

# Contraceptive Counseling in Managed Care: Preventing Unintended Pregnancy in Adults

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**Abstract** This study examines contraceptive counseling received by adult women in their managed care plans and the relationship between counseling and women's contraceptive attitudes and practices. Telephone interviews were conducted with a random sample of 898 women ages 18 to 44 enrolled in a commercial health maintenance organization (HMO) or point-of-service (POS) health plan. Counseling received in the past 2 years was measured on three dimensions: exposure through any communication channel; content of information; and personalization of discussion. Multiple logistic regression analysis was used to examine the determinants of counseling and the relationship between counseling and four outcomes: satisfaction with counseling received, self-efficacy for preventing unintended pregnancy, current use of contraception (if at risk of unintended pregnancy), and intent to contracept in the next year (if at risk). Overall, 60.5% of women were at risk of unintended pregnancy; among those at risk, 69% received any counseling in the past 2 years, compared with 38% among those not at risk. Receiving personalized counseling (as opposed to no counseling or only informational counseling) significantly increases the odds of satisfaction with counseling, current contraceptive use, and intent to contracept. Informational counseling alone (without personalization) significantly increases the odds of contraceptive use. Women ages 40–44 were less likely than younger women to receive counseling and to use contraception if at risk of unintended pregnancy. We conclude that receiving contraceptive counseling in managed care is associated with contraceptive attitudes and practices among adults and that there is substantial room for quality improvement in the provision of contraceptive counseling.

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## INTRODUCTION

**U**nintended pregnancy—that is, pregnancies that are mistimed or unwanted at the time of conception—is an important public health problem in the United States. According to the 1995 National Survey of Family Growth, 49% of pregnancies and 31% of births were unintended, and 54% of unintended pregnancies ended in abortion. The problem is not limited to adolescents, as is commonly thought. While the percentage of pregnancies that are unintended is highest among women under age 18 (about 83%), relatively high proportions are apparent in adult women at the early and later stages of the reproductive age span: 59% of pregnancies among women ages 20 to 24 are unintended, and 51% of pregnancies in women ages 40 and over are unintended. Over their lifetimes, about 48% of U.S. women have an unintended pregnancy, and 28% have an unplanned birth.<sup>1</sup> The social, economic, and health consequences (to women, children, and families) of unintended pregnancy have been documented by a committee of the Institute of Medicine.<sup>2</sup>

A Healthy People 2010 objective is to increase the rate of intended pregnancy to at least 70% of all pregnancies.<sup>3</sup> One approach to reducing rates of unintended pregnancy is providing contraceptive counseling during primary care visits. Numerous professional associations (including the American College of Obstetricians and Gynecologists, American Academy of Family Physicians, and American Academy of Pediatrics) recommend counseling patients about preventing unintended pregnancy. The U.S. Preventive Services Task Force recommends “periodic counseling about effective contraceptive methods . . . for all women and men at risk for unintended pregnancy.”<sup>4</sup> Yet there is a lack of research on the relationship between patient counseling in the primary care setting and adult women’s contraceptive use,<sup>5</sup> and this information gap hampers efforts to improve pregnancy prevention services.

This study tests the hypothesis that adult women who receive contraceptive counseling in their managed care plans, compared with women who do not receive counseling, have more positive contraceptive attitudes and are more likely to use contraception if at risk of unintended pregnancy.

### **The Managed Care Context**

Enrollment in managed care plans has been growing rapidly, and the majority of insured persons are now in some type of managed care arrangement. In 1998, 54% of all insured women in the United States and nearly two-thirds of privately insured women reported that they were enrolled in health maintenance organizations (HMOs) or preferred provider organizations (PPOs).<sup>6</sup> Yet little is known about how health plans assist women to prevent unintended pregnancies. Current quality of care measures used in managed care plans do not address pregnancy prevention, so data are not available on health plan performance. Policy initiatives to date have focused on two issues relevant to pregnancy prevention in managed care: benefits coverage of prescription contraceptives in employer-based health insurance and mandated direct access to obstetrician/gynecologists (ob/gyns).

Lack of insurance coverage of prescription contraceptives is an important barrier to use of the most effective contraceptive methods.<sup>7,8</sup> While Medicaid covers family planning services, many privately insured women do not have access to a contraceptive benefit.<sup>9</sup> Research on private insurers finds that managed care plans of all types generally provide better coverage of contraception than traditional indemnity insurance, but coverage varies by type of managed care plan; PPOs and point-of-service (POS) networks are less likely to cover contraceptives than HMOs.<sup>10</sup> Furthermore, information about coverage is not readily available to consumers. In a five-state study of managed care plans, researchers found that only half of commercial health plans and

one-third of Medicaid managed care plans provided enrollees with a list of covered contraceptive methods.<sup>11</sup>

State and national efforts to increase contraceptive coverage in employer-sponsored health plans have escalated. As of October, 2000, 13 states had enacted legislation mandating insurance coverage of contraceptives under the same terms and conditions as for other prescription drugs, and another nine states had more limited provisions for contraceptive coverage.<sup>9</sup> The Equity in Prescription Insurance and Contraceptive Coverage Act, which would cover all employers, was introduced in Congress in 1997, but has yet to be acted on. Recent rulings by the Equal Employment Opportunity Commission and a federal court in a case brought against Bartell Pharmacy have provided a precedent for defining exclusion of contraceptive coverage from employee health coverage as sex discrimination. These rulings may set a precedent for other cases and may also encourage voluntary expansion of contraceptive benefits by other employers.

Lack of direct access to ob/gyns in health plans is also a potential barrier to contraceptive use. Managed care plans require enrollees to have designated primary care providers (PCPs) who provide referrals to specialists. Most PCPs are family practitioners or internists, rather than reproductive health specialists; nationally, only 7% of women enrolled in managed care plans report that on ob/gyn is their regular physician and 49% see an ob/gyn in addition to their regular physician.<sup>6</sup> Generalist physicians may not feel comfortable screening women for exposure to unintended pregnancy or providing contraceptive counseling. Conversely, some women may not be comfortable talking to a generalist physician about their contraceptive needs. Policy initiatives to ensure women's access to ob/gyns in their health plans have occurred in some states: in 2000, 38 states and the District of Columbia had policies requiring health plans to provide direct access to ob/gyns without a PCP referral, and 16 states and the District of Columbia required plans to permit women to designate ob/gyns as their PCPs.<sup>9</sup> Direct access to ob/gyns is a provision of the patients' bill of rights currently before Congress.

