

Budget Impact Analysis of 8 Hormonal Contraceptive Options

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Many women spend more than half of their approximately 40-year reproductive life spans attempting to avoid having children.¹⁻³ Development of the first hormonal “pill” in the 1960s resulted in reliable, reversible, and safe contraception. After more than 40 years, hormonal contraceptives—oral contraceptives (OCs), implants, patches, vaginal rings, injectables, and intrauterine devices (IUDs)—are used by millions of women in the United States and throughout the world.^{4,5} Yet, despite the availability of a broad range of contraceptive options, almost half (49%) of all pregnancies in the United States are unintended.⁶

The efficacy of hormonal contraceptives in averting unintended pregnancies is well established. With perfect use, failure rates are $\leq 0.3\%$ for hormonal contraceptives compared with 85% for no contraception.⁷ However, the difference between contraceptive failure rates with typical use versus perfect use, as first described in 1987,³ is recognized as a major contributor to unintended pregnancy,⁸ and this information is now included in US Food and Drug Administration (FDA) product labeling of almost all contraceptive products.

Avoiding unintended pregnancy results in substantial cost savings. Maternal pregnancy and delivery generated the largest total amount charged to private payers in the United States in 2006: \$23 billion in charges for 2.3 million hospital stays, for an average cost of approximately \$10,000 per stay.⁹ Neonatal care ranked third. Most healthcare insurers recognize the value of covering reversible contraceptive services and supplies to plans, members, and employers.¹⁰ However, optimal structuring of contraceptive benefits requires integration of multiple factors beyond the contraceptive drug or device per se.

We developed a transparent Excel-based model to assess the cost of 8 reversible contraceptive options: branded OCs; generic OCs; quarterly intramuscular depot medroxyprogesterone (MPA); etonogestrel/ethinyl estradiol vaginal ring (NuvaRing, Merck & Co, Inc, Whitehouse Station, NJ); etonogestrel implant (Implanon and Nexplanon, Merck & Co, Inc, Whitehouse Station, NJ); levonorgestrel-releasing intrauterine system (Mirena, Bayer HealthCare Pharmaceuticals Inc, Wayne, NJ); norelgestromin/ethinyl estradiol transdermal contraceptive (Ortho Evra, Ortho-McNeil-Janssen Pharmaceuticals, Inc, Raritan, NJ); and ethinyl estradiol/levonorgestrel extended-cycle OC (Seasonale, Duramed Pharmaceuticals, Inc, Pomona, NY).

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Objectives: To develop a model comparing costs of 8 hormonal contraceptives and determine whether acquisition costs for implants and intrauterine devices (IUDs) were offset by decreased pregnancy-related costs over a 3-year time horizon from a managed care perspective.

Study Design: A model was developed to assess the budget impact of branded or generic oral contraceptives (OCs), quarterly intramuscular depot medroxyprogesterone, etonogestrel/ethinyl estradiol vaginal ring, etonogestrel implant, levonorgestrel IUD, norelgestromin/ethinyl estradiol transdermal contraceptive, and ethinyl estradiol/levonorgestrel extended-cycle OC.

Methods: Major variables included drug costs, typical use failure rates, discontinuation rates, and pregnancy costs. The base case assessed costs for 1000 women initiating each of the hormonal contraceptives.

Results: The etonogestrel implant and levonorgestrel IUD resulted in the fewest pregnancies, 63 and 85, respectively, and the least cost, \$1.75 million and \$2.0 million, respectively. In comparison, generic OC users accounted for a total of 243 pregnancies and \$3.4 million in costs. At the end of year 1, costs for the etonogestrel implant (\$800,471) and levonorgestrel IUD (\$949,721) were already lower than those for generic OCs (\$1,146,890). Sensitivity analysis showed that the cost of pregnancies, not product acquisition cost, was the primary cost driver.

Conclusions: Higher initial acquisition costs for the etonogestrel implant and levonorgestrel IUD were offset within 1 year by lower contraceptive failure rates and consequent pregnancy costs. Thus, after accounting for typical use failure rates of contraceptive products, the etonogestrel implant and levonorgestrel IUD emerged as the least expensive hormonal contraceptives.

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Take-Away Points

A model was developed to assess the budget impact of 8 hormonal contraceptive options.

- Lower pregnancy rates, due to lower typical use failure rates, for the etonogestrel implant and levonorgestrel intrauterine device offset their higher initial costs (eg, acquisition and insertion/removal costs) even in the first year of use.
- From a managed care perspective, including direct pharmacy and medical costs, branded and generic oral contraceptives were among the highest cost products over the course of 3 years.

- Women who were not using hormonal contraception were assumed not to be using any contraception, and were assigned an 85% fertility rate. The effect of over-the-counter contraceptive methods was considered in the sensitivity analysis.
- For women who became pregnant in any given year, the probability of pregnancy was reduced by 25% the following year to account for the last months of pregnancy.

The objective of the present budget impact model was to determine whether initial acquisition costs of certain hormonal contraceptive methods can be offset by decreased pregnancy-related medical costs in a commercial population. We therefore applied our budget impact model to a hypothetical cohort of 1000 women initiating each of the 8 hormonal contraceptive methods. The model compared 1-, 2-, and 3-year drug and medical costs from the managed care perspective.

