National Institute for Health and Care Excellence

FINAL

Antenatal care

[F] Accessing antenatal care

NICE guideline NG201

Evidence reviews underpinning recommendations 1.1.1 to 1.1.3

August 2021

Final

These evidence reviews were developed by the National Guideline Alliance, which is a part of the Royal College of Obstetricians and Gynaecologists

Disclaimer

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Local commissioners and/or providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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ISBN: 978-1-4731-4227-5

Contents

Accessing antenatal care

Review question

What is the most effective method for women to initially access antenatal care (e.g. through a GP or directly through an antenatal care team)?

Introduction

Since the guideline was originally developed, there has been a shift in policy and practice around how women access antenatal care. Women can self-refer, access a midwife as the first point of contact or go through a GP. Currently the access method is largely left down to a woman's choice and what they value. The committee agreed it was important to assess whether the mode of initial access has an impact on early assessment of potential issues, attendance at subsequent appointments and longer term potential harms to the woman or the baby. This question was thought to be particularly important, from an equity perspective, to ensure particular groups were not being disadvantaged by their choice of access route. The aim of this review is to find out what is the most effective method for women to initially access antenatal care.

Summary of the protocol

See Table 1 for a summary of the Population, Intervention, Comparison and Outcome (PICO) characteristics of this review.

Table 1: Summary of the protocol (PICO table)

Population	All pregnant woman
Intervention	The following points of access to antenatal care will be considered: • GP surgery • Self-referral • Early pregnancy assessment unit or A+E • Community midwife • Any other health or social care professional • Combination of points of access
Comparison	The following comparisons will be considered: 1. Any single listed point of access versus any other single listed point of access 2. Any combination of points of access versus any single listed point of access

Outcome	**Critical**
	• Gestational age at time of booking appointment
	  ○ Booking appointment by 10^{+0} weeks gestational age
	  ○ Booking appointment by 12^{+6} weeks gestational age
	  ○ Mean gestational age at booking appointment
	• Fetal death (at any stage of pregnancy, including miscarriage, still birth and termination of pregnancy)
	• Infant death up to 1-year chronological age
	
	Important
	• Satisfaction with process of accessing antenatal care
	• Total number of antenatal appointments during pregnancy
	• Small for gestational age

For further details, see the review protocol in appendix A.

Methods and process

This evidence review was developed using the methods and process described in Developing NICE guidelines: the manual 2014. Methods specific to this review question are described in the review protocol in appendix A.

Declarations of interest were recorded according to NICE's conflicts of interest policy.

Clinical evidence

Included studies

A systematic review of the clinical literature was conducted but no studies were identified which were applicable to this review question.

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review are listed, and reasons for their exclusions are provided in appendix K.

Summary of studies included in the evidence review

No studies were identified which were applicable to this review question (and so there are no evidence tables in appendix D). No meta-analysis was undertaken for this review (and so there are no forest plots in appendix E).

Quality assessment of studies included in the evidence review

No studies were identified which were applicable to this review question and so there are no evidence profiles in appendix F.

Economic evidence

Included studies

A systematic review of the economic literature was conducted but no economic studies were identified which were applicable to this review question.

A single economic search was undertaken for all topics included in the scope of this guideline. See supplementary material 2 for details.

Excluded studies

Economic studies not included in this review are listed, and reasons for their exclusion are provided in appendix K.

Summary of studies included in the economic evidence review

No economic studies were identified which were applicable to this review question.

Economic model

No economic modelling was undertaken for this review because the committee agreed that other topics were higher priorities for economic evaluation.

Evidence statements

Clinical evidence statements

No evidence was identified which was applicable to this review question.

Economic evidence statements

No economic studies were identified which were applicable to this review question.

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

The committee agreed that gestational age at the time of booking was a critical outcome. This is because late booking is associated with poorer outcomes.

Fetal death and infant death up to 1 year were considered critical outcomes for the baby. This outcome was chosen as it is important to find out whether the point of access has an impact in the identification of risk factors that may lead to fetal deaths and infant deaths up to 1 year.

Satisfaction with the process of antenatal care and total of number of antenatal appointments were considered important outcomes. This is because it is important to take into account a women's experience and her preferences, so that care can be tailored to a women's individual needs.

The quality of the evidence

No evidence was identified which was applicable to this review question.

Benefits and harms

There was no clinical evidence to inform the most effective point of access to antenatal care, therefore the committee used their knowledge and expertise to make recommendations. The committee recognised that the best way to access antenatal care may differ depending on the woman's situation and preferences. Furthermore, the different access points will have varying levels of effectiveness across the country and therefore the committee did not recommend a specific point of access. The committee agreed it would be useful to identify the key features a pathway should have in place for access to antenatal care.

