



Content of First Prenatal Visits

J. Dyer¹ · G. Latendresse¹ · E. Cole¹ · J. Coleman¹ · E. Rothwell^{1,2}

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Abstract

Objective The purpose of this study was to examine the content of the first prenatal visit within an academic medical center clinic and to compare the topics discussed to 2014 American College of Obstetrics and Gynecologists guidelines for the initial prenatal visit. **Methods** Clinical interactions were audio recorded and transcribed (n = 30). A content analysis was used to identify topics discussed during the initial prenatal visit. Topics discussed were then compared to the 2014 ACOG guidelines for adherence. Coded data was queried through the qualitative software and reviewed for accuracy and content. **Results** First prenatal visits included a physician, nurse practitioner, nurse midwife, medical assistant, medical students, or a combination of these providers. In general, topics that were covered in most visits and closely adhered to ACOG guidelines included vitamin supplementation, laboratory testing, flu vaccinations, and cervical cancer screening. Topics discussed less often included many components of the physical examination, education about pregnancy, and screening for an identification of psychosocial risk. Least number of topics covered included prenatal screening. **Conclusions for Practice** While the ACOG guidelines may include many components that are traditional in addition to those based on evidence, the guidelines were not closely followed in this study. Identifying new ways to disseminate information during the time constrained initial prenatal visit are needed to ensure improved patient outcomes.

Keywords Prenatal care · Pregnancy guidelines · Pregnancy · Qualitative

Significance Statement

The significance of this study highlights a potential problem to provide patients with all of the education recommended during the first prenatal visit including complex decisions such as prenatal genetic screening. Innovative, technology based educational tools that can deliver patient education outside the clinic are needed.

Introduction

A significant and long-standing problem in healthcare is the timing, volume, and variety of care and education that could be covered during busy prenatal visits. Guidelines for

the content of the first prenatal visit have been developed and endorsed by a variety of professional and public health organizations for over a century. The most recent guidelines for prenatal care, including first prenatal visits, are the 2014 American College of Obstetricians and Gynecologists (ACOG). Early and complete first prenatal visits are promoted as opportunities for screening, identifying, and addressing risk factors to improve pregnancy outcomes, provide important pregnancy education information, and establish the importance of prenatal care. However, little is known about how these guidelines are actually applied in the first prenatal visit.

There has been a rapid expansion of knowledge about the importance of the mother's health before and during pregnancy and an increase in the number of topics to discuss within a time limited clinical encounter to adequately care for pregnant women. For example, ACOG recommends that all pregnant women, regardless of age, disease history or risk status, be routinely offered prenatal genetic screening (ACOG Practice Bulletin No. 77: screening for fetal chromosomal abnormalities 2007). Some research indicates that discussing the importance of breastfeeding during the first

✉ E. Rothwell
erin.rothwell@nurs.utah.edu

¹ College of Nursing, University of Utah, 10 South 2000 East, Salt Lake City, UT 84112, USA

² Division of Medical Ethics and Humanities, University of Utah, 10 South 2000 East, Salt Lake City, UT 84112, USA

prenatal visit may increase rates and duration of breastfeeding (Chung et al. 2008; Clinical Guidelines 2008). However, most care and education provided to women is decided upon by the individual prenatal care provider. It is unknown what care is typically provided and what topics are discussed, especially in the first prenatal visit. Before any interventions or educational tools are developed to improve how prenatal education and screening options are communicated to women, we first need to understand what care is actually provided and what health education topics are discussed.

The goal of prenatal care is to ensure the birth of a healthy baby with minimal risk for the mother through the determination of gestational age, identification of maternal risks, ongoing evaluation of the health status of the mother and fetus, anticipation of problems and necessary interventions, and patient education and communication (ACOG/AAP 2012). Early prenatal care also focuses on assessing maternal risk factors to support early intervention, providing of advice, offering health education, and teaching ways to address the minor problems of pregnancy (Al-Ateeq and Al-Rusaiesh 2015). However, guidelines for this content vary greatly and have been criticized for failing to focus on the pregnant woman (Hanson et al. 2009).

