Implementing AHRQ Effective Health Care Reviews

Helping Clinicians Make Better Treatment Choices

Schedule of Visits and Televisits for Routine Antenatal Care

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Key Clinical Issue

What are the risks and benefits of less frequent antenatal in-person visits vs. traditional visit schedules and televisits replacing some in-person antenatal appointments?

Evidence-Based Answer

Compared with traditional schedules of antenatal appointments, reducing the number of appointments showed no difference in gestational age at birth (mean difference = 0 days), likelihood of being small for gestational age (odds ratio [OR] = 1.08; 95% CI, 0.70 to 1.66), likelihood of a low Apgar score (mean difference = 0 at one and five minutes), likelihood of neonatal intensive care unit (NICU) admission (OR = 1.05; 95% CI, 0.74 to 1.50), maternal anxiety, likelihood of preterm birth (nonsignificant OR), and likelihood of low birth weight (OR = 1.02; 95% CI, 0.82 to 1.25). (Strength of Recommendation [SOR]: B, inconsistent or limited-quality patient-oriented evidence.) Studies comparing hybrid visits (i.e., televisits and in-person) with in-person visits only did not find differences in rates of preterm births (OR = 0.93; 95% CI, 0.84 to 1.03; P = .18) or rates of NICU admissions (OR = 1.02; 95% CI, 0.82 to 1.28). (SOR: B, inconsistent or limited-quality patient-oriented evidence.) There was insufficient evidence to assess other outcomes.[1]

The Agency for Healthcare Research and Quality (AHRQ) conducts the Effective Health Care Program as part of its mission to produce evidence to improve health care and to make sure the evidence is understood and used. A key clinical question based on the AHRQ Effective Health Care Program systematic review of the literature is presented, followed by an evidence-based answer based on the review. AHRQ's summary is accompanied by an interpretation by an *AFP* author that will help guide clinicians in making treatment decisions. For the full review, go to https://effectivehealthcare.ahrq.gov/sites/default/files/product/pdf/cer-257-antenatal-care.pdf.

This series is coordinated by Joanna Drowos, DO, MPH, MBA, contributing editor.

A collection of Implementing AHRQ Effective Health Care Reviews published in *AFP* is available at https://www.aafp.org/afp/ahrq.

CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 127.

Author disclosure: No relevant financial relationships.

Practice Pointers

Antenatal care is a cornerstone of obstetric practice in the United States, and millions of patients receive counseling, screening, and medical care in these visits.[2,3] There is clear evidence supporting the benefits of antenatal care; however, the number of appointments needed and setting of visits is less understood.

The American College of Obstetricians and Gynecologists recommends antenatal visits every four weeks until 28 weeks' gestation, every two weeks until 36 weeks' gestation, and weekly thereafter, which typically involves 10 to 12 visits.[4]

Expert consensus and past meta-analyses have favored fewer antenatal care visits given similar maternal and neonatal outcomes. In 1989, the U.S. Public Health Service suggested a reduction in the antenatal visit schedule based on a multidisciplinary panel and expert opinion in conjunction with a literature review; however, the American College of Obstetricians and Gynecologists has not updated its guidelines, and practices have not changed.[5] A 2010 Cochrane review found no differences in perinatal mortality between patients randomized to higher vs. reduced antenatal care groups in high-income countries, and a 2015 Cochrane review showed no difference in neonatal outcomes for women in high-income countries.[6,7]

The Agency for Healthcare Research and Quality (AHRQ) review showed moderate- and low-strength evidence and did not find significant differences between traditional and abbreviated schedules when looking at many outcomes, such as gestational age at birth, low birth weight, Apgar scores, NICU admission, preterm birth, and maternal anxiety. The review was limited by a small evidence base with studies that are difficult to compare. The randomized controlled trials

CLINICAL BOTTOM LINE

Reduced vs. Traditional Visit Schedules

Outcome	Number of studies (participants)	Risk of bias	Strength of evidence	Conclusion
Maternal anxiety	3 RCTs (1,247)	Low	●○○	No evidence of a difference; incomplete reporting data
Maternal depression	1 (1,102)	Low	○○○	No conclusion
Satisfaction with antenatal care	5 RCTs (3,686) 2 NRCSs (3,944)	Low	○○○	Inconsistent findings
Preterm birth	1 RCT (2,328) 2 NRCSs (7,239)	Moderate	●○○	No evidence of a difference; OR = 0.80 to 1.25, all not statistically significant
Gestational age at birth	2 RCTs (2,895) 2 NRCSs (4,802)	Moderate	●●○	No evidence of a difference; mean difference ~ 0 days
Small for gestational age	3 RCTs (3,454)	Low	●●○	No evidence of a difference; summary OR = 1.08 (95% CI, 0.70 to 1.66)
Low birth weight	1 RCT (2,351) 3 NRCSs (8,684)	High	●○○	No evidence of a difference; summary OR = 1.02 (95% CI, 0.82 to 1.25)
Apgar score	3 RCTs (5,621) 2 NRCSs (5,327)	Moderate	●●○	No evidence of a difference; OR = 0.62 to 1.26, all not statistically significant; mean difference = 0 at 1 and 5 minutes
Breastfeeding	1 RCT (707)	Low	○○○	No conclusion
Unplanned visits	1 RCT (81) 2 NRCSs (7,239)	High	○○○	Inconsistent findings
Neonatal intensive care unit admissions	3 RCTs (3,376) 2 NRCSs (7,239)	Low	●●○	No evidence of a difference; summary OR = 1.05 (95% CI, 0.74 to 1.50)