The committee discussed the different ways women access antenatal care services, such as self-referrals or referrals by a midwife, GP or other healthcare professionals. They also discussed a range of other ways women can access antenatal care services such as through a school nurse, community centres or refugee hostels and agreed it was necessary to ensure that the system of access is comprehensive and easy to use at all access points. They discussed the importance of this recommendation in ensuring that all women have equal access to antenatal care regardless of their needs. The committee were aware that so called late booking was particularly common among some groups of women, such as women from disadvantaged backgrounds or women who might not have strong English language skills. Therefore, the committee agreed it is important to lower the threshold for women to access antenatal care through places that are familiar to the woman.

The committee recognised that the use of referral forms may make access inequitable for women who may for example, have limited literacy skills, be limited in the English language, have sigh loss or not have access to the internet or a computer. Therefore, the committee agreed that the referral form should be easy-to-complete for all women regardless of their

background. Generally, all the materials should be available in different languages or formats suitable for women with different needs.

The committee highlighted the benefits of providing early pregnancy information and public health messages, such as taking folic acid, importance of stopping smoking, avoiding alcohol and healthy eating during pregnancy. The initial contact with antenatal care could be a good opportunity to share information. The committee also discussed the importance of identifying risk factors for adverse outcomes in pregnancy. They recognised that timely access to antenatal care can be a way of identifying risk factors relating to pre-existing conditions such as thyroid problems or diabetes, or risk for potential obstetric complications. They also discussed the importance of identifying modifiable risk factors early, such as smoking, where interventions may help avoid negative outcomes.

The committee recognised that communication between primary care and maternity services in the beginning of pregnancy as well as throughout pregnancy is also key in identifying women with risk factors and social care issues (including safeguarding). They discussed the negative impact that a delay in information sharing of social care and medical histories may have, and agreed that the referral form should collect information about the woman's GP so that information sharing can be ensured between primary care and maternity services, not only at the beginning of pregnancy but also if any complications or concerns arise during pregnancy.

Cost effectiveness and resource use

A systematic review of the economic literature was conducted but no relevant studies were identified which were applicable to this review question.

The committee highlighted that access was variable to antenatal care services and were mindful that there was not any evidence to recommend specific types of referral. Self-referral is already current practice, though many women may not be aware that they are able to do so. The recommendation that referral to antenatal care services should be available through school nurses, community centres or refugee hostels would incur additional costs to the health service in places where such support is not already routinely administered. Some women being referred through such centres may require additional support for example women for whom English is not their first language or women unable to read or write. There will be some cost savings through identifying risk factors for pregnancy and specific health and social care needs more promptly and accurately, leading to improved pregnancy outcomes.

References

No studies were identified which were applicable to this review question.

Appendices

Appendix A - Review protocol

Review protocol for review question: What is the most effective method for women to initially access antenatal care?

Table 2: Review protocol for access to antenatal care

Field (based on PRISMA-P)	Content
Review question	What is the most effective method for women to initially access antenatal care (e.g. through a GP or directly through an antenatal care team)?
Type of review question	Intervention
Objective of the review	The aim of this review is to identify the most effective method for pregnant women to initially access antenatal care (secure their first appointment) and to establish whether there are any harms to the fetus or baby associated with a particular point of access.
Eligibility criteria – population/disease/condition/issue/domain	All pregnant women
Eligibility criteria – intervention(s)	The following points of access to antenatal care will be considered • GP surgery • Self-referral • Early pregnancy assessment unit (EPAU) or A+E • Community midwife • Any other health- or social care professional • Combination of points of access
Eligibility criteria – comparator(s)	The following comparisons will be considered: 1. Any single listed point of access vs any other single listed point of access For healthcare systems that make several points of access available to the woman: 2. Any combination of points of access vs any single listed point of access
Outcomes and prioritisation	**Critical** • Gestational age at time of booking appointment ○ Booking appointment by 10+0 weeks gestational age ○ Booking appointment by 12+6 weeks gestational age ○ Mean gestational age at booking appointment Note: 'Booking'=First contact with antenatal service; gestational age can be determined by any method (e.g. last menstrual period, ultrasound). • Fetal death (at any stage of pregnancy, including miscarriage, still birth and termination of pregnancy)