In 1925, the U.S. Department of Labor issued the Standards of Prenatal Care: An Outline for the Use of Physicians (U.S. Department of Labor 1925). Sixty years later in 1989, the U.S. Public Health Service issued a report describing the components of prenatal care, basing their recommendations on the current scientific evidence (PHS 1989). Adherence to these guidelines, as well as the 1959 ACOG guidelines, was examined in the late 1980s. Kogan et al. examined providers' adherence to the subsequently published US P.H.S. 1989 guidelines by interviewing almost 10,000 pregnant women. Almost half of women reported that they failed to receive the recommended early prenatal examinations, laboratory tests, and health education (Kogan et al. 1994). Baldwin, et al. (1994) examined the adherence of 249 prenatal care providers (obstetricians, family physicians, certified nurse midwives) to the ACOG Guidelines of 1959 that had been in place for almost 30 years. They found that the providers followed the well established guidelines on average 80–90% of the time (range 13–94%).

The broad categories in these historical documents remain much the same in the most recent guidelines issued by the American College of Obstetricians and Gynecologists (2014) and separately by the American Academy of Family Practice (Zolotor and Carlough 2014). However, there has been a significant increase in the content of each category with many more patient history questions, laboratory tests, and health education topics recommended on the first prenatal visit. The result of this increased burden in terms of adherence has not yet been examined. The purpose of the current study was to examine the content of the first prenatal

visit within a university hospital clinic. Clinical interactions were audio recorded and the content analyzed to identify adherence to the 2014 ACOG guidelines (ACOG Committee Opinion no. 598: Committee on Adolescent Health Care: The initial reproductive health visit 2014).

Methods

Thirty first prenatal visits were audio recorded. The purpose of the recordings was described to the providers and pregnant women as assessing the type of topics covered in the prenatal visit, such as breastfeeding, vitamins, and prenatal screening. Data collection occurred in a Level 3, academic medical center obstetric clinic serving a diverse group of women receiving care under a variety of health care payment plans. All providers of care and patients were eligible for participation in this study. Patients being seen for their first prenatal visit were approached for study consent and enrolled in the examination room. Providers of care were obstetricians (MDs), certified nurse midwives (CNM), nurse practitioners (NPs), and medical students (MS). Staff involved were medical assistants (MAs). Some first prenatal visits included either an MD or NP, an MD and an NP, a CNM, and an MD and a MS. The recorder was turned on when the patient consented and prior to any interactions with a provider. The recordings were stopped when the patient exited the examination room. Audio-recordings were later transcribed verbatim and were used in the analysis. All visits took place between October 2014 and December 2014. The study was approved by the University of Utah Institutional Review Board and all patients signed written informed consent prior to any study procedures.

Audio recording transcripts were read in their entirety by the researchers. ACOG recommendations for content of first prenatal visit topics were used for comparative analysis (see Table 1. ACOG Guidelines). The transcribed text for all first prenatal visits were uploaded into ATLAS.ti® for analysis. (Atlas.ti 2015). A qualitative content analysis was used to analyze the data. A distinguishing feature of a content analytic approach is the use of a consistent set of codes to designate data segments that contain similar material (Elo and Kynas 2008). Consistent with our work (Rothwell 2011, 2012), the codes were generated from the data, and rather than using search algorithms, careful readings of the data were performed to generate the codes. Then the codes were systematically applied to the transcripts, with the ability to add codes that might have been missed with the initial development of the codebook. After coding was completed, they were summarized to identify the most frequently reported topics across the clinical visits. We addressed trustworthiness and rigor of the data to maintain data integrity during the analysis through methods of credibility and auditability

Table 1 Percent of visits—adherence to ACOG guidelines overall (n = 30 clinic visits)

