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American College of Obstetricians and Gynecologists practice bulletins: An overview

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Objective

The purpose of this study was to review the American College of Obstetricians and Gynecologists practices bulletins to quantify the type of recommendations and references and determining whether there are any differences between obstetric and gynecologic bulletins.

Study design

All practice bulletins published from June 1998 to December 2004 were reviewed. Odds ratios and 95% confidence intervals were calculated.

Results

The 55 practice bulletins contained 438 recommendations of which 29% are level A, 33% level B, and 38% level C. The 55 bulletins cite 3953 references of which 17% are level I, 46% level II, 34% level III, and 3% others. Level A recommendations were significantly more likely among the 23 gynecologic than 32 obstetric bulletins (37% versus 23%, odds ratios 1.95, 95% confidence intervals 1.28, 2.96). The study types referenced in obstetric and gynecologic bulletins were similar (P > .05 for comparison of levels I, II, and III and meta-analysis references).

Conclusion

Only 29% of the American College of Obstetricians and Gynecologists recommendations are level A, based on good and consistent scientific evidence.

To improve the quality of health care and decreasing its cost and diminishing professional liability, the American College of Obstetricians and Gynecologists (ACOG) publishes evidence-based practice guidelines.[1] ACOG practice bulletins are perhaps the most influential publications for clinicians involved with obstetric and gynecologic care. The topics for these bulletins are selected on the basis of unexplained variations in

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practice or difference between scientific knowledge and clinical practice.[1] After extensive search of the documents published in English, the literature is analyzed according to the method used by the U.S. Preventive Services Task Force. Each report is classified as being level I, II-1, II-2, II-3, III, meta-, decision-, or cost-benefit analysis. The synthesis of the literature leads to recommendations, categorized as A, B, C, D, or E, which are based on the highest level of evidence (Table I).[1]

Table I. Classification of references and recommendations, according to the U.S. Preventive Services Task Force*

References	
Level I	Evidence obtained from at least 1 properly conducted randomized clinical trial
Level II-1	Evidence obtained from well-designed controlled study without randomization
Level II-2	Evidence from well-designed cohort or case-control studies, preferably from more than 1 center or research group
Level II-3	Evidence obtained from multiple time series with or without intervention
Level III	Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees
Meta-analysis	A systematic structured process that is more than a literature review
Decision analysis	Use of mathematical models of sequences of several strategies to determine which is optimal
Cost-efficient analysis	Comparison of health care practice or techniques in term of the relative economic efficiencies in providing health benefits
Recommendations	
Level A	Based on good and consistent scientific evidence
Level B	Based on limited or inconsistent scientific evidence
Level C	Based primarily on consensus and expert opinion
Level D	Fair evidence against the recommendation
Level E	Evidence against the recommendation

*Adapted from American College of Obstetricians and Gynecologists. Reading the medical literature: applying evidence to practice. Washington DC: American College of Obstetricians and Gynecologists; 1998.

While reading these publications individually, it occurred to us that clinicians would benefit from an overview of all practice bulletins. A summary of the number of these bulletins, recommendations, and their subtypes and the type of studies used to derive them would allow a greater appreciation for ACOG publications. Furthermore, the summation would allow researchers to focus on the areas in which there are insufficient type I studies or lack of level A recommendations.

The purpose of this descriptive study was to review the practice bulletins published by ACOG and quantify the following: (1) number and grades of recommendations, (2) types of the reports cited in the references section, and (3) source of the references. Gilbert and Pitkin[2] recently classified the site of publications for obstetric-gynecology manuscripts

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into weekly journals (Journal of the American Medical Association, New England Journal of Medicine, and Lancet), monthly obstetric-gynecologic journals (American Journal of Obstetrics and Gynecology and Obstetrics and Gynecology), and others. Moreover, we wanted to see whether there were any differences between the obstetric and gynecologic practice bulletins with regard to these 3 variables.