METHODS

Model Assumptions

We evaluated the costs of 8 hormonal contraceptive methods in women aged 15 to 49 years, across a 3-year time horizon, according to a decision-analytic model ([Appendix A](#)). Costs were calculated for 1000 women initiating contraception with each of the methods at the end of year 1, year 2, after the first 2 years, at year 3, and at the end of 3 years.

The model included the following assumptions:

- Women could continue on the initial method, switch to another hormonal contraceptive, discontinue contraception, or become pregnant. It was assumed that patients switch only once over the course of the 3-year period. The costs incurred and any pregnancies after switching to another contraception method were attributed to the first method.
- Typical use failure rates, which included method and user failure, and discontinuation rates for the first year, were based on data published by Trussell⁷ ([Table 1](#)). Discontinuation rates for years 2 and 3 were assumed to be half of those in the previous year.
- All switches, dropouts, and pregnancies were assumed to occur at midyear. This assumption should be actuarially equivalent to allocating these events evenly throughout the year.
- Of women who discontinued their method of contraception, 90% were assumed to have switched to another hormonal product, and 10% were assumed to have discontinued all contraception.

MODEL INPUTS

Contraceptive Costs. Costs of contraception were assigned to the year in which the cost would occur; for example, acquisition and insertion costs for etonogestrel implant and levonorgestrel IUD were included in year 1. All prescription costs, physician visits, and pregnancy costs incurred after a switch or discontinuation were attributed to the initial method. For women who switched, the model used a weighted average for pregnancy rates, prescription costs, and medical costs based on the market share of the remaining 7 methods.

Pharmacy Market Shares. Market share data were based on Retail and Non-Retail Hormonal Contraceptive IMS MIDAS Cycle Data in the United States for the year to date in November 2010¹¹ ([Table 2](#)). These data were used in the model to determine the probability of switching to another method and to assign typical use failure rates, pharmacy, and medical costs for the remaining years following the switch. In the base case, the etonogestrel implant market share was arbitrarily set to increase to 10%, and remaining market shares were normalized to total 100% ([Table 2](#)).

Wholesale Acquisition Cost, Pharmacy Discounts, and Rebates. Unit costs for drugs in the base case ([Table 2](#)) were wholesale acquisition cost prices as of January 2011.¹² The wholesale acquisition cost prices per tablet for branded and generic OCs (\$1.68 and \$0.72) were weighted averages. Because rebates and maximum-allowable-cost discounts vary considerably from one managed care plan to another and are considered proprietary, they were set to \$0 in the base.

Pharmacy Copayments, Coinsurance, and Dispensing Fees. For the base case, the model assigned 20% coinsurance for physician-administered contraceptive products (etonogestrel implant, levonorgestrel IUD, and MPA quarterly injectable), a \$15 copayment for branded products (eg, branded OCs, etonogestrel/ethinyl estradiol vaginal ring, norelgestromin/ethinyl estradiol transdermal contraceptive, ethinyl estradiol/levonorgestrel extended-cycle OC), and a \$7.50 copayment for generic OCs. Mail order purchases, which al-

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■ **Table 1.** Contraceptive Failure and Discontinuation (Switches and Dropout) Rates

Initial Hormonal Contraceptive	Typical Use Failure Rates, ^a %	Discontinuation Rates, %		
		Year 1 ^a	Year 2	Year 3
Etonogestrel implant 68 mg	0.05	16.0	8.0	4.0
Branded OCs	9.00	33.0	16.5	8.3
Generic OCs	9.00	33.0	16.5	8.3
Quarterly injectable (MPA)	6.00	44.0	22.0	11.0
Vaginal ring	9.00	33.0	16.5	8.3
Transdermal contraceptive	9.00	33.0	16.5	8.3
Levonorgestrel IUD	0.20	20.0	10.0	5.0
Extended-cycle OC	9.00	33.0	16.3	8.5
No contraception	85.00			

IUD indicates intrauterine device; MPA, medroxyprogesterone acetate; OC, oral contraceptive.
^aSource: reference 7.

■ **Table 2.** Base Case Pharmacy Costs

Contraceptive Method	Unit Cost, ^a \$	Yearly Multiplier ^b	Total Yearly Copayment, \$	Market Share Baseline, ^c %	Market Share Projected, %
Etonogestrel implant 68 mg ^d	625.04	1	125.01	3.67	10.00
Branded OCs	1.68	365	170.40	16.87	15.80
Generic OCs	0.72	365	85.20	42.18	39.51
Quarterly injectable (MPA)	38.03	4	30.42	9.00	8.43
Vaginal ring	66.18	12	170.40	4.35	4.07
Transdermal contraceptive	25.19	38	170.40	1.15	1.08
Levonorgestrel IUD	703.05	1	140.61	19.89	18.63
Extended-cycle OC	1.30	365	170.40	2.89	2.71