Field (based on PRISMA-P)	Content
	• Infant death up to 1-year chronological age **Important** • Satisfaction with process of accessing antenatal care • Total number of antenatal appointments during pregnancy • Small for gestational age Note: SGA is defined as having a birth weight below the 10th centile. Some studies will report this as Low Birth Weight (LBW) adjusted for Gestational Age (GA) rather than as SGA
Eligibility criteria – study design	INCLUDE: • Systematic reviews • Randomised or quasi-randomised controlled trials (individual or cluster) If no evidence of these types is found for a listed single intervention, the following types of non-randomised studies in order of priority will be considered: • Non-randomised controlled studies • Prospective cohort studies • Retrospective cohort studies Note: For further details, see the algorithm in appendix H, Developing NICE guidelines: the manual.
Other inclusion exclusion criteria	Exclusion STUDY DESIGN: • Case-control studies • Cross-over studies • Cross-sectional studies • Epidemiological reviews or reviews on associations • Non-comparative studies PUBLICATION STATUS: • Conference abstract LANGUAGE: • Non-English Inclusion COUNTRY: • Only studies conducted in high income countries as defined by the World Bank will be included. For a list of these countries, see https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups. Note: The use of the World Bank definition of low-, middle- and high-income countries in this guideline is consistent with its use in the Postnatal care up to 8 weeks after birth (update) NICE guideline CG37.
Proposed sensitivity/sub-	Subgroup analysis will be conducted according to parity status (nulliparous, parous). In the presence of heterogeneity, the following subgroup analyses will also be conducted:

Field (based on PRISMA-P)	Content
group analysis, or meta-regression	• Age (<18 years-old; ≥18 years-old) • Women seeking or who have refugee status or non-English speaking women These subgroup factors will be used as a confounding factor to assess risk of bias of any included cohort studies using the relevant checklist. Other confounding factors that will be considered in the risk of bias evaluation when including cohort studies are: • Ethnicity • Socioeconomic status • Smoking/Alcohol/Substance misuse Statistical heterogeneity will be assessed by visually examining the forest plots and by calculating the I2 inconsistency statistic (with an I2 value≥50% indicating serious heterogeneity, and ≥80% indicating very serious heterogeneity).
Selection process – duplicate screening/selection /analysis	Studies included in the 2008 NICE guideline on antenatal care for uncomplicated pregnancies (CG62) that satisfy the review protocol will be included in this review. Review questions selected as high priorities for health economic analysis (and those selected as medium priorities and where health economic analysis could influence recommendations) will be subject to dual weeding and study selection; any discrepancies above 10% of the dual weeded resources will be resolved through discussion between the first and second reviewers or by reference to a third person. All data extraction will quality assured by a senior reviewer. Draft excluded studies and evidence tables will be circulated to the Topic Group for their comments. Resolution of disputes will be by discussion between the senior reviewer, Topic Advisor and Chair.
Data management (software)	NGA STAR software will be used to generate bibliographies/citations, and to conduct study sifting and data extraction. Pairwise meta-analyses, if possible, will be performed using Cochrane Review Manager (RevMan5). For details please see the Supplement 1: methods. 'GRADEpro' will be used to assess the quality of evidence for each outcome.
Information sources – databases and dates	Sources to be searched: Medline, Medline In-Process, CCTR, CDSR, DARE, HTA, Embase. Limits (e.g. date, study design): • Date limit: 2006 (pre-2006 evidence will be of relatively little relevance to the current structure of services and access). • Apply standard animal/non-English language exclusion • Limit to RCTs and systematic reviews in first instance but download all results.
Identify if an update	This antenatal care update will replace the 2008 NICE guideline on antenatal care for uncomplicated pregnancies (CG62), which will be taken down in due course. The following relevant recommendations in the 2008 NICE guideline on antenatal care for uncomplicated pregnancies (CG62) on access to antenatal care were made: **1.2.3 Where should antenatal appointments take place?** 1.2.3.1 Antenatal care should be readily and easily accessible to all pregnant women and should be sensitive to the needs of individual women and the local community. 1.2.3.2 The environment in which antenatal appointments take place should enable women to discuss sensitive issues such as domestic violence, sexual abuse, psychiatric illness and recreational drug use.
Author contacts	Developer: National Guideline Alliance
Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual
Search strategy – for one database	For details please see appendix B.