Material and methods

From the list of titles published in December 2004,[3] we identified all current ACOG practice bulletins. Each publication was reviewed by 1 author (S.P.C.), and the following information was entered in Excel spreadsheet (Microsoft, Seattle, WA): number, time of publication, title, clinicians who assisted with the development of the bulletins, total number as well as the type of recommendations, the total number of references, and the quality of the study, as determined by the criteria published by U.S. Preventive Services Task Force. We excluded practice bulletins that have been withdrawn along with education bulletins, practice patterns, and committee opinions.

Student *t* test or χ^2 tests were used where applicable. For proportion data, odds ratios (ORs) and 95% confidence intervals (CIs) were calculated. Pearson correlation coefficients were calculated to determine whether there was a relationship between the grade of recommendation and the types of studies referenced or the journals in which they were published. The SAS package (SAS Institute, Cary, NC) was used and $P < .05$ was considered significant.

Results

During 78 months (June 1998, when the first one was published, to December 2004), 58 practice bulletins were published by ACOG, at the rate of 1 every 1.3 months. Three of these (numbers 2, 5, 32) have been withdrawn, leaving 55 for review.[4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58]

All but 1[14] was credited as being developed with the assistance of at least 1 clinician. Overall there were 76 physicians, or a median of 1.0 with 95% CI of 1.2 and 1.6 per bulletin, that were mentioned as developing these publications. The maximum number of assistants for 1 bulletin was 5, and this one was a collaborative effort between ACOG and the Society of Maternal-Fetal Medicine.[56]

Among these 55 bulletins,[4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58] there were 438 recommendations. Twenty-nine percent (n = 128) were level A, 33% (*n* = 143) were level B, and 38% (*n* = 167) were level C. There were no level D or E recommendations. Twenty-seven percent (15/55) of the bulletins had no level A recommendations,[5, 8, 9, 10, 20, 21, 29, 31, 34, 40, 42, 47, 48, 56, 58] and 7% (4/55) had only level C.[8, 20, 29, 47] The median number of recommendations per bulletin was 8.0 ± 3.1, with 2.3 ± 2.1 being level A, 2.6 ± 2.1 being level B, and 3.0 ± 1.9 being level C.

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There were 3953 references cited among these 55 practice bulletins.[4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58] Seventeen percent (n = 686) were level I-1; 3% (n = 108) were level II-1; 25% (n = 974) were level II-2; 19% (n = 738) were II-3; 34% (n = 1327) were level III ; 3% (n = 104) were meta-analyses; 0.3% (n = 11) were cost-effective analyses; and 0.1% (n = 5) were decision analyses.

Whereas 5% (187) of the cited references were published in the New England Journal of Medicine, 3% (111) appeared in the Journal of the American Medical Association and 2% (96) in Lancet. Thus, 10% (394/3953) appeared in the 3 weekly general journals. Overall, 30% (1198) of the references were published in the 2 major obstetric-gynecologic journals (17% [669] in the American Journal of Obstetrics and Gynecology and 13% [529] in Obstetrics and Gynecology). The remaining 2361 references (60%) were published in other sources. Interestingly, 1% (38) of the references were from the Cochrane database and 0.5% (18) were ACOG publications.

Of the 55 practice bulletins,[4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58] 58% (32) focused on obstetric topics[4, 5, 7, 9, 10, 11, 13, 14, 18, 20, 21, 22, 23, 25, 28, 30, 31, 32, 33, 36, 37, 38, 40, 43, 44, 47, 48, 49, 52, 54, 55, 56, 58] and 42% (23) on gynecologic (Tables II and III).[5, 8, 12, 15, 16, 17, 19, 22, 24, 26, 27, 29, 34, 35, 39, 41, 42, 45, 46, 50, 51, 53, 57] Comparison of the bulletins in the 2 areas indicates that gynecologic bulletins had significantly different distribution for the 3 levels of recommendations (Figure; p = 0.007). Bulletins focused on gynecologic issues had significantly more level A recommendations (37%; 74/202) than those dealing with obstetrics (23%; 54/236; OR 1.95, 95% CI 1.26, 3.02).

