristic	Details
Program name	Midwifery-led continuity of care
Lead organisation(s)	Cochrane Database of Systematic Review
Country and type of health setting	Australia, Canada, Ireland, UK All were public health settings, various models of are (eg. case-load, team, continuity of midwife)
Program design and duration	Midwifery-led continuity of care – during antenatal and intrapartum periods. Midwife as woman's lead professional.
Context for the initiative	Midwives are primary providers of care for childbearing women around the world. However, there is a lack of synthesised information to establish whether there are differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led continuity models and other models of care.
Formative research	
Theory	Not reported
Target population(s)	Pregnant women – mostly healthy/low risk. (Some RCTs excluded women with significant maternal disease and substance abuse.)
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Sandall J, Soltani H, Gates S, et al. Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database of Systematic Reviews 2016(4)

Key findings from Midwifery-led continuity of care approach

Characteristic	Details
Program name	Midwifery-led continuity of care
Details of evaluation	Systematic review of RCTs and quasi-randomised trials comparing midwifery led care to other care
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** Midwife led care resulted in lower risk of regional analgesia, instrumental vaginal birth, preterm birth <37 weeks and less all fetal loss before and after 24 weeks plus neonatal death. Women who had midwife-led continuity models of care were more likely to experience spontaneous vaginal birth. There were no differences between groups for caesarean births or intact perineum. (See excel spreadsheet for details)
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) For example, if breastfeeding at 3 months was reported, it would go here Not reported
	Long term outcomes (measured 1 year or longer after birth) For example, if child development at 3 years of age was reported, it would go here Not reported
	Satisfaction Although there were limitations in the way that satisfaction-related outcomes were assessed and reported, (inconsistency in instruments, scales, timing of administration, outcomes measured, and response rates of <80% for most of studies), the majority of the included studies showed a higher level of satisfaction in various aspects of care in the midwife-led continuity compared to the other models of care.
	Economic evaluation Six studies presented cost data using different economic evaluation methods. All suggested a cost-saving effect in intrapartum care. One study suggests a higher cost, and one study no differences in cost of postnatal care when midwife-led continuity of care is compared with medical-led maternity care. However, there is a lack of consistency in estimating maternity care cost among the available studies, and there seems to be a trend towards the cost-saving effect of midwife-led continuity of care in comparison with medical-led care.
	Relevant subgroups analysis Low risk versus mixed risk women – no evidence of differences in treatment effect between the low risk and mixed risk subgroups for any of the outcomes included (caesarean birth, instrumental vaginal delivery, spontaneous vaginal birth, intact perineum, preterm birth <37 weeks, fetal loss (before and after 24 weeks, including neonatal death)).
	Other outcomes
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	No

Key characteristics of the Alternative versus standard packages of antenatal care for low risk pregnancy – Cochrane Systematic Review

Characteristic	Details
Program name	Alternative versus standard packages of antenatal care for low risk pregnancy
Lead organisation(s)	Cochrane Review
Country and type of health setting	U.S, England (results from studies taking place in Argentina, Cuba, Saudi Arabia, Thailand & Zimbabwe excluded) In-hospital antenatal care
Program design and duration	Assess whether similar clinical outcomes can be achieved with reduced rather than standard antenatal care packages. Assess a provision of a schedule of reduced number of visits, with or without goal-oriented antenatal care, compared with a standard schedule of visits.
Context for the initiative	The UK Ministry of Health specified that antenatal should begin at around 16 weeks, followed by visits at 24 and 28 weeks then fortnightly to 36 weeks in the 1930s, and this has formed the basis for antenatal care around the world. Antenatal care has become more ritualistic than rational. Rigorous evaluation of the comparative clinical and cost effectiveness of alternative strategies are required.
Formative research	Not reported
Theory	Not reported
Target population(s)	Pregnant women attending antenatal clinics and considered to be at low risk of developing complications during pregnancy and labour
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: Yes 3. To strengthen the provision of safe, evidence-based birth options: Yes 4. To support transition from postnatal care to parenthood: Yes
References	Dowswell T, Carroli G, Duley L, et al. Alternative versus standard packages of antenatal care for low-risk pregnancy. Cochrane Database of Systematic Reviews 2015(7)