Field (based on PRISMA-P)	Content
Data collection process – forms/duplicate	A standardised evidence table format will be used, and published as appendix D (clinical evidence tables) or H (economic evidence tables).
Data items – define all variables to be collected	For details please see evidence tables in appendix D (clinical evidence tables) or H (economic evidence tables).
Methods for assessing bias at outcome/study level	Quality assessment of individual studies will be performed using the following checklists: • ROBIS for systematic reviews • Cochrane RoB tool v.2 for RCTs or quasi-RCTs • ROBINS-I tool for non-randomised (clinical) controlled trials and cohort studies. For details please see section 6.2 of Developing NICE guidelines: the manual. The risk of bias across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group: http://www.gradeworkinggroup.org/
Criteria for quantitative synthesis (where suitable)	For details please see section 6.4 of Developing NICE guidelines: the manual.
Methods for analysis – combining studies and exploring (in)consistency	For details please see Supplement 1: methods.
Meta-bias assessment – publication bias, selective reporting bias	For details please see Supplement 1: methods and section 6.2 of Developing NICE guidelines: the manual. If sufficient relevant RCT evidence is available, publication bias will be explored using RevMan software to examine funnel plots. Trial registries will be examined to identify missing evidence: Clinical trials.gov, NIHR Clinical Trials Gateway.
Assessment of confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual.
Rationale/context – Current management	For details please see the introduction to the evidence review.
Describe contributions of authors and guarantor	A multidisciplinary committee developed the guideline. The committee was convened by the National Guideline Alliance and chaired by Kate Harding in line with section 3 of Developing NICE guidelines: the manual. Staff from the National Guideline Alliance undertook systematic literature searches, appraised the evidence, conducted meta-analysis and cost-effectiveness analysis where appropriate, and drafted the guideline in collaboration with the committee. For details please see Supplement 1: methods.
Sources of funding/support	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists.

Field (based on PRISMA-P)	Content
Name of sponsor	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists.
Roles of sponsor	NICE funds the National Guideline Alliance to develop guidelines for those working in the NHS, public health, and social care in England.
PROSPERO registration number	This protocol is not registered with PROSPERO.

CCTR: Cochrane Controlled Trials Register; CDSR: Cochrane Database of Systematic Reviews; CG: clinical guideline; DARE: Database of Abstracts of Reviews of Effects;; GRADE: Grading of Recommendations Assessment, Development and Evaluation; HTA: Health Technology Assessment; NGA: National Guideline Alliance; NICE: National Institute for Health and Care Excellence; NIHR: National Institute for Health Research; RCT(s): randomised controlled trial(s); RoB: risk of bias; ROBIS: Risk Of Bias In Systematic reviews tool; ROBINS-I: Risk Of Bias In Non-randomized studies – of Interventions tool.

Appendix B - Literature search strategies

Literature search strategy for review question: What is the most effective method for women to initially access antenatal care?

Database(s): Medline & Embase (Multifile)
Last searched on **Embase Classic+Embase** 1947 to 2020 September 04, **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily** 1946 to September 04, 2020
Date of last search: 7th September 2020
Multifile database codes: emczd = Embase Classic+Embase; ppez= MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily

#	Searches
1	*Pregnancy/ use ppez
2	*Prenatal Care/ use ppez
3	*pregnancy/ use emczd
4	*prenatal care/ use emczd
5	((antenatal$ or ante-natal$ or ante natal$ or prenatal$ or pre-natal$ or pre natal$) adj care$).tw,kw.
6	1 or 2 or 3 or 4 or 5
7	*Health Services Accessibility/ use ppez
8	*health care access/ use emczd
9	*Delivery of Health Care/ use ppez
10	*health care delivery/ use emczd
11	*Communication/ use ppez
12	*interpersonal communication/ use emczd
13	*Family Practice/ use ppez
14	*General Practice/ use ppez
15	*General Practitioners/ use ppez
16	*general practice/ use emczd
17	*general practitioner/ use emczd
18	((general adj practi$) or GP$).ti.
19	*Midwifery/ use ppez
20	*midwife/ use emczd
21	(midwife$ or midwive$).ti.
22	*"Continuity of Patient Care"/ use ppez
23	*patient care/ use emczd
24	(continuity adj3 care$).tw.
25	(early adj pregnan$ adj3 assess$ adj (unit$ or clinic$)).tw.
26	(early adj pregnan$ adj (unit$ or clinic$)).tw.
27	EPAU$.tw.
28	*Emergencies/ use ppez
29	Emergency Service, Hospital/ use ppez
30	Emergency Medical Services/ use ppez
31	*emergency/ use emczd
32	hospital emergency service/ use emczd
33	emergency health service/ use emczd
34	((accident or emergency) adj5 (service$ or clinic$ or ward$ or department$ or setting or care)).ti.
35	*"Referral and Consultation"/ use ppez
36	*patient referral/ use emczd
37	(self-refer$ or selfrefer$ or (self adj refer$)).tw.
38	*Patient Satisfaction/ use ppez
39	*Personal Satisfaction/ use ppez
40	*patient satisfaction/ use emczd
41	*satisfaction/ use emczd
42	(satisfaction adj3 care).tw.
43	((late or delay$ or early or earlier) adj (booking or contact)).tw.
44	(booking adj process).tw.
45	(initiat$ adj3 (antenatal$ or ante-natal$ or ante natal$ or prenatal$ or pre-natal$ or pre natal$) adj care$).tw.
46	(initiat$ adj3 (ANC or PNC)).tw.
47	or/7-46
48	6 and 47
49	limit 48 to yr="2006 -Current"
50	limit 49 to english language
51	(controlled clinical trial or pragmatic clinical trial or randomized controlled trial).pt. or drug therapy.fs. or (groups or placebo or randomi#ed or randomly or trial).ab.