Table II. **The obstetric practice bulletins**

		Recommendations*				References								
Ref	**Title**	**Total**	**Level A, %**	**Level B, %**	**Level C, %**	**Ref**	**Level I, %**	**Level II-1, %**	**Level II-2, %**	**Level II-3, %**	**Level III, %**	**MA, %**	**DA, %**	**CEA, %**
4	Premature rupture of membrane	7	71	0	29	70	17	6	14	34	20	9	0	0
6	Prevention of Rh D alloimmunization	8	50	0	50	58	0	5	7	17	69	0	0	2
7	Thrombocytopenia in pregnancy	8	13	38	50	72	6	0	11	25	58	0	0	0
9	Management of herpes in pregnancy	7	0	43	57	50	10	0	6	24	58	0	2	0
10	Antepartum fetal surveillance	9	0	100	0	62	23	2	21	16	35	2	2	0
11	Induction of labor	10	60	20	20	70	54	3	4	4	30	4	0	0
13	Intrauterine growth restriction	4	50	0	50	108	6	2	27	20	39	6	0	0
14	External cephalic version	8	13	63	25	41	29	2	15	44	7	0	2	0
18	Operative vaginal delivery	7	29	43	29	42	33	2	33	14	14	2	0	0
20	Thromboembolism in pregnancy	9	0	0	100	73	3	0	23	8	66	0	0	0

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Ref	Title	Total	Level A, %	Level B, %	Level C, %	Ref	Level I, %	Level II-1, %	Level II-2, %	Level II-3, %	Level III, %	MA, %	DA, %	CEA, %
21	Perinatal viral and parasitic infections	10	0	50	50	131	3	2	11	31	52	0	0	1
23	Fetal macrosomia	5	20	60	20	94	1	1	53	28	14	3	0	0
25	Management of recurrent early pregnancy loss	8	25	25	50	105	15	1	38	23	17	6	0	0
28	Prenatal diagnosis of fetal chromosomal abnormalities	9	11	0	89	76	9	1	28	32	29	1	0	0
30	Chronic hypertension in pregnancy	8	13	50	38	52	6	2	10	25	48	10	0	0
31	Gestational diabetes	9	0	67	33	105	12	6	50	16	16	0	0	0
32	Assessment of risk factors for preterm birth	4	25	75	0	80	20	3	33	10	30	5	0	0
33	Diagnosis and management of preeclampsia and eclampsia	10	40	30	30	63	16	0	24	19	41	0	0	0
36	Obstetrics analgesia and anesthesia	11	18	27	55	116	33	10	22	19	15	2	0	0
37	Thyroid disease in pregnancy	8	13	25	63	51	0	6	35	16	43	0	0	0
38	Perinatal care at the threshold of viability	7	29	43	29	32	3	0	44	25	28	0	0	0
40	Shoulder dystocia	5	0	40	60	51	4	0	37	29	29	0	0	0
43	Management of preterm labor	7	57	43	0	74	55	1	11	5	26	1	0	0
44	Neural tube defects	8	50	25	25	81	6	0	26	15	52	1	0	0
47	Prophylactic antibiotics in labor and delivery	4	0	0	100	59	36	2	12	10	36	5	0	0
48	Cervical insufficiency	6	0	67	33	56	13	0	43	16	27	2	0	0
49	Dystocia and augmentation of labor	7	29	43	29	61	41	2	23	15	8	10	2	0
52	Nausea and vomiting of pregnancy	9	33	44	22	94	11	2	34	9	40	4	0	0
54	Vaginal birth after cesarean delivery	7	29	29	43	105	1	0	48	16	28	4	1	3
55	Management of postterm pregnancy	6	50	0	50	69	30	6	36	9	14	4	0	0
56	Multiple gestation: complicated twin, triplet, and high-order multifetal pregnancy	8	0	38	63	141	9	6	34	17	34	0	0	0
58	Ultrasonography in pregnancy	3	0	33	67	34	12	0	26	29	26	6	0	0

*The percent for 3 recommendations add up to 100% and are based on total of 236 recommendations; the percent for the 8 types of references add up to 100% and are based on 2376 citations in the obstetric bulletins. *Ref*, Reference; *MA*, meta-analysis; *DA*, decision analysis; *CEA*, cost-effectiveness analysis.