IUD indicates intrauterine device; MPA, medroxyprogesterone acetate; OC, oral contraceptive.
^aSource: reference 12.
^bEtonogestrel implant and levonorgestrel IUD unit costs were applied only once in the first year but not in year 2 or year 3.
^cSource: reference 11.
^dWholesale acquisition cost price of etonogestrel implant (Implanon and Nexplanon).

lowed patients to obtain a 3-month supply of pharmacy product by mail for the equivalent of 2 retail copayments, were set to 16% of all fills.¹³ Dispensing fees were set to \$2.44 in the base case.¹⁴

Medical Costs. Medical costs associated with contraceptive use were based on the Current Procedural Terminology (CPT) codes and prices based on an analysis of the *Thomson Reuters MarketScan Commercial Claims and Encounters Database*.¹⁵ The mean cost of all claims with CPT codes between April 2011 and September 2011 was calculated and used as the average cost of these medical procedures. Medical procedure costs comprised office visits (CPT 99213), \$73.33; implant insertion (CPT 11981), \$150.91; implant removal (CPT 11982), \$181.28; IUD insertion (CPT 58300), \$126.62; IUD removal (CPT 58301), \$143.07; and quarterly injection (CPT 96372), \$35.58. One doctor's visit was included each

year for each woman using products other than the IUD or injections. For women using the levonorgestrel IUD, 2 doctor's visits were assumed for the first year and 1 visit in years 2 and 3. Women receiving injections were assumed to make quarterly physician visits. For women who switched from an implant or IUD to another product, the model added the cost for the medical office visit to remove the product and the cost for an additional medical office visit to introduce the new product. The model also assumed that there would be one medical office visit for placement of each new product.

Pregnancy Outcome Probabilities and Costs. The probability of pregnancy outcome for the 6 most common outcomes (full-term vaginal delivery, cesarean section, premature delivery, ectopic pregnancy, elective abortion, and miscarriage) was stratified by maternal age (Table 3).¹⁵⁻¹⁷ The model assumed that there was an equal distribution of women; that is, 14.3%

■ **Table 3. Pregnancy Outcomes**

Probabilities of Various Outcomes of Pregnancy	Age Group, %						
	15-19 y	20-24 y	25-29 y	30-34 y	35-39 y	40-44 y	45-49 y ^a
Pregnancy with no birth							
Ectopic pregnancy	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Elective abortion	25.0	21.8	15.3	11.3	10.9	17.1	17.1
Miscarriage	15.7	13.6	14.2	16.1	27.2	25.3	25.3
Percentage of total pregnancies with no births	42.7	37.4	31.5	29.4	40.1	44.4	44.4
Pregnancy with birth							
Full-term, vaginal delivery ^b	36.3	37.2	39.1	36.8	26.0	19.0	13.2
Cesarean section	13.2	17.8	21.7	25.6	25.6	27.5	27.5
Premature delivery	7.8	7.6	7.7	8.2	8.2	9.1	14.9
Percentage of total pregnancies resulting in birth	57.3	62.6	68.5	70.6	59.9	55.6	54.6

^aFor the group aged 40 to 49 years, it was assumed that the probabilities for elective abortion were the same as those for the group aged 40 to 45 years.
^bFull-term vaginal delivery values were calculated so that totals for each column equal 100.

of the cohort fell in each of the 7 age categories presented.

Pregnancy costs were calculated (Table 4) by analyzing Thomson Reuters MarketScan Commercial Claims and Encounters Database data for new events between April and September 2010; events were considered new if there were no payments with similar International Classification of Diseases, Ninth Revision (ICD-9) or Diagnosis-Related Group (DRG) codes in the prior 3 months. All related payments with similar ICD-9 or DRG codes for the following 3 months were included in the total cost of the event. For ectopic pregnancy (ICD-9 633.xx and DRG 777) and induced abortion (ICD-9 635.xx and DRG 770 and 779), inpatient and outpatient costs were combined; miscarriage costs were outpatient only (ICD-9 634.xx); and live birth outcomes (vaginal delivery, DRG 775 and 795; cesarean section, DRG 766 and 795; and premature delivery, DRG 774, 791, and 792) were considered inpatient only (Table 4). Costs for delivery included those for newborn care in the hospital following delivery. Costs of pregnancy outcomes were assigned to the year of conception.

Model Outputs

Sensitivity Analysis. To determine which factors had the greatest impact on 3-year total costs for each contraceptive method compared with no contraception, a 1-way sensitivity analysis was performed. A total of 10 variables were varied one at a time by ±50% of their base case values to assess their individual impacts compared with no contraception: costs of pregnancies, proportions of patients who switch after discontinuing, discontinuation rate, unit costs of contraceptive method, yearly failure rates, average costs of medical visits, removal costs for implants, insertion costs for implants, insertion costs for IUDs, and removal costs for IUDs. In addition,

the age groups were varied from 100% of women aged 15 to 19 years to 100% of women aged 45 to 49 years.

Additionally, to assess the impact of the assumption that women who drop out of hormonal contraceptive coverage experience an 85% fertility rate, this variable was set to 28% and 2%, the typical use failure rate for spermicide and the perfect use failure rate for male condoms, respectively (ie, the highest and lowest failure rates for over-the-counter contraceptive options).⁷

Institutional review board approval was not sought for this analysis, as no direct patient data were used in this analysis.