#	Searches
52	crossover procedure/ or double blind procedure/ or randomized controlled trial/ or single blind procedure/ or (assign* or allocat* or crossover* or cross over* or ((doubl* or singl*) adj blind*) or factorial* or placebo* or random* or volunteer*).ti,ab.
53	meta-analysis/
54	meta-analysis as topic/
55	systematic review/
56	meta-analysis/
57	(meta analy* or metanaly* or metaanaly*).ti,ab.
58	((systematic or evidence) adj2 (review* or overview*)).ti,ab.
59	((systematic* or evidence*) adj2 (review* or overview*)).ti,ab.
60	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
61	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
62	(search* adj4 literature).ab.
63	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
64	cochrane.jw.
65	((pool* or combined) adj2 (data or trials or studies or results)).ab.
66	letter/
67	editorial/
68	news/
69	exp historical article/
70	Anecdotes as Topic/
71	comment/
72	case report/
73	(letter or comment*).ti.
74	66 or 67 or 68 or 69 or 70 or 71 or 72 or 73
75	randomized controlled trial/ or random*.ti,ab.
76	74 not 75
77	animals/ not humans/
78	exp Animals, Laboratory/
79	exp Animal Experimentation/
80	exp Models, Animal/
81	exp Rodentia/
82	(rat or rats or mouse or mice).ti.
83	76 or 77 or 78 or 79 or 80 or 81 or 82
84	letter.pt. or letter/
85	note.pt.
86	editorial.pt.
87	case report/ or case study/
88	(letter or comment*).ti.
89	84 or 85 or 86 or 87 or 88
90	randomized controlled trial/ or random*.ti,ab.
91	89 not 90
92	animal/ not human/
93	nonhuman/
94	exp Animal Experiment/
95	exp Experimental Animal/
96	animal model/
97	exp Rodent/
98	(rat or rats or mouse or mice).ti.
99	91 or 92 or 93 or 94 or 95 or 96 or 97 or 98
100	83 use ppez
101	99 use emczd
102	100 or 101
103	51 use ppez
104	52 use emczd
105	103 or 104
106	(or/53-54,57,59-64) use ppez
107	(or/55-58,60-65) use emczd
108	106 or 107
109	50 and 102
110	50 not 109
111	105 or 108
112	110 and 111 [RCT/SR data]
113	110 not 112 [Non-RCT/SR data]

Database(s): Cochrane Library
Last searched on **Cochrane Database of Systematic Reviews**, Issue 9 of 12, September 2020, **Cochrane Central Register of Controlled Trials**, Issue 9 of 12, September 2020

Date of last search: 7th September 2020

#	Searches
#1	MeSH descriptor: [Pregnancy] this term only
#2	MeSH descriptor: [Prenatal Care] this term only
#3	(((antenatal* or ante-natal* or ante natal* or prenatal* or pre-natal* or pre natal*) NEAR/1 care*)):ti,ab,kw
#4	#1 OR #2 OR #3
#5	MeSH descriptor: [Health Services Accessibility] this term only
#6	MeSH descriptor: [Delivery of Health Care] this term only
#7	MeSH descriptor: [Communication] this term only
#8	MeSH descriptor: [Family Practice] this term only
#9	MeSH descriptor: [General Practice] this term only
#10	MeSH descriptor: [General Practitioners] this term only
#11	(((general NEAR/1 practi*) or GP*)):ti
#12	MeSH descriptor: [Midwifery] this term only
#13	((midwife* or midwive*)):ti
#14	MeSH descriptor: [Continuity of Patient Care] this term only
#15	((continuity NEAR/3 care*)):ti,ab,kw
#16	((early NEAR/1 pregnan* NEAR/3 assess* NEAR/1 (unit* or clinic*))):ti,ab,kw
#17	((early NEAR/1 pregnan* NEAR/1 (unit* or clinic*))):ti,ab,kw
#18	(EPAU*):ti,ab,kw
#19	MeSH descriptor: [Emergencies] this term only
#20	MeSH descriptor: [Emergency Service, Hospital] this term only
#21	MeSH descriptor: [Emergency Medical Services] this term only
#22	(((accident or emergency) NEAR/5 (service* or clinic* or ward* or department* or setting or care))):ti
#23	MeSH descriptor: [Referral and Consultation] this term only
#24	((self-refer* or selfrefer* or (self NEAR1 refer*))):ti,ab,kw
#25	MeSH descriptor: [Patient Satisfaction] this term only
#26	MeSH descriptor: [Personal Satisfaction] this term only
#27	((satisfaction NEAR/3 care)):ti,ab,kw
#28	(((late or delay* or early or earlier) NEAR/1 (booking or contact))):ti,ab,kw
#29	((booking NEAR/1 process)):ti,ab,kw
#30	((initiat* NEAR/3 (antenatal* or ante-natal* or ante natal* or prenatal* or pre-natal* or pre natal*) NEAR/1 care*)):ti,ab,kw
#31	((initiat* NEAR/3 (ANC or PNC))):ti,ab,kw
#32	#5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31
#33	#4 AND #32