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Table III The gynecologic practice bulletins

		Recommendations*				References								
Ref	Title	Total	Level A, %	Level B, %	Level C, %	Total	Level I, %	Level II-1, %	Level II-2, %	Level II-3, %	Level III, %	MA, %	DA, %	CEA, %
5	Medical management of tubal pregnancy	4	0	75	25	31	6	0	10	52	29	0	0	3
8	Prophylactic oophorectomy	6	0	0	100	33	3	6	27	30	33	0	0	0
12	Medical management of endometriosis	7	29	43	29	99	23	6	13	4	52	2	0	0
15	Management of anovulatory bleeding	4	50	0	50	38	29	0	21	13	34	3	0	0
16	Premenstrual syndrome	12	33	42	25	60	35	8	12	10	35	0	0	0
17	Surgical alternatives to hysterectomy in the management of leiomyomas	10	40	10	50	64	14	2	17	27	41	0	0	0
19	The use of hormonal contraception in women with coexisting medical conditions	15	40	40	20	92	7	2	38	22	32	0	0	0
22	Prevention of deep vein thrombosis and pulmonary embolism	4	50	0	50	65	12	0	25	2	55	6	0	0
24	Antibiotic prophylaxis for gynecologic procedures	12	33	25	42	38	24	3	11	8	42	11	0	3
26	Emergency oral contraception	10	40	20	40	38	18	0	3	45	29	5	0	0
27	Medical management of abortion	6	33	33	33	89	13	17	9	43	16	2	0	0
29	Use of botanicals for management of menopausal symptoms	4	0	0	100	48	23	4	0	15	54	4	0	0
34	Management of infertility caused by ovulatory dysfunction	5	0	100	0	58	9	2	24	17	48	0	0	0
35	Diagnosis and treatment of cervical carcinoma	8	25	50%	25	58	12	0	17	24	45	2	0	0
39	Selective estrogen receptor modulators	9	56	0	44	67	70	0	6	1	19	3	0	0
41	Polycystic ovary syndrome	14	29	21	50	101	18	2	42	13	24	2	0	0
42	Breast cancer	4	0	50	50	94	19	1	16	16	39	9	0	0

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Ref	Title	Total	Level A, %	Level B, %	Level C, %	Total	Level I, %	Level II-1, %	Level II-2, %	Level II-3, %	Level III, %	MA, %	DA, %	CEA, %
	screening													
45	Cervical cytology screening	12	42	25	33	79	5	1	37	15	33	5	0	4
46	Benefits and risks of sterilization	7	71	0	29	104	11	2	42	15	30	0	0	0
50	Osteoporosis	10	40	50	10	78	46	8	17	10	17	1	0	1
51	Chronic pelvic pain	19	37	47	16	150	29	1	15	20	31	4	0	0
53	Diagnosis and treatment of gestational trophoblastic disease	13	54	15	31	49	8	0	24	12	55	0	0	0
57	Gynecologic herpes simplex virus infection	7	71	29	0	44	14	0	18	39	30	0	0	0

*The percent for 3 recommendations add up to 100% and are based on total of 207 recommendations; the percent for the 8 types of references add up to 100% and are based on 1557 citations in the gynecologic bulletins. *Ref*, Reference; *MA*, meta-analysis; *DA*, decision analysis; *CEA*, cost-effectiveness analysis.