Neither insurance coverage of contraceptives nor direct access to ob/gyns is likely to be a panacea. Improving the delivery of contraceptive counseling and services also will be necessary to reduce unintended pregnancies. Each primary care visit is an opportunity to screen for exposure to unintended pregnancy and to provide information about contraceptive options, but research finds that family planning counseling is not widely provided in primary care settings. In surveys of providers involved in women's primary care, 26% of internists, 36% of family practitioners, 53% of nurse practitioners, and 65% of ob/gyns reported that they provide routine family planning counseling.<sup>12</sup> In the 1995 National Survey of Family Growth, 14.5% of all women ages 15 to 44 reported receiving birth control counseling in the past 12 months; the largest percentage of women receiving birth control counseling (26%) were ages 20 to 24.<sup>13</sup> A 1999 national survey of women ages 18 to 64 found that only 35% of women of reproductive age who had visited an ob/gyn in the past 2 years had received counseling on birth control.<sup>14</sup> Thus there is much room for improvement in contraceptive counseling.

### **Effectiveness of Contraceptive Counseling**

The availability and quality of counseling are believed to influence individuals' decisions to use contraception and the effectiveness with which contraceptives are used,<sup>15,16</sup> yet there is no standard definition of contraceptive counseling. The National Survey of Family Growth defines birth control counseling as "counseling about whether to use birth control methods, how to get them, information about different methods, and how they are used."<sup>13</sup> The U.S.

Preventive Services Task Force defines counseling interventions generally as "those in which the patient receives information and advice regarding personal behaviors (e.g., diet) that could reduce the risk of subsequent illness or injury."<sup>4</sup> According to the Task Force, the objectives of patient education and counseling are to change health behaviors and improve health status by increasing patients' knowledge levels and confidence in their ability to affect their health (i.e., perceived self-efficacy). As this implies, counseling is more than imparting information. Bruce distinguishes information-giving, which she does not regard as counseling, from interpersonal relations, or the affective content of the client-provider transaction; the latter is concerned with influencing clients' confidence, satisfaction with services, and probability of continuity of care.<sup>15</sup>

Little research on U.S. populations has addressed the relationship between counseling and contraceptive adoption or continued use, particularly among adults.<sup>17</sup> Evidence of the effectiveness of counseling comes primarily from evaluations of specific pregnancy prevention programs or from studies of high-risk adolescent populations.<sup>2</sup> For example, Nathanson and Becker found that nurse-client interactions in family planning clinics predicted female adolescents' use of contraceptives over a 12-month follow-up period.<sup>18</sup> However, results from family planning clinics, where many clients have formulated an intent to contracept, may not be generalizable to primary care settings.

The plausibility of the hypothesis that counseling is associated with contraceptive use is supported by evidence that provider counseling influences women's use of other preventive tests and interventions. Studies of mammography screening find that one of the most common reasons reported by older women for not obtaining mammograms is that their physicians did not recommend it.<sup>19-21</sup> In addition, experimental studies have found that education and counseling interventions improve mammography screening rates.<sup>22-25</sup> Studies of hormone replacement therapy (HRT) also confirm the importance of counseling. Newton and colleagues found that physicians were the most important source of information about HRT reported by women in one managed care plan and a strong influence on their HRT use; this occurred despite the fact that substantial proportions of women reported using other sources of information about HRT as well (e.g., print media).<sup>26</sup> In the 1998 Commonwealth Fund Survey of Women's health, the two primary reasons given for initiating use of HRT were a doctor's recommendation and seeking relief of menopausal symptoms.<sup>27</sup> Schauberger and colleagues report that an educational program directed at both physicians and patients increased the rate of HRT use among postmenopausal women over a 3-year period.<sup>28</sup>

## Conceptual Framework and Hypotheses

Theories of health behavior attempt to explain how individuals adopt or fail to adopt health-promoting behaviors (e.g., exercise, smoking cessation, use of screening mammography) or maintain those behaviors over time. Theories such as the health belief model, the theory of planned behavior, and the transtheoretical model provide a basis for examining the relationship between contraceptive counseling in the health care setting and contraceptive behavior. These theories recognize that knowledge alone is not sufficient to motivate individuals to adopt health-promoting behaviors and that factors such as values, expectations, and social influences also are important determinants of health behaviors.<sup>29</sup> In addition, these theories draw attention to intervening steps between the acquisition of information and health-promoting behavior, such as building self-efficacy and forming behavioral intent.

The function of counseling in the health care setting could be to further the adoption of health behaviors through several pathways. Counseling can

provide information and help clarify the options available to the individual, thus empowering individuals to make informed decisions with respect to their health. Counseling can help alleviate fears about specific options or reduce anxiety about social consequences of options, thus addressing some of the nonrational components of health decision making. Providing information and enabling individuals to cope with their concerns help build self-efficacy for behavior change. Counseling also can help individuals move from one stage of behavior change to another—for example, from the precontemplation stage, in which there is no intent to take action, to the contemplation stage, when an intent is formed to change behavior in the near future—or to maintain a health behavior once adopted.

In addition, because women are known to value the quality of communication in choosing a physician or health plan,<sup>30</sup> receiving counseling is likely to be associated with higher satisfaction with health care. In the 1998 Commonwealth Fund Survey of Women's Health, the number of counseling services received in the past 12 months, out of a total of seven counseling topics measured, was the strongest predictor of women's ratings of their physician's performance and of the quality of communication with their physicians.<sup>6</sup> Satisfaction, in turn, is likely to be associated with return visits to the provider and with adherence to medical recommendations.<sup>31</sup>

Contraceptive counseling is defined here as a form of interpersonal (as opposed to public) communication. It includes information-giving as well as opportunities for clients to express their concerns, values, and preferences and to ask questions. Information may be provided through multiple communication channels, and using multiple channels may have a synergistic impact, with written or video material reinforcing oral communication.<sup>16</sup> In health care settings, counseling may include face-to-face discussions between the patient and her provider; group discussions; peer counseling; telephone hot lines or information resource lines; print or video materials made available in information kiosks or resource centers; and telephone or mail follow-ups or reminders. In the case of contraceptive counseling, the goal is to empower women to prevent unintended pregnancy.