Key findings from the Alternative versus standard packages of antenatal care for low risk pregnancy

Characteristic	Details
Program name	Alternative versus standard packages of antenatal care for low risk pregnancy
Details of evaluation	Systematic review of all acceptable randomised and quasi-randomised controlled trials comparing programmes of antenatal care with varied number of visits. Results from four studies from developed countries (3 from U.S. and 1 from England) are presented here
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** In developed countries there was no difference in maternal mortality or perinatal death. There were more preterm births in the reduced visit group. There were no difference in antenatal or postpartum haemorrhage, caesarean section, induction of labour, birthweight or admission to NICU
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Not reported
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction In high income countries, women tended to be less satisfied with reduced number of antenatal visits compared with standard care
	Economic evaluation The trial in England reported cost outcomes; costs for reduced visits was GBP225 versus GBP251 for standard care but there was an increase in costs related to newborns length of stay from GBP121 to GBP181
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported

Key characteristics of the Schedules for home visits in the early postpartum period – Cochrane Systematic Review

Characteristic	Details
Program name	Schedule of Home visits Cochrane review
Lead organisation(s)	Cochrane Database of Systematic Review
Country and type of health setting	USA, UK, Canada, Denmark (have not reported findings from RCTs from Turkey, Syria, Zambia) Home visiting program
Program design and duration	Home visiting in the postpartum period (excluding studies with antenatal home visiting in which the visits continued); may include outreach visits to non-healthcare facilities.
Context for the initiative	The purpose of a home visiting program is to provide support at home for mothers, babies and families by health professionals. However, a single clearly defined methodology for this intervention does not exist and evidence regarding the effectiveness of different types of home visiting programs in the early postnatal period is not sufficient.
Formative research	On most developed countries, postpartum hospital stays are often <48 hours following a vaginal birth; thus most postnatal care is provided in the community and ambulatory care settings. Early intervention in the postpartum period may prevent health problems from becoming chronic with long-term effected on women, their babies and their families.
Theory	Not reported
Target population(s)	Enrolled participants in the early postpartum period (up to 42 days after birth); studies recruiting women from specific high-risk groups (e.g. with alcohol or drug problems) were excluded.
Change goals	1. To help parents prepare for pregnancy and improve their health: No 2. To improve access to high quality woman-centred care from early pregnancy: No 3. To strengthen the provision of safe, evidence-based birth options: No 4. To support transition from postnatal care to parenthood: Yes
References	Yonemoto N, Dowswell T, Nagai S, et al. Schedules for home visits in the early postpartum period. Cochrane Database of Systematic Reviews 2017(8)

Key findings from Schedules for home visits in the early postpartum period – Cochrane systematic review

Characteristic	Details
Program name	Schedule of Home visits Cochrane review
Details of evaluation	Systematic review of RCTs and quasi-randomised trials that compared schedules of home visiting in the early postpartum period
Outcomes/Impact	**Short-term outcomes (pregnancy to 6 weeks after birth)** No evidence that home visits were associated with improvements in maternal and neonatal mortality. No consistent evidence that more postnatal home visits were associated with improvements in maternal health. More intensive schedules of home visits did not appear to improve maternal psychological health, but more flexible visit schedule was associated with reduced postnatal depression. There is some evidence that more postnatal visit at home may reduce neonatal morbidity in the weeks following birth.
	Intermediate-term outcomes (occurring 6 weeks to 1 year after birth) Home visits rather than hospital visits may encourage more women breastfeed their babies at 6 months.
	Long term outcomes (measured 1 year or longer after birth) Not reported
	Satisfaction There is some evidence that home visits are associated with increased maternal satisfaction with postnatal care.
	Economic evaluation Not reported
	Relevant subgroups analysis Not reported
	Other outcomes Not reported
Factors which influenced outcomes	**Facilitators** Not reported
	Inhibitors Not reported
Any other relevant information	Not reported