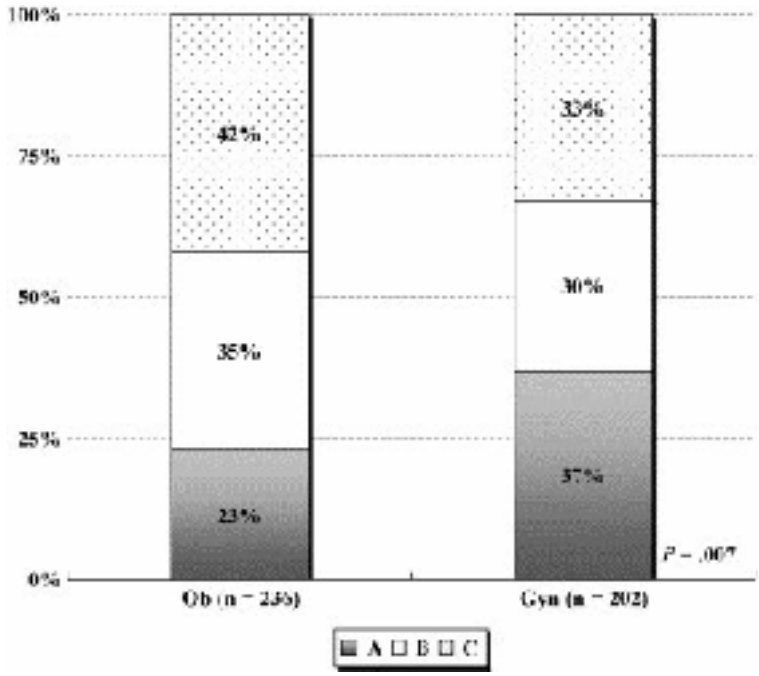

Figure Recommendations in obstetric and gynecologic ACOG practice bulletins, classified according to the criteria promulgated by the U.S. Preventive Services Task Force. Level A, based on good and consistent scientific evidence; level B, based on limited or inconsistent scientific evidence, and level C, based primarily on consensus and expert opinion.

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The mean number of level A recommendations were significantly higher in gynecologic bulletins than obstetric; otherwise the 2 groups were similar with regard to level B or C conclusions as well as the types of studies referenced (Table IV). Similar fractions of obstetric (31% or 10/32)[9, 10, 20, 21, 31, 40, 47, 48, 56, 58] and gynecologic bulletins (22% or 5/23) [5, 8, 29, 34, 42] had no level A recommendations (OR 1.64, 95% CI 0.41, 7.21). Moreover, the number of bulletins with only level C recommendations was similar for the 2 groups (6% [2/32] for obstetrics[20, 47] and 9% [2/23] for gynecologic bulletins[8, 29]: OR 0.70, 95% CI 0.05, 10.44).

Table IV. Comparison of obstetric and gynecologic practice bulletins.

	Obstetric (*n* = 32)	**Gynecologic (*n* = 23)**	***P***
Recommendations/bulletin	8 (2.5)	8 (7)	.148
Level A	1 (2.5)	4 (3)	.054
Level B	3 (1.5)	2 (4)	.950
Level C	3 (2)	3 (2)	.899
References/bulletin	70 (40)	64 (48)	.292
Level I	8.5 (11.5)	9 (12)	.168
Level II-1	1 (2)	1 (2)	.519
Level II-2	16 (17)	11 (9)	.704
Level II-3	12 (12)	12 (11)	.316
Level III	21.5 (19)	26 (16)	.227
Meta-analysis	1 (3.5)	1 (2)	.198
Published in			
Weekly general journals*	10% (229)	10% (165)	< .001
AJOG and Obstet Gynecol	39% (933)	17% (265)	
Other sources	51% (1214)	73% (1147)	

Data presented as median and interquartile range or percent (*n*). *AJOG*, American Journal of Obstetrics and Gynecology.

∗ Includes only New England Journal of Medicine, Journal of the American Medical Association, and Lancet.

The tier of journal publications differed significantly between obstetric and gynecologic bulletins, with a greater proportion of articles published in weekly general journals for obstetric bulletins (Table II).