Guideline clinical visit topic	% of occurrence	Type of provider			
		NP and MD	NP	MD	Other*
Scope of care in office and schedule of visits	100	22%	27%	40%	11%
Routine blood tests	97	12%	29%	49%	7%
Initial history and physical	83	24%	24%	43%	9%
Cervical Cancer if due	80	19%	28%	46%	7%
Urine—dip for protein/glucose and C&S	77	17%	26%	50%	7%
General exam to confirm pregnancy—FHTs	77	19%	17%	50%	13%
Discuss genetic counseling and available testing	73	25%	21%	45%	9%
Prescriptions, vitamins and iron PRN	70	25%	24%	46%	6%
Discuss routine lab studies/ testing	63	11%	25%	56%	9%
Encourage/provide flu vaccine	57	45%	10%	35%	10%
Family medical history	57	25%	20%	50%	5%
Education regarding exercise	53	30%	30%	30%	9%
Assess for/mention of alcohol &/or tobacco &/or drug use	50	15%	26%	51%	9%
Education re nutrition	27	24%	24%	45%	7%
Expected course of pregnancy or general discussion	20	26%	22%	43%	9%
Partner information	13	38%	15%	38%	8%
Screen for/mention of depression	7	40%	20%	20%	20%
Complete/mention of needs assessment	7	0%	0%	100%	0%
Counseling regarding specific complications	3	23%	33%	40%	5%
Discuss high risk conditions	3	75%	0%	25%	0%
Education regarding labor and delivery	3	0%	0%	100%	0%
Education regarding tobacco use and smoke exposure	3	100%	0%	0%	0%
Education regarding seat belts	3	0%	0%	100%	0%
Genetic history	0	n/a	n/a	n/a	n/a
Preterm labor risk, education and prevention	0	n/a	n/a	n/a	n/a
Domestic violence screening	0	n/a	n/a	n/a	n/a
Education regarding working	0	n/a	n/a	n/a	n/a
Education regarding air travel	0	n/a	n/a	n/a	n/a
Education regarding routine dental	0	n/a	n/a	n/a	n/a
Education regarding alcohol/drug consumption	0	n/a	n/a	n/a	n/a
Education regarding over the counter medications	0	n/a	n/a	n/a	n/a
Education regarding pets	0	n/a	n/a	n/a	n/a
Assess barriers to care—transportation issues	0	n/a	n/a	n/a	n/a
Access barriers to care—child care issues	0	n/a	n/a	n/a	n/a
Access barriers to care—work schedule	0	n/a	n/a	n/a	n/a
Encourage enrollment in prenatal classes	0	n/a	n/a	n/a	n/a
Gestational diabetes mellitus if at risk	0	n/a	n/a	n/a	n/a

(McBrien 2008). Upon completion of the coding, all data were queried within Atlas.ti® and reviewed by the research team. This allowed reviewing, verifying, and auditing the coding schema and associated data.

After the initial analysis was complete, the content of the clinical visits was compared to the ACOG guidelines for the first prenatal visit (see Table 1). Any text addressing any component of each of the ACOG categories was

counted as addressing the category. Incidence and density of topics were determined by the frequency of codes. However, because we relied only on verbal content, some aspects of the physical exam may have been missed if the provided did not mention it (i.e. I am taking your blood pressure now.) Descriptive statistics were used to further characterize the adherence to ACOG recommendations in these first prenatal visits by type of provider (see Table 1).

Sample

The analysis included thirty separate clinical visits of women seen for their first prenatal visit. An unknown number of providers of care were included and some providers could have been included more than once. Data collection was over one month and allowed a range of different providers and patients to be included in this study. Selection of participants and providers was random. Of the providers recorded there were 5 visits that included both an MD and NP, 8 visits with NP only, 14 visits with MD only, 2 with a MD and MS, and 1 with CNM. All participants and providers were English speaking. Demographic data for the patients and providers were not collected. The primary purpose of this study was the visit content discussed and adherence to ACOG guidelines for the initial reproductive visit.