Counseling is conceived as having three dimensions: 1) *exposure* refers to whether or not any counseling occurs through any communication channels; 2) *content* refers to the information imparted during counseling; and 3) *personalization* refers to the degree to which women's needs and preferences are addressed. The key hypothesis is that receiving any counseling in the past 2 years will be associated with higher satisfaction with counseling received, greater self-efficacy for preventing unintended pregnancy, and, if at risk of unintended pregnancy, intentions to contracept and current use of contraception. A further hypothesis is that counseling that is personalized to the individual's circumstances will be more strongly associated with contraceptive attitudes and use than counseling that is informational but not personalized. Finally, the associations between counseling and these dependent variables will hold when controlling for provider and respondent characteristics that might be expected to modify the relationship between counseling and attitudes or behavior.

## METHODS

### Study Design and Sample

A cross-sectional telephone survey was conducted of women enrolled in M-CARE, a nonprofit managed care company founded in 1986 by the University of Michigan and serving more than 195,000 members and 1,680 employer groups. Its 16-county commercial provider network includes more than 5,000

physicians and over 40 hospitals. M-CARE offers both HMO and POS plans, and at the time of this survey, about 95% of members had coverage for medical contraceptives. In addition, women in both the HMO and POS plans could receive annual gynecologic examinations without a referral from their primary care provider. The study therefore consists of a "best case" test of the availability and effectiveness of contraceptive counseling because providers would not be reluctant to provide counseling due to the absence of coverage, and counseled women would have maximum opportunity to obtain prescription contraception.

A random sample of 2,000 women was selected among M-CARE enrollees using the following eligibility criteria: ages 18 to 44 (the conventional definition of "reproductive age") and continuous enrollment in either the commercial HMO or POS plan for at least the previous two enrollment years. The requirement of two enrollment years ensures that most women would have had some contact with the health plan and an opportunity to receive counseling. A shorter enrollment period could result in underestimating the prevalence of counseling.

A letter of invitation from the M-CARE executive director to participate in a "women's health research project" contained a mail-back enclosure giving enrollees the opportunity to opt out of the study. Of the sampled women, 357 (18%) declined participation at this stage. Among the remaining women, 594 were found to be ineligible (mainly due to subjects having moved or disenrolled from the plan), and 143 declined participation when contacted by the interviewer (mainly due to lack of interest or unwillingness to respond to a telephone survey). The final response rate (number of completed surveys divided by the number of completed surveys plus partial completions plus declines) was 64% ( $n = 898$ ).

To ascertain sample representativeness, the respondents were compared with the M-CARE enrolled population on available sociodemographic and utilization variables, including type of plan (HMO or POS), age, county of residence, contract status (contract holder versus dependent on a family member's contract), number of visits in the past 2 years, and specialty of the PCP. Respondents closely approximated the M-CARE population, with the exception of number of visits: respondents made nearly two more visits, on average, during the past 2 years than the average enrolled member, in part because those making no visits were less inclined to respond to the survey. Number of PCP visits is controlled in our analyses to account for the greater opportunity to be counseled among those who make more visits.

## Measures

*Counseling Variables.* Contraceptive counseling received in the health plan during the past 2 years was measured on three dimensions (exposure, content, personalization), in a series of questions about discussions with a provider in the health plan and informational materials provided by the health plan about birth control. For discussions, women were asked about nine specific topics discussed, based on the U.S. Preventive Services Task Force description of contraceptive counseling;<sup>4</sup> these topics could be regarded as basic informational content in minimal contraceptive counseling. A composite score was computed to indicate the level of counseling each women received (Table 1). The composite score is a three-category ordinal variable with levels corresponding to: 1) no exposure to counseling through any communication channel in the past 2 years (43% of respondents); 2) receiving counseling in which some degree of informational content was communicated through discussions with a provider or through print or video materials (19% of respondents); and 3) receiving counseling with both informational content and some degree of

**Table 1. MEASURES OF CONTRACEPTIVE COUNSELING**

<i>Dimension</i>	<i>Items</i>	<i>Sample Frequency (n = 898)</i>
Exposure	(1) At any time during the past two years, did any provider in your health plan ask you if you wanted information about birth control? (% yes)	40%
	(2) At any time during the past two years, did you talk with any provider in your health plan about birth control? (% yes)	43%
	(3) At any time during the past two years, did you receive any birth control information from your health plan in pamphlets or brochures, videos, or in the mail? (% yes)	17%
	Summary of Exposure:	
	None (no exposure through any channel)	43%
	Exposure through any channel	57%
Content	Specific topics discussed with a provider, past 2 years (% yes):	
	The benefits and risks of different contraceptives	27%
	The different types of contraceptives	22%
	Which contraceptives also protect against sexually transmitted diseases and which do not	14%
	How to use specific methods of contraception	14%
	Which contraceptives are covered by the health plan	8%
	Emergency contraception or the "morning after pill"	2%
	Other discussion (content unspecified)	10%
	No discussion	57%
Personalization	Topics discussed with a provider, past 2 years (% yes):	
	Your personal preferences for different contraceptives	31%
	Your future plans to get pregnant or not	26%
	Your husband's or partner's attitudes toward contraception	12%
	None of the above	62%
Composite Score	No counseling through any channel	43%
	Any information provided, no personalization	19%
	Both information and personalization	38%

personalized discussion tailored to the women's pregnancy intentions, to her preferences for contraception, or to her partner's preferences (38% of respondents). The composite variable therefore gives more points for each dimension of counseling received and assumes that personalized counseling can occur only if some degree of content also is communicated.