Several Spearman correlation coefficients were calculated to see whether the type of studies referenced in the bulletin or the journal in which the article was published was correlated with the type of recommendation (Table V). In all the practice bulletins and for obstetric subsets, there was a significant correlation between level A recommendations and level I references ($P < .05$). Obstetric level C recommendations and level III references were also significantly correlated ($P = .02$). Three significant correlations were noted for the references published: (1) level A recommendations in gynecologic bulletins and publications in the American Journal of Obstetrics and Gynecology and Obstetrics

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and Gynecology (*P* = .008); (2) level B recommendations in gynecologic bulletins and other journals (*P* = .02); and (3) level C recommendations in obstetric bulletins and other journals (*P* = .03).

Table V . Correlation between levels of recommendations, levels of references, and journal published in which the references were published.

	All practice bulletins			Obstetric practice bulletins			Gynecologic practice bulletins		
	A	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
References									
Level I	**0.27** *	0.13	-0.16	0.23	0.12	-0.24	0.14	0.07	-0.008
Level II-1	0.07	0.12	0.10	0.20	-0.004	0.12	-0.10	0.25	0.08
Level II-2	-0.01	0.15	0.03	-0.08	0.04	0.05	0.32	0.27	-0.07
Level II-3	-0.09	0.18	0.12	-0.19	0.12	0.28	0.18	0.27	-0.12
Level III	0.02	0.05	0.24	-0.08	-0.07	**0.42** ‡	0.15	0.20	-0.09
Meta-analysis	0.16	-0.14	-0.15	0.37	-0.23	-0.38	-0.04	-0.01	0.19
Published in									
Weekly general journals‡	-0.06	-0.10	0.11	-0.15	-0.13	0.26	0.09	-0.12	-0.10
AJOG and Obstet Gynecol	-0.02	0.07	-0.05	0.08	0.09	-0.26	**0.47** §	0.01	0.13
Others	0.21	0.18	0.18	0.06	0.01	**0.45** ‖	0.24	**0.43** *	-0.13

Data presented as Spearman correlation (R); *P* < .05, for the correlation, are in bold; otherwise the *P* > .05. *AJOG*, American Journal of Obstetrics and Gynecology; *Obstet Gynecol*, Obstetrics Gynecology.

∗ *P* = .04.
‡ *P* = .02.
‡ New England Journal of Medicine, Journal of the American Medical Association, Lancet.
§ *P* = .03.
‖ *P* = .01.

Comment

Few publications are as influential for clinicians involved with obstetrics and gynecology in the United States as the ACOG practice bulletins. They search the relevant studies on the topics, synthesize the literature, and condense it to practical recommendations. Additionally, using the guidelines promulgated by the U.S. Preventive Services Task Force, these documents objectively classify not only the publications that lead to guidelines but also the recommendations themselves (Table I). Since its first publication in June 1998,[4] the practice bulletins have become fundamental reading for clinicians. An overview of all bulletins over the last 6.5 years not only provides interesting insights but also documents the areas with deficient clinical research that should lead to funded or multicenter research to fill the gaps in our knowledge.

There are 4 findings of this summary article. First, it provides an overview of how many recommendations (438) are contained in the 55 bulletins and their categories (29% level A, 33% level B, and 38% level C) as well as the type of studies that led to them. Specifically, the 438 guidelines are based on 3953 references, 17% of which are level I,

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46% level II (includes II-1, II-2, II-3), 34% are level III, and the remaining 3% are meta-, decision, or cost-efficient analyses. Within level II studies, II-1 was the least common (3% or 108/3953) and II-2 the most common (25% or 974/3953).

The finding of lack of randomized clinical trials and systemic review articles is consistent with an editorial by Scott,[59] who noted that 70% of what obstetricians and gynecologists do are without these types of studies. Although randomized trials are the ideal way to avoid biases inherent in observational reports,[60] it should not be assumed that clinical outcome can not be improved without them,[61] that all randomizations adhere to concealment of the allocation process,[62] and that all observational reports are misleading.[63] Lastly, as pointed out by Parer,[64] in obstetrics the availability of randomized clinical trials do not always translate into clinical acceptance and compliance. Despite these arguments, the review shows the need for additional well-conducted, randomized clinical trials to avoid biases and improve the outcomes.