Results

Incidence of Topics Discussed

ACOG Guidelines provide a comprehensive list of topics for education and counseling to be provided at the first prenatal visit. The percent of visits in which adherence to ACOG Guidelines was identified is shown in Table 1. Identification of adherence included mere mention of a topic and extensive discussion and/or provision of specific ACOG-recommended care or patient education. Yet, the time devoted to each topic was not accessed. In other words, these results do not represent the extent or the amount of time dedicated to the specific recommended content of prenatal care.

In this study, a clinic overview was provided to every woman. This included a number of topics, i.e. schedule of visits, availability of providers, and making appointments. In almost every visit, there was evidence of some history taken or a portion of a physical examination provided, as well as mention of routine blood testing.

Discussion of cervical cancer/pap smears and urine testing occurred in 80–83% of the visits. A confirmatory examination for pregnancy in this sample, largely represented by auscultation of fetal heart tones, occurred in three quarters of the visits. A discussion of routine laboratory testing and available genetic testing was found in 70–75% of the visits. Prenatal vitamins and iron were also routinely addressed in over 70% of visits, and flu vaccine was offered (57%).

Gathering of a family medical history, assessment of and education about alcohol, tobacco, and/or drugs were found in slightly over half the visits. Exercise counseling occurred in about half the visits. As specific complications were not known for each woman, any mention of complications in the transcripts, such as twins or vaginal birth after cesarean, was counted as fulfilling the ACOG recommendation,

occurring in 26% of visits. Any discussion of the process of pregnancy was identified as fulfilling the ACOG recommendation of educating the women about the expected course of pregnancy, found in 20% of visits. Psychosocial needs assessment visit guidelines were followed in less than 10%.

None of the recordings indicated that a complete initial history, assessment for pre-term labor risk, or complete physical examination was completed (i.e. abdomen, breasts and inquiries about bladder and bowel functions, weight gain, and vital signs). ACOG guidelines indicate a complete needs assessment should be done. This complete assessment was not found on recordings of any visits although additional visits could have addressed these patient needs. Screening for domestic violence or depression was not found in any recording, with depression rarely addressed in the first prenatal visit. Education on most ACOG recommended first prenatal visit topics (labor and delivery, working, air travel, dental care, over the counter medication use, pets and seat belt use) was rarely or never found on recordings. Psychosocial issues were rarely addressed on the audio tapes. Prenatal classes, while often not attended until late in pregnancy, were never mentioned nor was there an investigation of any barriers to receiving care in any visit. Specific content of the routine laboratory and diagnostic testing was not discussed in the recordings or known to researchers. As no histories of the women were available to researchers, women who were at risk for gestational diabetes (GDM) or pre-term labor were not identified to know who merited education or early screening. GDM screening was not discussed with any woman.

Discussion

First prenatal visits are often scheduled throughout an MD/CNM/NP's clinical day, interspersed with other types of pregnancy and gynecologic patient visits. Providers work under time constraints with multiple patients scheduled in quick succession. This can result in abbreviated visits, omission of ideal health education, reliance on other staff to collect information and provide patient education, and addressing only the most obvious problems. Given clinical time constraints, many providers rely on provision of printed materials to patients to compensate for the lack of time available for direct face-to-face patient education. Whether printed materials are an effective or optimal approach to delivering patient education or not, is questionable (Nolan 2009). Further, some topics may be discussed in future visits to account for the limited time in only one clinical visit.

The study results suggest that several ACOG guidelines are being addressed, particularly those related to medical care and intervention—vitamins and iron, blood and urine laboratory studies, flu vaccine, and screening for cervical

cancer. However, the extent of discussion or amount of time dedicated to meeting ACOG recommendations, are unknown. For example, the mention of “genetic screening” in the transcribed audio recording was coded and reported as “addressed” during the prenatal visit. However, genetic screening is a complex topic and it is unknown if it was fully discussed during the visit or was it merely mentioned that information about genetic screening as provided in the printed material distributed to the patient.