*Contraceptive Attitudes and Practices.* Satisfaction is a single-item measure based on the question, "All in all, how satisfied would you say you are with the birth control information and services you have received from the health care providers in your health plan?" Responses were very satisfied (64% of respondents), somewhat satisfied (24%), somewhat dissatisfied (2%), very dissatisfied (1%), and undecided (9%). The variable is analyzed as a dichotomy contrasting the very satisfied (64%) with all others (36%).

Self-efficacy for prevention of unintended pregnancy is measured using two questions: 1) "Overall, how would you rate your own knowledge about the various ways to prevent or postpone pregnancy?" Answers were excellent (53%), very good (35%), good (10%), fair (2%), and poor (less than 1%). 2) "Overall, how confident would you say you are in your ability to protect yourself against any unwanted pregnancy?" Answers were extremely confident (57%), very confident (37%), somewhat confident (6%), somewhat uncon-

fidant (less than 1%), and very unconfident (0%). On a summed score combining these two items, most respondents report high self-efficacy (scores of 9 or 10 on a summed scale ranging from 2 to 10). The measure is analyzed as a dichotomy, contrasting the highly self-efficacious (68%) with all other women.

Current use of contraception is measured as use of any of the following methods at the time of the survey: oral contraceptives (24%), condoms (21%), rhythm method (5%), withdrawal (4%), foam, jelly, or cream (3%), diaphragm (2%), Depo-Provera (2%), intrauterine device (IUD) (1%), and Norplant (less than 1%). Overall, 48% of women used at least one of these methods. The variable is analyzed as a dichotomy among women at risk of unintended pregnancy, contrasting at-risk women who use any of the above methods (79%) with women using none of the above (21%). (The measure of risk status is described below.) We do not restrict this measure of contraceptive use to medical contraceptives, because our interest is in counseling's impact on preventive behavior, not in the use of a particular type of contraceptive method. However, we constructed a second measure of contraceptive use in order to explore counseling's impact on the use of more costly prescription methods (i.e., oral contraceptives, diaphragm, IUD, Depo-Provera, and Norplant). This measure contrasts at-risk women using a prescription contraceptive (46%) with women using a nonprescription method or no method (54%).

Intentions to contracept in the next year are measured in a single question: "Do you plan to use any type of birth control at any time during the next year?" Answers were yes (54%), no (44%), and unsure (3%). The measure is analyzed as a dichotomy contrasting at-risk women who answered yes (77%) with all other at-risk women (23%).

*Covariates.* Additional variables include respondent and provider characteristics that could either influence receipt of counseling or modify the relationship between counseling and outcomes (Table 2). Based on the behavioral model of health services utilization,<sup>32</sup> we identified predisposing, enabling, and need variables that might affect women's access to or use of reproductive health services. In addition, because greater use of health services increases the opportunities to receive counseling, we included measures of health care visits and types of providers seen.

Respondent characteristics measured include the risk of unintended pregnancy, recent pregnancy, perceived overall health status, sociodemographics (i.e., age, education, household income, employment status, race/ethnicity, religion, religiosity, marital status, number of children), and health care utilization (i.e., length of enrollment in the health plan, number of visits to the PCP and other providers, and use of any out-of-plan contraceptive services). Provider characteristics include the type of health plan (HMO or POS plan), specialty of the PCP, whether or not an ob/gyn is seen, and provider gender. We hypothesize that seeing an ob/gyn and seeing a female provider will be associated with receiving more contraceptive counseling, since these providers are, respectively, reproductive health specialists or potentially more sensitive to women's contraceptive needs. Because POS plans provide enrollees with the opportunity to see providers outside the network (with increased cost-sharing), we expect that women in POS plans, compared with HMO plans, have more opportunity to seek out providers for contraceptive counseling or services.

The risk of unintended pregnancy indicates need for contraceptive counseling and services and is a key modifier in this analysis. Appropriate counseling should target women at risk, and it is among at-risk women that we expect to see an impact of counseling on contraceptive attitudes and practices. Our measure defines women *not* at risk of unintended pregnancy as those who are: pregnant or trying to get pregnant, heterosexually abstinent, infertile or

**Table 2.** RESPONDENT CHARACTERISTICS, BY RISK OF UNINTENDED PREGNANCY†

	<i>At Risk</i> ( <i>n</i> = 543)	<i>Not at Risk</i> ( <i>n</i> = 355)	<i>p</i> value‡
Age (mean)	33.3	36.8	0.000
Marital Status (%)			
Married or living with partner	66.6	92.1	0.000
Separated/divorced/widowed	9.2	4.8	
Never married	24.2	3.1	
Number of children (%)			
No children	41.6	20.6	0.000
One child	20.8	16.3	
Two or more children	37.6	63.1	
Pregnant in past 2 years (%)	21.4	27.3	0.043
Overall Health Status§ (%)			
Excellent	33.4	30.1	0.458
Very good	42.4	43.7	
Good	19.4	20.3	
Fair	4.2	4.2	
Poor	0.6	1.7	
Education (%)			
High school graduate or less	13.4	18.6	0.026
Some college	23.2	25.9	
College graduate	33.5	33.5	
Graduate/professional school	29.8	22.0	
Household Income (%)			
\$40,000 or less	33.7	20.3	0.000
\$40,001–\$60,000	20.7	21.5	
\$60,001–\$80,000	23.3	25.9	
\$80,001 or more	22.3	32.4	
Employment status (%)			
Employed part-time	22.4	24.5	0.225
Employed full-time	64.3	58.9	
Not employed	13.3	16.6	
Race/ethnicity (%)			
White, non-Hispanic	82.8	89.5	0.015
African American	8.4	5.4	
Asian	3.9	1.1	
Hispanic	2.3	2.8	
Other	2.6	1.1	
Religion (%)			
Protestant/Christian	40.7	47.1	0.010
Catholic	33.1	30.0	
Other	10.0	4.6	
None	16.1	18.3	
Religiosity (%)			
Very religious	28.7	29.3	0.918
Somewhat religious	44.8	45.9	
Not very religious	16.3	16.0	
Not at all religious	10.2	8.8	
Length of Enrollment in M-CARE (%)			
Two to three years	36.3	32.2	0.206
More than three years	63.7	67.8	
Mean PCP visits, past 2 years (SD)	5.4 (0.3)	5.8 (0.4)	0.352
Mean other¶ visits, past 2 years (SD)	6.4 (0.4)	6.3 (0.5)	0.838
Received any out-of-plan birth control services, past 2 years (%)	5.9	1.7	0.002

Abbreviations: PCP = primary care provider; SD = standard deviation.