RESULTS

Base Case Analysis

We summarized the medical and pharmacy costs and pregnancy rates for each contraceptive option calculated for the 1000 women on each of the contraceptive options in the base case (Table 5). The etonogestrel implant and levonorgestrel IUD were the least expensive methods for each year analyzed. In year 1, when devices were inserted, costs were \$800,471 for the etonogestrel implant and \$949,721 for the levonorgestrel IUD. In contrast, medical and pharmacy costs in year 1 for generic contraceptives were \$1,146,890. The difference in costs between the methods increased in year 2, as the costs for acquisition and insertion for both the implant and the IUD were much reduced. For year 2, the costs dropped to \$383,552 for etonogestrel and \$484,863 for the levonorgestrel IUD, whereas the cost the total cost of generic contraceptives remained relatively unchanged at \$1,143,432. In year 3, the cost of etonogestrel rose again to \$567,729, primarily due to the added costs of removing the implants; the cost of the levo-

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■ **Table 4.** Cost of Pregnancy Outcomes per Episode of Care

Pregnancy Outcome	No.	Mean Cost , 2010 \$	Mean Cost, 2012 \$
Ectopic pregnancy	4278	4218.68	4399
Elective abortion	9265	1870.82	1950
Miscarriage	19,658	806.08	841
Full-term vaginal delivery	31,736	9936.28	10,363
Cesarean section	10,940	13,881.28	14,478
Premature delivery	656	35,088.10	36,597

Source: Thomson Reuters MarketScan Commercial Claims and Encounters Database.

■ **Table 5.** Total Estimated 3-Year Costs per 1000 Patients on Each Contraceptive Method Using Base Case Analysis^a

Initial Contraceptive Method	Year 1	Year 2	Two-Year Total	Year 3	Three-Year Total	Total Pregnancies ^b
Etonogestrel implant 68 mg	\$800,471	\$383,552	\$1,184,024	\$567,729	\$1,751,753	63
Branded OCs	\$1,272,821	\$1,252,328	\$2,525,149	\$1,183,152	\$3,708,301	256
Generic OCs	\$1,146,890	\$1,143,432	\$2,290,322	\$1,077,633	\$3,367,955	243
Quarterly injectable (MPA)	\$1,292,274	\$1,245,350	\$2,537,624	\$1,167,804	\$3,705,428	224
Vaginal ring	\$1,427,589	\$1,375,182	\$2,802,771	\$1,279,322	\$4,082,093	259
Transdermal contraceptive	\$1,604,950	\$1,529,233	\$3,134,183	\$1,411,534	\$4,545,717	260
Levonorgestrel IUD	\$949,721	\$484,863	\$1,434,584	\$547,215	\$1,981,799	85
Extended-cycle OC	\$1,162,872	\$1,219,977	\$2,382,849	\$1,155,552	\$3,538,401	260
No contraception	—	—	—	—	\$8,724,495	850

IUD indicates intrauterine device; MPA, medroxyprogesterone acetate; OC, oral contraceptive.
^aA total of 1000 women were on each hormonal contraceptive method.
^bTotal pregnancies included those for women who switched to a different method or who dropped out from using any contraceptive method.

norgestrel IUD was \$547,215. The cost of both of these contraceptive options in year 3 was still approximately half the estimated cost of generic OCs at \$1,077,633. Over the course of the 3-year period, the least expensive contraceptive options were the etonogestrel implant and levonorgestrel IUD, costing \$1,751,753 and \$1,981,799, respectively. By comparison, the 3-year total costs were \$3,367,955 for the generic OCs; \$3,705,428 for the quarterly injectable; \$3,538,401 for extended-cycle OCs; \$3,708,301 for branded OCs; \$4,082,093 for the vaginal ring; and \$4,545,717 for the transdermal patch (Table 5).

The differences in costs were mostly attributable to differences in costs for pregnancies over the 3-year period. Among 1000 women starting on etonogestrel, the model predicted a total of 63 pregnancies over the course of 3 years: 1 on etonogestrel, 30 among those discontinuing, and 32 among those who switched to another product. In contrast, there were an expected 243 pregnancies over the course of 3 years with generic OCs: 145 on generic OCs, 59 among dropouts, and 39 among those that switched to another product. The total cost of these pregnancies was expected to be \$646,103 for etonogestrel compared with \$2,492,744 for generic OCs.

Sensitivity Analysis

Of the 11 variables that were varied, costs of pregnancy outcomes were the most salient determinants of 3-year net savings compared with no contraception for all 8 contraceptive methods (Appendix B). When cost of pregnancy outcomes was varied by $\pm 50\%$, the cost savings relative to no contraception varied from \$2.9 million to \$11.0 million for the etonogestrel implant, from \$2.8 million to \$10.7 million for the levonorgestrel IUD, and from \$2.2 million to \$8.5 million for generic OCs. In contrast, varying the unit costs of each contraceptive by $\pm 50\%$ led to a smaller impact on cost savings compared with no contraception: the etonogestrel implant cost savings varied from \$6.7 million to \$7.2 million, levonorgestrel IUD costs savings varied from \$6.4 million to \$7.0 million, and cost savings for branded OCs ranged from \$4.3 million to \$5.7 million.