Strength of evidence scale

●●● **High:** High confidence that the evidence reflects the true effect. Further research is very unlikely to change the confidence in the estimate of effect.

●●○ **Moderate:** Moderate confidence that the evidence reflects the true effect. Further research may change the confidence in the estimate of effect and may change the estimate.

●○○ **Low:** Low confidence that the evidence reflects the true effect. Further research is likely to change the confidence in the estimate of effect and is likely to change the estimate.

○○○ **Insufficient:** Evidence either is unavailable or does not permit a conclusion.

NRCS = nonrandomized (observational) comparative study; OR = odds ratio; RCT = randomized controlled trial.

Adapted from Balk EM, Konnyu KJ, Cao W, et al. Schedule of visits and televisits for routine antenatal care: a systematic review. Comparative effectiveness review no. 257. (Prepared by the Brown Evidence-Based Practice Center under contract no. 75Q80120D00001.) AHRQ publication no. 22-EHC031. Agency for Healthcare Research and Quality; June 2022. Accessed October 1, 2022. https://effectivehealthcare.ahrq.gov/sites/default/files/product/pdf/cer-257-antenatal-care.pdf

that were eligible were adjusted for confounding, whereas the nonrandomized controlled studies were not adjusted and were at high risk for confounding.

Telemedicine, defined as the use of electronic information and telecommunication to support health care among patients, clinicians, and administrators, is a new option for antenatal care delivery.[8] Televisits, the real-time communication between patients and clinicians via phone or the internet, are the specific interactions that encompass telemedicine. Recent literature suggests that supplementing in-person visits with televisits in low-risk pregnancies resulted in similar clinical outcomes and higher patient satisfaction scores.[9] The AHRQ review found no significant differences between rates of preterm births or NICU admissions for a hybrid model of televisits and in-person visits compared with in-person visits only. The review was limited due to the lack

CLINICAL BOTTOM LINE

Hybrid (Televisits and In-person) vs. In-person Visits

Outcome	Number of studies (participants)	Risk of bias	Strength of evidence	Conclusion
Maternal stress	1 RCT (267)	Low	○○○	No conclusion
Satisfaction with antenatal care	1 RCT (267) 1 NRCS (1,170)	Moderate	●○○	Greater satisfaction with televisits
Lost work time	1 RCT (200)	Moderate	○○○	No conclusion
Preterm birth	1 RCT (267) 3 NRCSs (30,949)	High	●○○	No evidence of a difference; summary OR = 0.93 (95% CI, 0.84 to 1.03)
Gestational age at birth	1 NRCS (1,058)	Moderate	○○○	No evidence
Low birth weight	1 RCT (267) 1 NRCS (17,237)	Moderate	○○○	No conclusion
Apgar score	1 RCT (267)	Low	○○○	No conclusion
Completion of ACOG recommended services	1 RCT (267)	Low	○○○	No conclusion
Neonatal intensive care unit admissions	3 NRCSs (30,949)	High	●○○	No evidence of a difference; summary OR = 1.02 (95% CI, 0.82 to 1.28)

Strength of evidence scale

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●●○ **Moderate:** Moderate confidence that the evidence reflects the true effect. Further research may change the confidence in the estimate of effect and may change the estimate.

●○○ **Low:** Low confidence that the evidence reflects the true effect. Further research is likely to change the confidence in the estimate of effect and is likely to change the estimate.

○○○ **Insufficient:** Evidence either is unavailable or does not permit a conclusion.

ACOG = American College of Obstetricians and Gynecologists; NRCS = nonrandomized (observational) comparative study; OR = odds ratio; RCT = randomized controlled trial.

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of adjustments for potential confounders in the study. For example, some of the studies were conducted during the COVID-19 pandemic, which adds multiple confounders and potential for bias.

The AHRQ review offers limited opportunity for conclusions to suggest changes in current practice. The current evidence supports past evidence, suggesting that fewer visits are not associated with neonatal or maternal harm, and televisits may have a role in antenatal care. Many of the other outcomes of interest had insufficient evidence to generate conclusions.

Editor's Note: *American Family Physician* SOR ratings are different from the AHRQ Strength of Evidence ratings.

The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Army, the U.S. Department of Defense, or the U.S. government.

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