The second finding of the review is that it provides, at a quick glance, which topic in the field has what type of publication and level of recommendation (Tables II and III). By sorting through the tables, it is feasible for clinicians and researchers alike to determine what kind of publications have been done for a given topic. From Tables II and III, one can determine which subject matter has the least or the most randomized trials, meta-, decision, cost-effective analyses, publications in weekly journals, and the strongest recommendations.

The third finding of the review is that gynecologic bulletins had much more level A recommendations than obstetric ones (Figure). Possible explanations for this disparity include that it is more feasible to do randomized trials among nonpregnant than gravid patients or that the caliber of the journals in which the studies are published are significantly different. But the types of studies are similar for obstetric and gynecologic bulletins, and the references cited for obstetric treatise are significantly more likely to appear in weekly journals or the 2 major journals than those in gynecologic bulletins (Table IV). Perhaps an overview of just quantifying the recommendations and types of reference is insufficient to explain the disparity. An in-depth analysis of each recommendation and the references leading to them may explain the difference between the 2 types of bulletins.

The fourth finding relates to the type of recommendations and its relationship to the quality of the journal in which the references were published. Level A recommendations in obstetric bulletins are significantly related to level I references ($r = 0.40$ and $P = .02$), but such correlation does not exist for gynecologic bulletins. Moreover, there is a significant correlation between level C recommendations in obstetric bulletins and level III references, but such a relationship does not exist for gynecologic topics. Interestingly, there was no relationship with publications in the weekly general journals and the 3 types of recommendations. Whereas publications in other journals correlate significantly with level C recommendations in obstetric bulletins, they are related to level B recommendations in gynecologic bulletins. These relationships, although interesting, are

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hard to explain because the bulletins do not cite the specific reference that led to a particular recommendation.

There are limitations of the review that should be acknowledged. Like any other summary, a review article is hampered by the quality of publications it summarizes. But because the practice bulletins are developed arduously and with predefined objective criteria, the findings of this review do represent the current knowledge in obstetrics and gynecology. Even though we did find some minor errors in the classification of the references cited (available from the corresponding author), they were minimal and do not mitigate against the conclusion of the bulletins or this review. A potential problem is that since the publication of the bulletin, additional publications may have potentially strengthened or weakened the recommendations. We should acknowledge that ACOG has a vast array of other publications, and we examined only the practice bulletin. Lastly, we did not review or count the references cited in the meta-, decision, or cost-effectiveness analyses to determine the total number of randomized clinical trials on which the ACOG recommendations are based.

The review does suggest additional things clinicians and ACOG can do to reach the stated goal of the practice bulletins: optimizing the outcomes and minimizing the cost and the likelihood of litigation claims. Linking the recommendations with references cited in the bulletin will allow a clearer understanding on how they are derived. A succinct summary of just the recommendations, available on a Web site or a pocket-sized book, could increase their awareness and possibly their compliance. Updating the recommendations annually or just confirming that there are no changes in them, would allow more confidence in complying with the suggestions. This could be done at ACOG or on the Obstetrics Gynecology Web site.

There is, it seems, a need to confirm or refute whether the publication of the guidelines has actually improved the outcome and protected against unnecessary litigation.[65] We need to compare the practice bulletins in our specialty with those of others to see how other fields practice and whether there are things we can do to improve the care of the women. Because the U.S. Preventive Services Task Force did suggest classifying recommendations as level D or E,[1] the bulletin should consider using them or let the readers know why they are not being used. Lastly, when one bulletin is replaced, as was the case with vaginal birth after cesarean delivery,[54, 66] there should be a clear statement on the changes being made and the publications that prompted them.

In summary, among 438 recommendations made by ACOG, less than one third are based on good and consistent scientific evidence. Moreover, for every 10 references cited, not even 2 are a properly designed randomized clinical trial. The practice bulletins overview can be used by ACOG or the National Institute of Child Health and Human Development to focus and fund research in common obstetric and gynecologic conditions that lack adequately designed study.

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