It is unknown what information was already contained in the EMR, although the EMR format is known to allow for the documentation of all the ACOG recommended information. Initial historical information, family history, genetic history, and risk of pre-term labor could have already been in the EMR or data could have been entered outside the examination room. Video recordings, rather than audio recordings, could have revealed that a physical examination occurred, as there was no specific mention of a completed physical examination in the audio recording. Finally, as discussed above, first visit prenatal education recommended by ACOG may have occurred in a different format, for example, printed materials distributed to patients. Further, some of the patients may have undergone a “confirmatory pregnancy” appointment and topics not discussed in this recorded visit could have occurred as well as in future visits. Audio recordings revealed that packets of prenatal information were often given, however the exact content is unknown.

The prenatal visit discussions in this study were focused on information gathering with mostly closed ended questions used by providers, usually resulting in patient responses of “yes or no”. This style of questioning discourages full and meaningful responses that could have provided additional information of importance to patient care. The providers in this study addressed concerns that were expressed by the women, but rarely asked women about their concerns or fears. Discussing a woman’s concerns and fears can reveal risk factors that should be addressed or a further discussion can allay fears once identified. Many providers referenced the authoritative recommendations of health care profession groups, such as ACOG and others, without further discussion. An explanation of the risks, benefits, and/or alternatives to that recommended care was rarely offered.

A larger question that should be considered is how the content of the ACOG recommendations can be addressed while including patient driven needs and preferences in these guidelines. Many of the components of the ACOG Guidelines are based on tradition with a limited number of topics supported by careful research (Zolotor and Carlough 2014; Kirkham et al. 2005). Further research is needed to explore the value of all of the components, with the goal of including only those that have proven value. Women’s needs and preferences have not been routinely included in published guidelines (Hanson et al. 2009), implying that these are of

lesser importance or additional avenues outside the clinic visit need to be explored to address patient.

Lastly, forming relationships with patients requires time, the use of open-ended questions, and repeat visits. It is unreasonable to assume that such a close relationship will occur at the first prenatal visit. This study demonstrated the issues of provider time constraints based on their recorded comments are related to lack of adherence to ACOG’s education recommendations, and lack of screening for unstated problems.

Limitations

This study took place in one outpatient clinic in a Level 3, academic medical center obstetrics clinic. Other practice settings, such as a private office, birth center or home birth setting, may structure first prenatal visits very differently. The majority providers of care were MDs and no comparisons can be made of their care to the care of the few CNMs or NPs in this study. Further, the content of the visit was descriptively compared between different providers. It would be interesting to assess how different professionals prioritize different topics during time limited clinical encounters as well as how patients’ driven questions influence the topics covered. Researchers lacked access to knowledge about existing information in the EMR or when the EMR was used. Audio recordings missed the visual information and nuances of a video recording, which would have provided additional information about first prenatal visit content. Lastly, content analysis did not address the extent to which ACOG guidelines were followed, nor the amount of time dedicated to provision of care or patient education. Future studies should include these aspects of ACOG guideline adherence to better understand the effectiveness of prenatal care and include additional prenatal visits.

Conclusion

This study demonstrated that standard ACOG guidelines for first prenatal visit content were inconsistently followed at one site by one group of providers based on audio recordings. Providers more closely adhered to ACOG guidelines that addressed vitamin supplementation, laboratory testing, flu vaccinations, and cervical cancer screening. Content addressing many components of the examination, education about pregnancy, and screening for an identification of psychosocial risk was identified less often. Providers routinely used an interview style that did not elicit extensive information. While the ACOG guidelines may include many components that are traditional in addition to those based on evidence, the guidelines were not closely followed in this study.

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