†See text for definition of risk status.

‡*P* value is for the two-sample *t*-test for equality of means or the chi-square test for the association between the categorical variable and type of health plan.

§“How would you describe your overall health? Would you say your health is excellent, very good, good, fair, or poor?”

¶Includes visits to all other providers, including specialists, therapists, and technicians.

sterile, or with a vasectomized partner. Overall, 39.5% of women are not at risk by this definition, and 60.5% are at risk. This compares with 1990 national rates for women ages 18 to 44 of 47% and 53%, respectively.<sup>33</sup>

## Analytic Methods

The sets of respondent and provider characteristics were examined for multicollinearity and for bivariate associations with the measures of counseling, contraceptive attitudes, and use of contraception. Multiple logistic regression analysis was used to model counseling, contraceptive attitudes, and contraceptive use. All dependent variables are dichotomous. In the first phase of the analysis, the determinants of counseling were examined in a multiple regression framework to identify the key respondent and provider variables associated with receiving counseling within the health plan. In the second phase, contraceptive attitudes and use are the dependent variables. To test hypotheses about the impact of counseling on these outcomes, multiple regression analyses included counseling, respondent variables, and provider variables as predictors. For intent to contracept and use of contraception, the models were restricted to women at risk of unintended pregnancy. Selected interactions (e.g., between age and risk status) were tested. Adjusted odds ratios (OR) are reported for all models.

The models presented here have been trimmed to eliminate variables that consistently failed to attain statistical significance ( $p < 0.05$ ) in any regression analyses. Variables trimmed are: income, number of children, race/ethnicity, religiosity, type of health plan, PCP specialty, PCP gender, number of non-PCP visits, and receiving any out-of-plan contraceptive services.

## RESULTS

### Respondent Characteristics

Table 2 presents the sociodemographic and health characteristics of women at risk and not at risk of unintended pregnancy. Women at risk are 3.5 years younger, on average, than women not at risk, and they are less likely to be married or living with a partner, to have any children, to have been pregnant in the past 2 years, and to have household incomes over \$40,000. Other differences are not large.

### Determinants of Counseling

There is a strong bivariate association ( $p < 0.001$ ) between pregnancy risk and receiving any contraceptive counseling in the past 2 years. Among women at risk, 69% received any counseling, compared with 38% of those not at risk. This suggests either that providers target counseling to those at risk, or that those at risk initiate counseling.

Table 3 reports results from multiple regression analyses in which counseling received in the past 2 years is regressed on respondent and provider variables. The odds of receiving any counseling, through any channel, are significantly increased by risk of unintended pregnancy (OR = 4.71), having a pregnancy in the past 2 years (OR = 5.90), being a college graduate (OR = 1.75), seeing an ob/gyn (OR = 1.82), and making three or more PCP visits in the past 2 years (OR = 1.67). The odds are significantly decreased by older age (40 to 44 years). The interaction between age and risk of unintended pregnancy was tested to determine whether older at-risk women are less likely to receive counseling than younger at-risk women (not shown). The odds of

**Table 3. MULTIPLE LOGISTIC REGRESSION ANALYSES OF THE DETERMINANTS OF RECEIPT OF CONTRACEPTIVE COUNSELING IN THE PAST TWO YEARS (ADJUSTED ODDS RATIOS)**

	Received Any Counseling† (n = 854)	Received Personalized Counseling‡ (n = 497)
At risk of unintended pregnancy	4.71§	1.63§
Pregnant in past 2 years	5.90§	1.45
Perceived health status (excellent)	1.16	1.55
Age		
18–29	reference	reference
30–39	0.68	0.94
40–44	0.42§	1.02
Education		
High school/some college	reference	reference
College graduate	1.75§	1.12
Employment status (employed)	0.90	0.96
Religion		
Protestant/Christian	reference	reference
Catholic	0.74	1.12
Other	1.08	1.26
None	0.96	1.32
Marital Status (married or living with partner)	1.18	2.14§
Length of enrollment in plan (4+ years)	1.06	0.69
Sees ob/gyn for any care	1.82§	1.45
Number of PCP visits, past 2 years		
Two or less	reference	reference
Three or more	1.67§	1.90§
MODEL Significance	<0.001	0.002

†Dichotomous dependent variable (0 = no exposure through any communication channel; 1 = received counseling through talk or other communication channel).

‡Dichotomous dependent variable for those receiving counseling (0 = received information only; 1 = received both information and personalization).

§ $p < 0.05$ .

||The odds ratio for ages 40–44 is significantly different from the odds ratio for ages 30–39.

at-risk women ages 40–44 receiving any counseling are halved, compared with at-risk women ages 18–29.

Table 3 also shows that among those women who received any counseling, the odds of receiving personalized counseling are significantly increased by risk of unintended pregnancy (OR = 1.63), being married or living with a partner (OR = 2.14), and making three or more PCP visits in the past 2 years (OR = 1.90).

### Relationships Between Counseling and Contraceptive Attitudes and Use

Table 4 shows results for multiple logistic regression analyses in which contraceptive attitudes and use were regressed on counseling, respondent, and provider characteristics. Receiving personalized contraceptive counseling during the past 2 years is a significant determinant of all of these outcomes, with the exception of self-efficacy. (For self-efficacy, the effect of personalized counseling is marginally significant,  $p = 0.051$ .) For current contraceptive use, both levels of counseling (informational only and personalized counseling) have significant effects (OR = 1.86 and 4.97, respectively), and the effect of personalized counseling is significantly stronger than the effect of informational counseling. Thus, each successive level of counseling increases the odds of contraceptive use.