Database(s): CRD: Database of Abstracts of Reviews of Effects (DARE), HTA Database
Date of last search: 7th September 2020

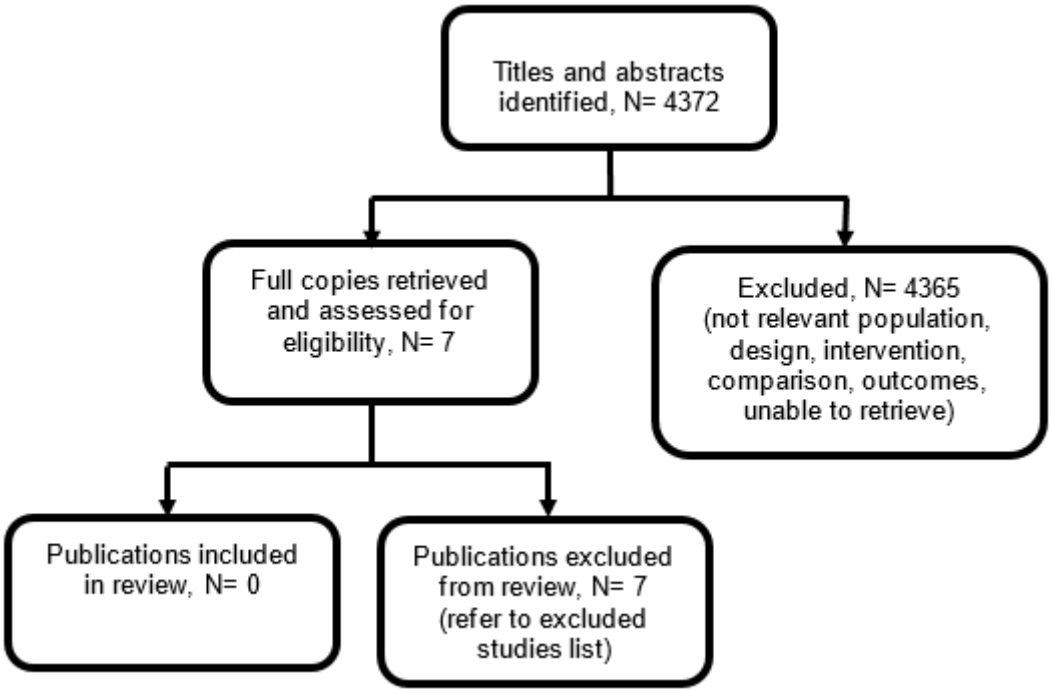
#	Searches
1	MeSH DESCRIPTOR Pregnancy IN DARE,HTA
2	MeSH DESCRIPTOR Prenatal Care IN DARE,HTA
3	(((antenatal* or ante-natal* or ante natal* or prenatal* or pre-natal* or pre natal*) NEAR1 care*)) IN DARE, HTA
4	#1 OR #2 OR #3
5	MeSH DESCRIPTOR Health Services Accessibility IN DARE,HTA
6	MeSH DESCRIPTOR Delivery of Health Care IN DARE,HTA
7	MeSH DESCRIPTOR Communication IN DARE,HTA
8	MeSH DESCRIPTOR Family Practice IN DARE,HTA
9	MeSH DESCRIPTOR General Practice IN DARE,HTA
10	MeSH DESCRIPTOR General Practitioners IN DARE,HTA
11	(((general NEAR1 practi*) or GP*)):TI IN DARE, HTA
12	MeSH DESCRIPTOR Midwifery IN DARE,HTA
13	((midwife* or midwive*)):TI IN DARE, HTA
14	MeSH DESCRIPTOR Continuity of Patient Care IN DARE,HTA
15	((continuity NEAR3 care*)) IN DARE, HTA
16	((early NEAR1 pregnan* NEAR3 assess* NEAR1 (unit* or clinic*))) IN DARE, HTA
17	((early NEAR1 pregnan* NEAR1 (unit* or clinic*))) IN DARE, HTA
18	(EPAU*) IN DARE, HTA
19	MeSH DESCRIPTOR Emergencies IN DARE,HTA
20	MeSH DESCRIPTOR Emergency Service, Hospital IN DARE,HTA
21	MeSH DESCRIPTOR Emergency Medical Services IN DARE,HTA
22	(((accident or emergency) NEAR5 (service* or clinic* or ward* or department* or setting or care))):TI IN DARE, HTA
23	MeSH DESCRIPTOR Referral and Consultation IN DARE,HTA
24	((self-refer* or selfrefer* or (self NEAR1 refer*))) IN DARE, HTA
25	MeSH DESCRIPTOR Patient Satisfaction IN DARE,HTA
26	MeSH DESCRIPTOR Personal Satisfaction IN DARE,HTA
27	((satisfaction NEAR3 care)) IN DARE, HTA
28	(((late or delay* or early or earlier) NEAR1 (booking or contact))) IN DARE, HTA
29	((booking NEAR1 process)) IN DARE, HTA