When we varied the fertility rate to 28% and 2% to assess the potential impact of over-the-counter contraceptive use, the 3-year cost of contraception decreased accordingly. Over 3 years, the cost of etonogestrel implants decreased to \$1,576,395 and \$1,452,814, respectively. The cost of the levonorgestrel IUD decreased to \$1,762,939 and \$1,608,466, respectively; and the cost of generic OCs dropped to \$3,051,777 and \$2,825,698.

DISCUSSION

The impact of unintended pregnancy on costs to health plans, members, and employers warrants careful analysis of coverage to ensure that members have access to cost-effective contraception. This analysis demonstrated that the etonogestrel implant and levonorgestrel IUD were the least costly contraceptive methods over 3 years, despite their higher acquisition costs. At year 1, total costs for the etonogestrel implant and levonorgestrel IUD were less than those for both branded and generic OCs. The relatively high acquisition costs of the long-term methods were more than offset by their lower typical use failure rates.

Other models have established the cost-effectiveness of long-acting reversible contraceptives (LARCs), in large part because the perfect and typical use failure rates are more similar than those for short-acting methods. However, some differences in time horizons are needed to observe a favorable cost-benefit. Mavranezouli and co-workers¹⁸ developed a decision-analytic Markov model for the then National Institute for Health and Care Excellence. All LARC methods were more effective and less costly than OCs, although the etonogestrel implant was found to be the most cost-effective LARC.¹⁸ Results of another study by Lipetz and colleagues¹⁹ showed that the cost of the etonogestrel implant was approximately half that of OCs at the end of 12 months of use and was maintained at the end of years 2 and 3.

Varney and Guest²⁰ estimated the incremental cost-effectiveness ratios of 3 LARCs available in the United Kingdom—etonogestrel implant, levonorgestrel-releasing intrauterine system, and MPA injectable—in women 30 years and older who were representative of patients who choose LARCs. Using 2002 to 2003 costs, the analysis demonstrated that initiating long-term contraception with a levonorgestrel IUD or etonogestrel subdermal implant was more cost-effective than starting with an MPA injection.²⁰ In this study, the implant was less cost-effective than the IUD, which may reflect a difference in costs saved for each pregnancy avoided between the previous model and ours.

Trussell and colleagues²¹ developed a 5-year Markov model that included the concept of “mistimed” pregnancy for 16 contraceptive methods, ranging from withdrawal to the Copper T IUD. The model assumed that 60% of unintended births would occur 2 years later without contraceptive failure. After adjustment for mistiming, the Copper T IUD, vasectomy, and the levonorgestrel IUD emerged as the most cost-effective contraceptive methods available in the United States.

Limitations

Potential limitations of our model include its reliance on

typical use failure rates based on data compiled by Trussell,⁷ which likely overestimate failure rates for the vaginal ring and transdermal patch. The authors of the typical use failure rate tables explicitly state that the effectiveness of the patch and vaginal ring are assumed to be equal to that of OCs in the absence of clinical data indicating otherwise; however, it is likely that these nondaily options compared to daily contraceptive methods have typical use failure rates closer to the perfect use failure rates. Therefore, costs attributed to these methods are likely to be overestimated in our model. We chose to use these data, despite this limitation, because a previous iteration had been used for class labeling by the FDA and not only included reported pregnancies but also corrected for under-reported abortions.

Other model assumptions were also potential limitations, including the application of fertility rate after discontinuing. In particular, the 85% failure rate did not account for alternate circumstances, such as over-the-counter contraceptives, tubal ligation/hysterectomy, or other factors affecting fertility (eg, loss of a partner, age-related decline in fertility). Sensitivity analysis indicated that the effect of decreasing the fertility rate to account for over-the-counter contraceptive use decreased the 3-year total costs on the order of 10% to 20%, depending on the contraceptive option and its associated discontinuation rate; the relative budget impact of each contraceptive option on 3-year total costs did not change. An additional factor that affected the overall costs estimated by the model was the assumption that there were no pharmacy rebates, a key tool used by managed care organizations and pharmacy benefit managers to manage overall pharmacy costs. Changing the pharmacy rebates for the pharmacy products reduces the overall cost of those products, but the direction and overall magnitude of the base case results are maintained. In addition, the cost estimates for each pregnancy outcome did not account for changes in utilization that may have occurred since.

Lastly, other medical costs were omitted. Adverse events related to either the use of contraceptive products or pregnancy itself were beyond the scope of this analysis. In addition, the cost of prenatal care was omitted from the estimated cost of pregnancy outcomes.

CONCLUSIONS

The present model provided a fully transparent formulation for a cost analysis of hormonal contraceptives from a managed care perspective. The base case demonstrated that, despite their higher up-front acquisition costs, LARCs such as the etonogestrel subdermal implant and the levonorgestrel IUD proved to be less costly as early as within the first year of use. For all 8 contraceptive methods tested, the cost of unin-

tended pregnancy was the primary driver of costs over the first 3 years of use.