**Table 4. MULTIPLE LOGISTIC REGRESSION ANALYSES OF THE DETERMINANTS OF CONTRACEPTIVE ATTITUDES, INTENT, AND USE (ADJUSTED ODDS RATIOS)**

	<i>Satisfaction†</i> ( <i>n</i> = 839)	<i>Self-Efficacy‡</i> ( <i>n</i> = 854)	<i>Current Contraceptive Use§</i> ( <i>n</i> = 512)	<i>Intent to Use In Next Year  </i> ( <i>n</i> = 510)
<b>Counseling</b>				
No counseling	reference	reference	reference	reference
Information only	1.50	0.95	1.86#	0.66
Information + personalization¶	3.07#	1.47	4.97#	2.74#
At risk of unintended pregnancy	0.84	0.49#	—	—
Pregnant in past 2 years	0.87	0.71	0.48#	0.99
Perceived health status (excellent)	1.63#	2.12#	1.27	1.10
<b>Age</b>				
18–29	reference	reference	reference	reference
30–39	1.03	1.33	1.08	0.94
40–44	0.91	1.36	0.42#	0.74
<b>Education</b>				
High school/some college	reference	reference	reference	reference
College graduate	0.86	1.44#	0.82	1.77#
Employment status (employed)	0.61#	0.91	1.49	2.36#
<b>Religion</b>				
Protestant/Christian	reference	reference	reference	reference
Catholic	1.02	0.86	0.73	0.74
Other	0.44#	0.73	1.05	3.06
None	0.78	1.36	0.83	1.05
Marital Status (married or living with partner)	1.01	0.73	6.89#	2.50#
Length of enrollment in plan (4+ years)	1.37	1.19	0.98	0.98
Sees ob/gyn	1.08	1.25	0.96	0.98
<b>Number of PCP visits, past 2 years</b>				
Two or less	reference	reference	reference	reference
Three or more	1.26	1.08	1.40	1.29
MODEL Significance	<0.001	<0.001	<0.001	<0.001

†Dichotomous dependent variable (0 = less than very satisfied with birth control information and services received in the health plan; 1 = very satisfied).

‡Dichotomous dependent variable (0 = low to moderate self-efficacy for prevention of unintended pregnancy; 1 = high self-efficacy).

§Among women at risk of unintended pregnancy, dichotomous dependent variable (0 = not currently using contraception; 1 = currently using contraception).

||Among women at risk of unintended pregnancy, dichotomous dependent variable (0 = no intent to contracept during next year; 1 = intent to contracept during next year).

¶The odds ratio for personalized counseling is significantly different from the odds ratio for information only ( $p < .05$ ) in all models.

# $p < 0.05$ .

Several variables other than counseling are significant determinants of these outcomes. Excellent perceived health status increases the odds of satisfaction, and employment and “other” religions (Jewish, Muslim, Hindu, Buddhist, etc.) lower the odds of satisfaction. The odds of reporting high self-efficacy for prevention of unintended pregnancy are decreased by risk of unintended pregnancy and increased by excellent health status and college graduation.

The odds of current contraceptive use (any method), among those at risk of unintended pregnancy, are reduced by pregnancy in the past 2 years and by older age (40 to 44 years), and the odds of use are increased by being married or living with a partner. The interaction between age and receiving counseling was tested to determine if counseling is effective in women ages 40 to 44; the odds of using contraception were not increased in older women who received

counseling, compared with older women who did not receive counseling (not shown).

In analyses (not shown) of current use of medical contraception among those at risk of unintended pregnancy, personalized counseling significantly increased the odds of use (OR = 3.68), but informational counseling alone did not. Similar to the model for any contraceptive use, older age (ages 40 to 44) and pregnancy in the past 2 years lowered the odds of medical contraceptive use, and being married or living with a partner increased the odds of use. In addition, counseling did not have an effect on contraceptive use in women ages 40 to 44.

Finally, the odds of intent to contracept, among those at risk of unintended pregnancy, increase with several variables in addition to personalized counseling: college graduation, employment, and being married or living with a partner. Because 89% of those who intend to contracept in the next year are current contraceptive users (compared with only 37% among those who do not intend to contracept), current contraceptive use is a highly significant predictor of intent if included in the regression model; however, the effect of personalized counseling persists (OR = 2.52,  $p = 0.007$ ) when current contraceptive use is added (analyses not shown).

## DISCUSSION

### Summary of Key Findings

Adult women at risk of unintended pregnancy are more likely than those not at risk to receive contraceptive counseling in their health plan. Furthermore, receiving counseling that is personalized with respect to needs and preferences is associated with higher satisfaction with contraceptive information and services received, with current use of contraception if at risk of unintended pregnancy, and with intent to use contraception in the next year if at risk. Informational counseling that is not personalized also significantly increases the odds of contraceptive use. To our knowledge, this is the first study to report an association between counseling and contraceptive attitudes and practices in adult women enrolled in managed care.

Three other findings are noteworthy. First, women at the end of the reproductive age span (those ages 40 to 44) were less likely than younger adults to receive any counseling and to use contraception if at risk of unintended pregnancy. Yet women ages 40 and over have a relatively high proportion of unintended pregnancies compared with women in their thirties: 51% of pregnancies in women ages 40 and over are unintended, compared with 33% among women ages 30 to 34 and 41% among women ages 35 to 39.<sup>1</sup> A possible reason for unintended pregnancies in this older age group is the unpredictability of menstrual patterns as women approach menopause, combined with assumptions that pregnancy is unlikely. Among women ages 40 and over in this sample who were at risk of unintended pregnancy, only 31% reported that a provider in the health plan had talked to them in the past 2 years "about your needs for birth control as you approach menopause." Furthermore, those in this age group who did receive any counseling were no more likely to contracept than those who did not receive counseling, suggesting that the counseling provided may not be appropriate for this age group. The implication is that health care providers should identify older reproductive-age women as a risk group and target them for contraceptive counseling that is tailored to their life stage.

Second, seeing an ob/gyn nearly doubles the odds of receiving contraceptive counseling. This is an important finding because seeing an ob/gyn in addition to the PCP requires an additional visit. Although a referral is not

required for an annual gynecologic visit for the women in this study, this is not true in all health plans. Facilitating women's access to ob/gyns within health plans therefore is important for increasing the prevalence of contraceptive counseling. Furthermore, the significant effect of seeing an ob/gyn indicates a need for family practitioners and internists who serve as PCPs to include contraceptive counseling in their primary care of women.