#	Searches
30	((initiat* NEAR3 (antenatal* or ante-natal* or ante natal* or prenatal* or pre-natal* or pre natal*) NEAR1 care*)) IN DARE, HTA
31	((initiat* NEAR3 (ANC or PNC))) IN DARE, HTA
32	#5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31
33	#4 AND #32

Appendix C - Clinical evidence study selection

Study selection for: What is the most effective method for women to initially access antenatal care?

Figure 1: Study selection flow chart



Appendix D - Clinical evidence tables

Evidence tables for review question: What is the most effective method for women to initially access antenatal care?

No evidence was identified which was applicable to this review question.

Appendix E - Forest plots

Forest plots for review question: What is the most effective method for women to initially access antenatal care?

No meta-analysis was conducted for this review question and so there are no forest plots.

Appendix F - GRADE tables

GRADE tables for review question: What is the most effective method for women to initially access antenatal care?

No evidence was identified which was applicable to this review question

Appendix G - Economic evidence study selection

Economic evidence study selection for review question: What is the most effective method for women to initially access antenatal care?

A single economic search was undertaken for all topics included in the scope of this guideline. No economic studies were identified which were applicable to this review question. See supplementary material 2 for details.

Appendix H - Economic evidence tables

Economic evidence tables for review question: What is the most effective method for women to initially access antenatal care?

No evidence was identified which was applicable to this review question.

Appendix I - Economic evidence profiles

Economic evidence profiles for review question: What is the most effective method for women to initially access antenatal care?

No evidence was identified which was applicable to this review question.

Appendix J - Economic analysis

Economic analysis for review question: What is the most effective method for women to initially access antenatal care?

No economic analysis was conducted for this review question.

Appendix K- Excluded studies

Excluded studies for review question: What is the most effective method for women to initially access antenatal care?

Table 3: Excluded studies and reasons for their exclusion

Study	Reason for exclusion
Ali, N., Elbarazi, I., Alabboud, S., Al-Maskari, F., Loney, T., Ahmed, L. A., Antenatal Care Initiation Among Pregnant Women in the United Arab Emirates: The Mutaba'ah Study, Frontiers in Public HealthFront, 8, 211, 2020	Does not focus on method of access
Edgerley,L.P., El-Sayed,Y.Y., Druzin,M.L., Kiernan,M., Daniels,K.I., Use of a community mobile health van to increase early access to prenatal care, Maternal and Child Health Journal, 11, 235-239, 2007	Does not focus on a method of access
Loewenberg Weisband, Y., Klebanoff, M., Gallo, M. F., Shoben, A., Norris, A. H., Birth Outcomes of Women Using a Midwife versus Women Using a Physician for Prenatal Care, Journal of Midwifery and Women's Health, 63, 399-409, 2018	Does not focus on a method of access
Metcalfe, A., Grabowska, K., Weller, C., Tough, S. C., Impact of prenatal care provider on the use of ancillary health services during pregnancy, BMC Pregnancy & Childbirth, 13, 62, 2013	Does not focus on a method of access
Pearson, J., Anderholm, K., Bettermann, M., Friedrichsen, S., Mateo, C. R., Richter, S., Onello, E., Obstetrical Care in Rural Minnesota: Family Physician Perspectives on Factors Affecting the Ability to Provide Prenatal, Labor, and Delivery Care, The Journal of rural health : official journal of the American Rural Health Association and the National Rural Health Care Association., 30, 2020	Study design not in inclusion criteria. Does not focus on method of access.
Prathiba, P., Niranjjan, R., Maurya, D. K., Lakshminarayanan, S., Referral chain of patients with obstetric emergency from primary care to tertiary care: A gap analysis, Journal of Family Medicine & Primary CareJ, 9, 347-353, 2020	Study in India
Wong, N., Browne, J., Ferguson, S., Taylor, J., Davis, D., Getting the first birth right: A retrospective study of outcomes for low-risk primiparous women receiving standard care versus midwifery model of care in the same tertiary hospital, Women and Birth, 28, 279-284, 2015	Does not focus on a method of access