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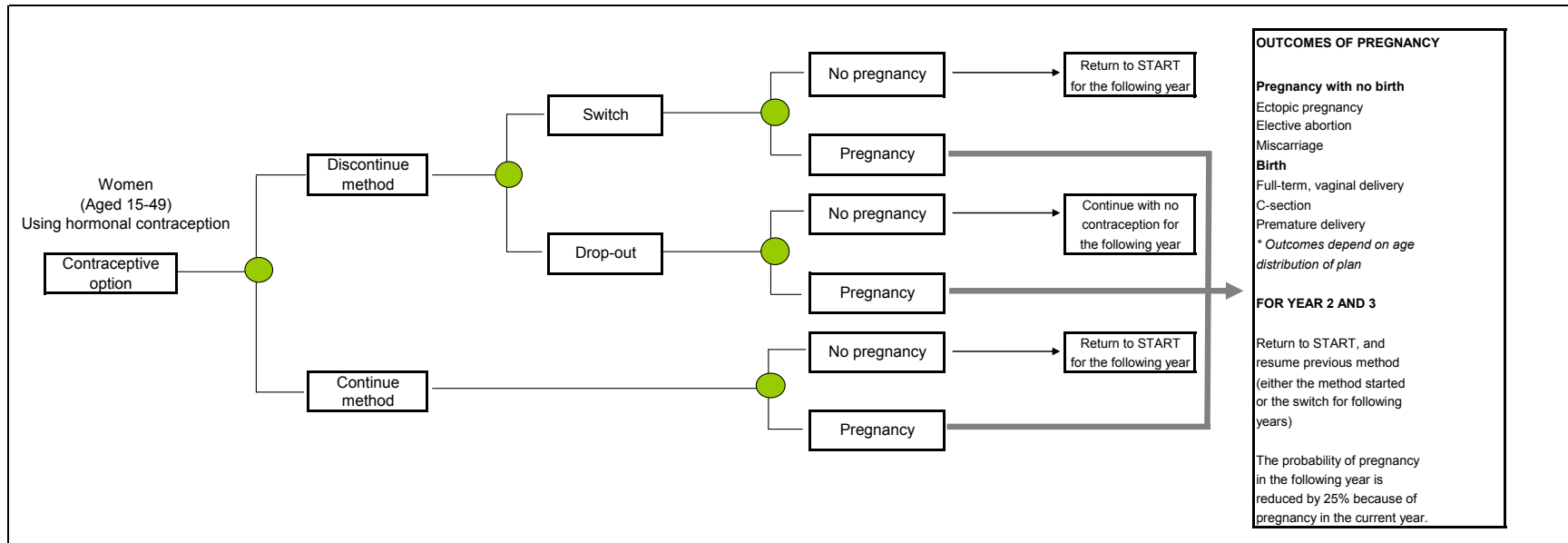
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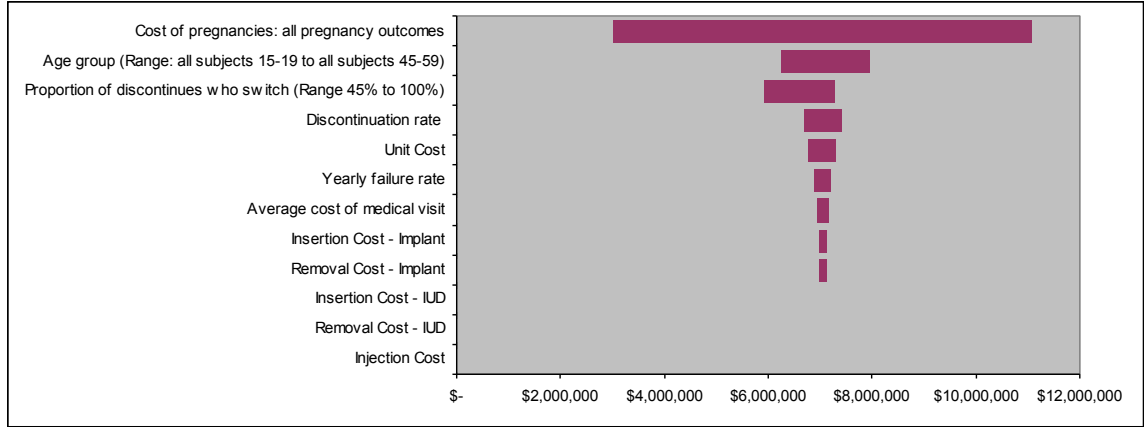
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Appendix A. Decision-Analytic Flowchart for the Cost-Benefit Model