Third, the impact of a recent pregnancy (in the past 2 years) is an important variable. Women with a recent pregnancy were nearly six times more likely than other women to have received any contraceptive counseling, suggesting that pregnancy or childbirth triggers a discussion of contraception with the provider. Discussions of birth control are a recommended component of postpartum visits.<sup>34</sup> However, among women at risk of unintended pregnancy, a recent pregnancy decreases the odds of contraceptive use by half, independent of counseling received. This raises the possibility that women who have recently given birth may be under the impression that they are not at risk of pregnancy, or that they may be reluctant to use oral contraceptives while nursing. Counseling of recently pregnant women should take these possibilities into account.

### **Limitations**

Three limitations relate to the internal validity of the study. The study was cross-sectional in design, which means that causal claims about the impact of counseling cannot be made, despite the strong associations observed between time-ordered events. In addition, information about specific counseling sessions (e.g., how long they lasted, who provided them) is not available, so it is not possible to attribute our findings to specific attributes of counseling beyond the content and personalization dimensions measured. Finally, although there is a possibility of recall bias, patient report is the preferred method for obtaining information about counseling received, because counseling is rarely documented in medical charts, because physician reports are not as accurate as patient reports, and because direct observation would incur additional biases and feasibility problems.

With regard to external validity, because the study was conducted among enrollees of one managed care company, the generalizability of findings to other managed care populations cannot be assured. The prevalence of contraceptive counseling could be lower in health plans in which enrollees do not have coverage for prescription contraception or direct access to ob/gyns. Replication in other managed care organizations is recommended.

Also, we could not interpret our finding that women of "other" religions had lower satisfaction with contraceptive information and services, compared with Protestant/Christian and Catholic women. Due to small numbers of Jewish, Muslim, Hindu, and Buddhist women in our sample, we could not explore the findings for these subgroups. The possibility of communication problems with members of specific religious communities could be investigated in future studies.

### **Implications for Quality of Care in Health Plans**

Currently there is no quality indicator for health plans' performance in preventing unintended pregnancy. The selection of quality measures can be based on three criteria: 1) the importance of the health problem addressed, including demonstrated room for quality improvement in health care delivery organizations, 2) the evidence base for the effectiveness of the service addressed by the measure, and 3) the feasibility of measurement.<sup>35</sup> The importance of the problem of unintended pregnancy was addressed earlier. This

study provides further evidence that there is room for improvement in contraceptive counseling and that counseling can be effective in promoting contraceptive intent and use among women at risk of unintended pregnancy. This study also demonstrates the feasibility of measuring women's reports of contraceptive experiences in their health plans using a survey. The provision of contraceptive counseling by health plans therefore meets the criteria for quality indicators.

Although this study was conducted on a sample of insured women whose health plans include contraceptive coverage, deficits in contraceptive counseling and use were observed. A substantial proportion of women ages 18 to 44 (43%) reported receiving no contraceptive counseling in the past 2 years, and among those at risk of unintended pregnancy, 31% received no counseling and 21% were not using contraception. Older women (ages 40 to 44) were particularly at risk of not receiving counseling. In addition, most women did not discuss more than one contraceptive topic with a provider and did not receive personalized counseling. Ideally, most women of reproductive age would be expected to receive some communication in a 2-year period about their potential need for contraception, if only to assess (or reassess) their pregnancy intentions and exposure to the risk of unintended pregnancy.

Our findings also provide evidence of the importance of counseling in efforts to prevent unintended pregnancy. Although we cannot assert causality, similar cross-sectional evidence of associations with counseling have supported efforts to improve breast cancer screening through counseling interventions and to improve the provision of counseling related to HRT and other options for women in the management of menopause.<sup>36</sup> Similarly, increasing the prevalence of contraceptive counseling and its comprehensiveness and personalization are important goals for quality improvement.

Some health plans might be reluctant to initiate quality improvement programs for contraceptive counseling, despite prevailing preventive guidelines and evidence of effectiveness, because of concerns about the amount of time required to provide effective counseling. Research suggests that effective provider counseling on topics such as smoking cessation need not be time-consuming.<sup>37</sup> In a study of physician-patient communication patterns in routine visits, even visits in which dialogue was predominantly psychosocial took an average of 22.9 minutes, not significantly longer than visits with other communication content.<sup>38</sup> Moreover, the informational component of counseling can be provided at least in part through print or video materials or by clinicians other than physicians.

The finding that personalized counseling is associated with higher satisfaction with contraceptive information and services received suggests that women want contraceptive counseling in their health plans. The survey elicited women's opinions about how proactive health plans should be. When asked "how important do you think it is for health plans to help women prevent unwanted pregnancies," 62% responded that it is "one of the most important parts of women's health care," 36% responded that it is "a fairly important part," and 2% responded that it is "not an important part of women's health care." By contrast, when asked the same question about helping women "plan their pregnancies or become pregnant," only 46% responded that it is "one of the most important parts of women's health care." Thus, there is stronger support for health plans to help women prevent unwanted pregnancy than to help women attain pregnancy.

When asked how they would prefer to receive information about topics like birth control and pregnancy planning, most respondents identified their health care providers (88% of respondents) as their top choice as a source of information. When asked whether they prefer to bring up the topics of "pregnancy or sex" with their health care providers or prefer their providers to

bring it up first, 23% said they preferred to raise the subject, 22% preferred the provider to bring it up, and 55% did not care who brought it up. Thus, 77% of women would be comfortable being invited by their providers to discuss these topics. Finally, 74% reported that it is "very important" for health care providers to include men in discussions of birth control and pregnancy planning.

The implications for quality improvement are important. We have shown that it is feasible to measure adult women's reports of contraceptive counseling by survey, that adult women want contraceptive counseling from their health care providers, that there is room for improvement in health plan performance in providing contraceptive counseling, and that counseling is associated with contraceptive attitudes and practices among adults. The study therefore provides an empirically based rationale for efforts to reduce unintended pregnancy among adult women by improving the provision of contraceptive counseling in health plans.