Economic studies

A single economic search was undertaken for all topics included in the scope of this guideline. No economic studies were identified which were applicable to this review question. See supplementary material 2 for details.

Appendix L - Research recommendations

Research recommendations for review question: What is the most effective method for women to initially access antenatal care?

Research question

What is the clinical and cost effectiveness of different models of antenatal care with varying numbers and times of appointment, and should different models be used for groups at risk of worse outcomes?

Why this is important

The committee agreed that future research should focus on finding out the effectiveness and cost effectiveness of different models of antenatal care. In current practice, women can choose to either self-refer to antenatal care, access a midwife or go via a GP. The committee want to find out whether the mode of access has an impact on early assessment of potential issues, attendance at subsequent appointments and outcomes for the mother and baby. The committee want to find out information about which models women are positively choosing, the options available in each area and whether one model of care has better outcomes than another. This is especially relevant to groups where outcomes are typically poorer, as it is these groups we want to ensure have choice and care.. There is also significant concern that some women access antenatal later and these women have poorer outcomes, therefore the committee agreed research focusing on early booking was important.

Table 4: Research recommendation rationale

Research question	**What is the clinical and cost effectiveness of different models of antenatal care with varying numbers and times of appointment, and should different models be used for groups at risk of worse outcomes?**
Why is this needed	
Importance to 'patients' or the population	The timing and the mode of access to antenatal care is likely to shape the effectiveness of care and pregnancy outcomes. It is important to compare different models of access to provide evidence of what works best for pregnant women.
Relevance to NICE guidance	Evidence on the most effective way to access antenatal care, the best time for the first appointment and the ideal number of antenatal appointments were considered in this guideline. The evidence was lacking or limited and research could impact future updates of this guidance.
Relevance to the NHS	The best model of access to antenatal care is hypothesised to facilitate positive health outcomes for mother and child and reduce morbidity and mortality
National priorities	High
Current evidence base	Minimal long-term data
Equality	None known
Feasibility	No concerns
Other comments	-

Insert abbreviations

Table 5: Research recommendation modified PICO table

Criterion	**Explanation**
Population	Women with uncomplicated low risk pregnancies.

Criterion	Explanation
	Results should be reported for the entirety of the cohort but also stratified by pre-specified subgroups in whom adverse outcomes may be more likely, for example BAME women, low socioeconomic status, younger mums, and those who misuse substances
Intervention	Any modified model of antenatal care appointments, modifications may include type (e.g. GP surgeries, self-referral, early pregnancy assessment unit or A&E, community midwife, any other health or social care professional) and timing of first access to ANC, increased or decreased number of appointments compared with standard (current standard care is 10 appointments for nulliparous women and 7 for parous women); a change in the timing of appointments or an increase or decrease in the number of appointments that are delivered digitally as opposed to face to face. Models may also include variants where the approach is unified for all women or where different models are available for different groups – in this case reporting for subgroups may be less relevant.
Comparator	Any other model of antenatal care broadly consistent with current practice.
Outcomes	• Severe maternal morbidity up to 42 days post-birth • Any fetal death (from 24 weeks gestation) • Admission to hospital for treatment of adverse obstetric outcomes • Preparedness for birth • Women's experience and satisfaction with care • Admission to neonatal unit • Gestational age time of booking appointment • Satisfaction with process of accessing antenatal care • Babies being born small for gestational age
Study design	RCT or non-randomised cohort study with adequate adjustment for confounding factors
Timeframe	At least 42 days of follow-up post-birth/term
Additional information	-

ANC: antenatal care; BAME: Black, Asian and Minority Ethnic; RCT: randomised controlled trial.