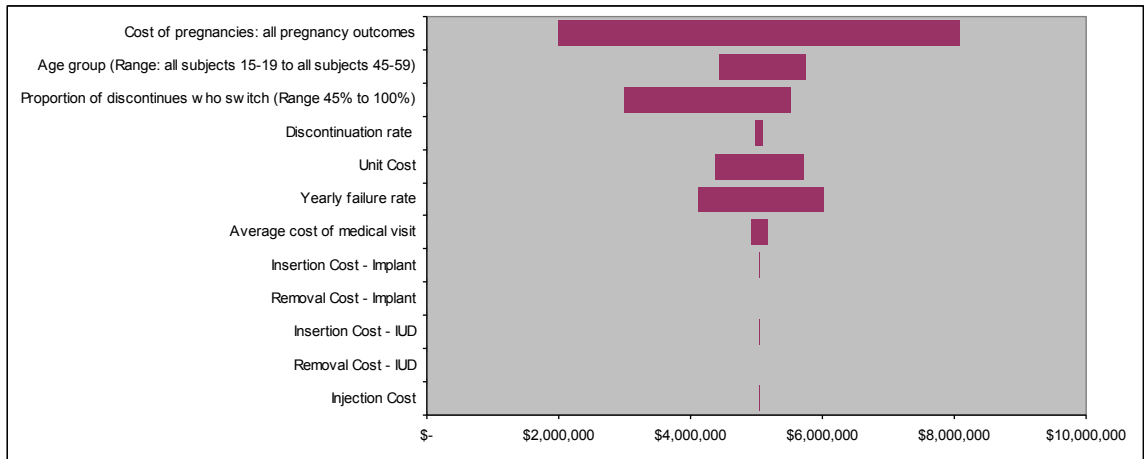


Appendix B. Results of Sensitivity Analyses Comparing Net Savings for Different Forms of Hormonal Contraception