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### REFERENCES

1. Henshaw SK. Unintended pregnancy in the United States. *Fam Plan Perspect* 1998;30:24-29,46.
2. Brown SS, Eisenberg L, eds. *The best intentions: unintended pregnancy and the well-being of children and families*. Washington, DC: National Academy Press; 1995.
3. U.S. Department of Health and Human Services. *Healthy People 2010, 2nd ed. With Understanding and improving health*. Washington, DC: U.S. Government Printing Office; 2000.
4. U.S. Preventive Services Task Force. *Guide to clinical preventive services, 2nd ed*. Baltimore, MD: Williams and Wilkins; 1996.
5. Wilcox, LS Koonin LM, Adams MM. Quality measures for unintended pregnancy prevention in health care services: opportunities and challenges. *Women's Health Issues* 1999;9:250-258.
6. Weisman CS, Henderson JT. Managed care and women's health: access, preventive services, and satisfaction. *Women's Health Issues* 2001;11:201-215.
7. Delbanco S, Lundy J, Hoff T, et al. Public knowledge and perceptions about unplanned pregnancy and contraception. *Fam Plan Perspect* 1997;29:70-75.
8. Mitchell JB, McCormack LA. Access to family planning services: relationship with unintended pregnancies and prenatal outcomes. *J Health Care Poor Underserved* 1997;8:141-152.
9. Henry J. Kaiser Family Foundation. *Issue brief: state policies on access to gynecological care and contraception*. Washington, DC: Henry J. Kaiser Family Foundation; 2000.
10. Alan Guttmacher Institute (AGI). *Uneven and unequal: insurance coverage and reproductive health services*. New York: AGI; 1994.
11. Gold RB, Darroch JE, Frost JJ. Mainstreaming contraceptive services in managed care: five states' experiences. *Fam Plan Perspect* 1998;30:204-211.
12. National Center for Health Statistics. *Healthy People 2000 Review, 1997*. Hyattsville, MD: Public Health Service; 1997.
13. Abma JC, Chandra A, Mosher WD, et al. Fertility, family planning, and women's health: new data from the 1995 National Survey of Family Growth. *Vital Health Stat* 23, No. 19. Hyattsville, MD: U.S. Department of Health and Human Services; 1997.

14. Kaiser Daily Reproductive Health Report. ObGyns: most women don't receive recommended services. Washington, DC: Henry J. Kaiser Family Foundation; May 3, 1999.
15. Bruce J. Fundamental elements of the quality of care: a simple framework. *Stud Fam Plan* 1990;21:61-91.
16. Piotrow PT, Kincaid DL, Rimon JC, Rinehart W. Health communication: lessons from family planning and reproductive health. Westport, CT: Praeger; 1997.
17. Strobino DM, Koenig M, Grason HA. Approaches and indicators for measuring quality in Region VIII family planning programming. Baltimore, MD: Johns Hopkins University School of Public Health, Women's and Children's Health Policy Center; 2000.
18. Nathanson CA, Becker MH. The influence of client-provider relationships on teenage women's subsequent use of contraception. *Am J Public Health* 1985;75:33-38.
19. Horton JA, Romans MC, Cruess DF. Mammography attitudes and usage study, 1992. *Women's Health Issues* 1992;2:180-188.
20. Rimer BK, King E. Why aren't older women getting mammograms and clinical breast exams? *Women's Health Issues* 1992;2:94-101.
21. Romans MD, Marchant DJ, Pearse WH, et al. Utilization of screening mammography, 1990. *Women's Health Issues* 1990;1:68-73.
22. Davis TC, Berkel HG, Arnold CL, et al. Intervention to increase mammography utilization in a public hospital. *J Gen Intern Med* 1998;13:230-233.
23. Herman CJ, Speroff T, Cebul RD. Improving compliance with breast cancer screening in older women: results of a randomized controlled trial. *Arch Intern Med* 1995;155:717-722.
24. Janz NK, Schottenfeld D, Doerr KM, et al. A two-step intervention to increase mammography among women aged 65 and older. *Am J Public Health* 1997;87:1683-1686.
25. King E, Rimer BK, Benincasa T, et al. Strategies to encourage mammography use among women in senior citizens' housing facilities. *J Cancer Educ* 1998;13:108-115.
26. Newton KM, LaCroix AZ, Leveille SG, et al. The physician's role in women's decision making about hormone replacement therapy. *Obstet Gynecol* 1998;92:580-584.
27. MacLaren A, Woods NF. Midlife women making hormone therapy decisions. *Women's Health Issues* 2001;11:216-230.
28. Schauburger CW, Caplan RH, Dahlberg PJ, et al. A quality improvement project to increase the use of postmenopausal hormonal replacement therapy. *WMJ* 1996;95:697-701.
29. Mermelstein RJ. Individual interventions: stages of change and other health behavior models—the example of smoking cessation. In: Gallant SJ, Keita SP, Royak-Schaler R, eds. *Health care for women: psychological, social, and behavioral influences*. Washington, DC: American Psychological Association; 1997. p. 387-403.
30. Isaacs SL. Men's and women's information needs when selecting a health plan: results of a national survey. *J Am Med Women's Assoc* 1997;52:57-59.
31. Cleary PD, McNeil BJ. Patient satisfaction as an indicator of quality care. *Inquiry* 1988;25:25-36.
32. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav* 1995;36:1-10.
33. Henshaw SK, Forrest JD. Women at risk of unintended pregnancy, 1990 estimates: the need for family planning services, each state and county. New York: Alan Guttmacher Institute; 1993.
34. American College of Obstetricians and Gynecologists and American Academy of Pediatrics. Guidelines for perinatal care. Washington, DC: Author; 1997.
35. Institute of Medicine. *Envisioning the national health care quality report*. Washington, DC: National Academy Press; 2001.
36. Weisman CS. Measuring quality in women's health care: issues and recent developments. *Quality Management in Health Care* 2001;8:14-20.
37. Kottke TE, Battista RN, DeFries GH, et al. Attributes of successful smoking cessation interventions in medical practice: a meta-analysis of 39 controlled trials. *JAMA* 1988;259:2882-2889.
38. Roter DL, Stewart M, Putnam SM, et al. Communication patterns of primary care physicians. *JAMA* 1997;277:350-356.