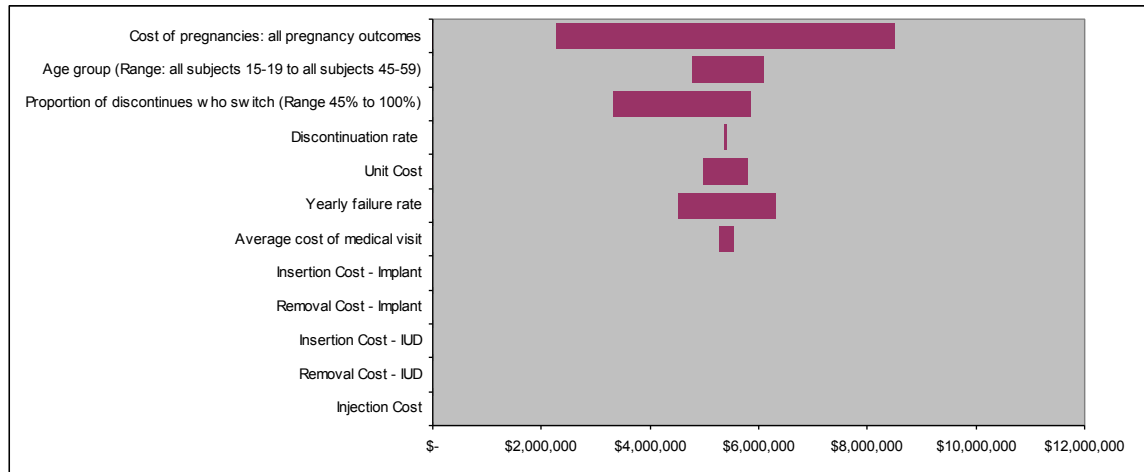
Etonogestrel Implant 68 mg



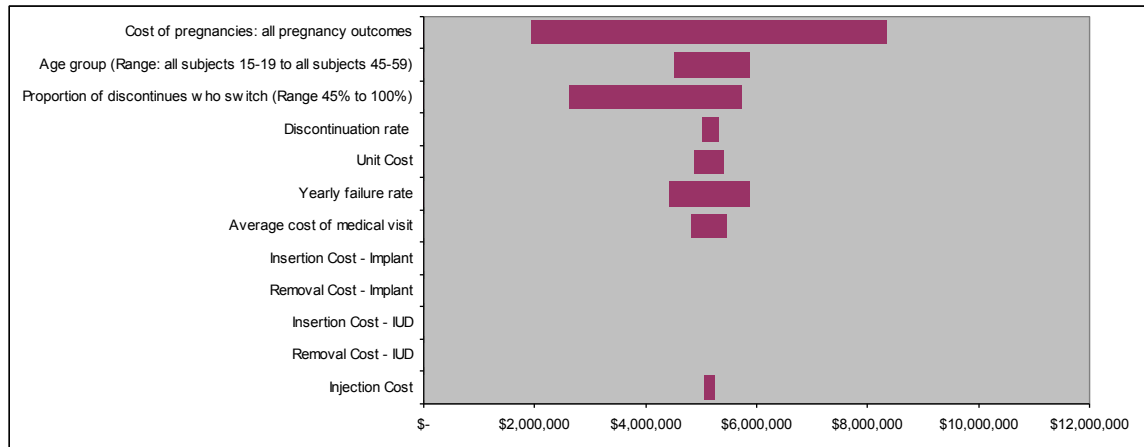
Branded Oral Contraceptives



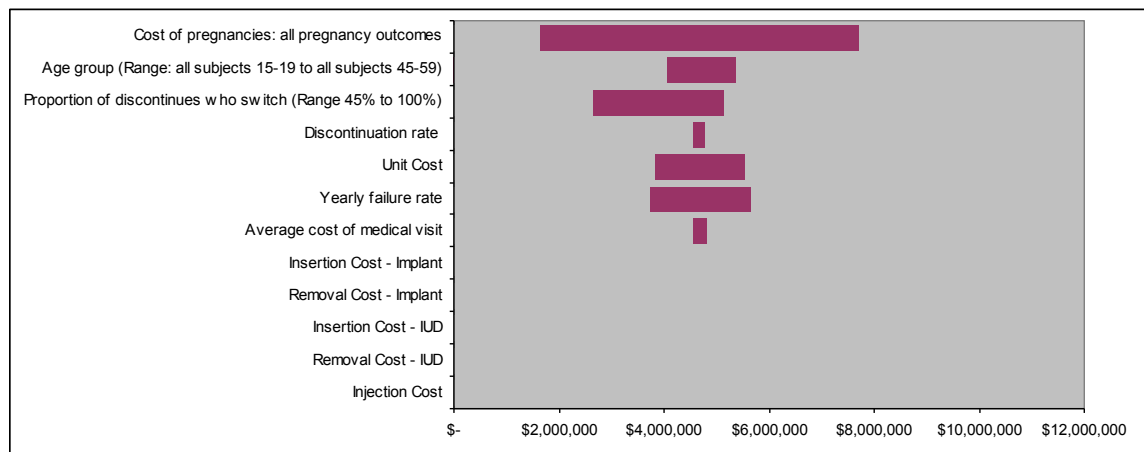
Generic Oral Contraceptives



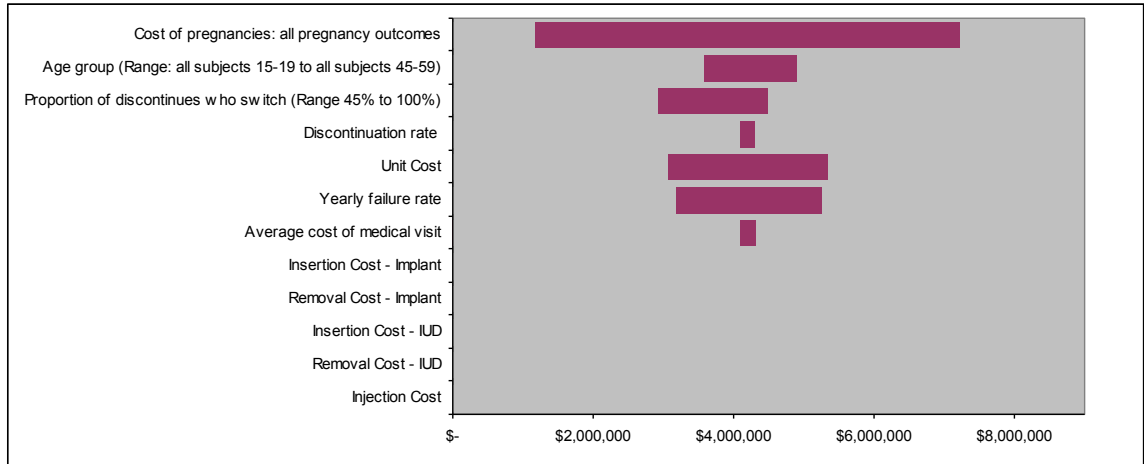
Quarterly Injectable Medroxyprogesterone Acetate



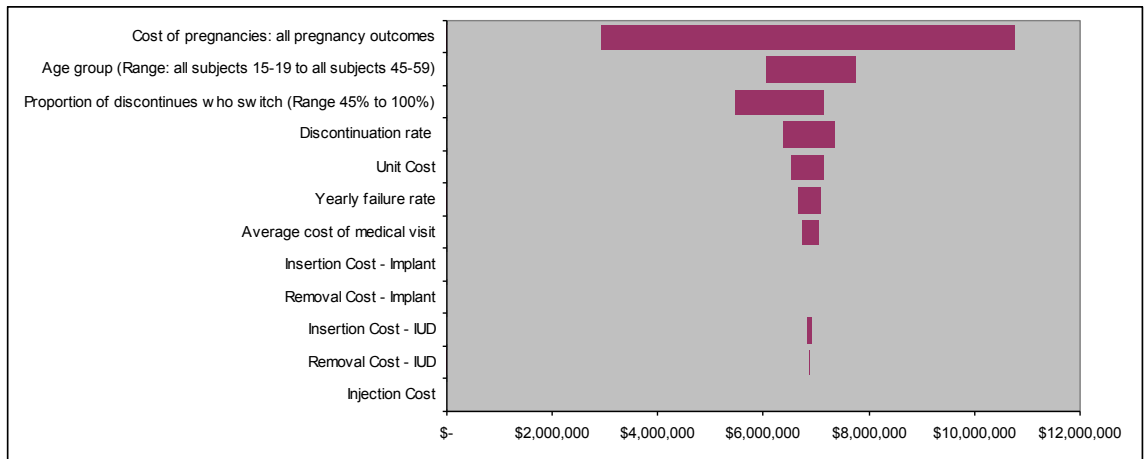
Vaginal Ring



Transdermal Contraceptive



Levonorgestrel Intrauterine Device



Extended-Cycle Oral Contraceptive

