

# Is Emergency Contraception Cost-Effective?

## HIGHLIGHTS

- EC cost-effectiveness studies weigh the costs of using EC, the likelihood that EC will prevent pregnancy, and the costs of an unintended pregnancy.
- The cost of EC is significantly lower than the cost of an unintended pregnancy, regardless of the EC pill regimen used or the source from which it is obtained.
- Preventing unintended pregnancy with EC saves money in publicly funded programs such as Medicaid as well as in developing countries.
- Greater cost savings may be achieved by the use of routine contraception, with EC as a back-up method when needed.
- Incomplete health insurance coverage of both routine contraception and EC poses a financial barrier to women seeking to prevent pregnancy.

### What Is Cost-Effectiveness?

In the health sector, cost studies are used to weigh the financial benefits of a particular drug or program against its costs. Though there are different methods of cost analysis, all rely on certain assumptions and existing data. Cost-effectiveness studies aim to identify the most economical way to achieve a health outcome.<sup>1</sup> For example: which method of contraception can prevent pregnancy at the lowest cost? Cost-benefit studies compare costs and benefits solely in monetary terms to determine whether one exceeds the other.<sup>1</sup> For example: is the cost of emergency contraception (EC) greater or less than the cost of an unintended pregnancy? When benefits exceed costs, the drug or program is considered to be cost-saving.

### How Is the Cost-Effectiveness of Contraception Measured?

Studies of contraceptive cost-effectiveness compare the efficacy of a particular contraceptive method with its monetary costs. Efficacy<sup>1</sup> is measured in terms of the number of pregnancies prevented by a given contraceptive method over a specified period of time.<sup>2-4</sup> Costs include those directly associated with using the method, such as required doctor's office visits, contraceptive supplies (e.g., pills or condoms), and treatment of side effects.<sup>2-4</sup> Additional costs, for example, those associated with transportation or time off from work to see the doctor, might also be considered.<sup>4</sup> Finally, costs of an unintended pregnancy are estimated for cases of contraceptive failure. Narrower studies limit these costs to the duration of the pregnancy (e.g., costs of abortion or birth),<sup>2-4</sup> while broader analyses account for costs beyond pregnancy (e.g., public expenses to support children born to low-income mothers).<sup>5</sup> Costs are often gauged in terms of payment method, such as private payer or public program.<sup>2-5</sup>

Similarly, EC cost-effectiveness studies weigh the costs of using EC, the likelihood that EC will prevent pregnancy, and the costs of an unintended pregnancy.<sup>6-10</sup> In addition to payment method, costs can be based on whether a woman obtains EC after unprotected sex versus in advance of need,<sup>7,8,10</sup> and whether she obtains EC from a doctor or clinic versus directly from a pharmacist.<sup>6,9,11</sup> Costs do *not*, however, include those for which a dollar value cannot readily be assigned, such as the psychological consequences of experiencing an unintended pregnancy.



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1 | For additional information about contraceptive efficacy, see the brief in this series titled: *Is Emergency Contraception Effective at Preventing Pregnancy?*

## Emergency Contraception Is Cost-Effective

At least eight recent studies and analyses have compared the costs of EC with the costs of an unintended pregnancy and have universally concluded that EC is cost-effective:<sup>3, 6-12</sup>

- **Both the single and combined hormone forms of EC are cost-effective:**<sup>II</sup> EC is currently available in the United States in two forms: (1) a single-hormone method marketed under the brand name of Plan B<sup>®</sup> (two doses of 0.75 mg levonorgestrel) and (2) a combined hormonal (estrogen and progestin) method known as the Yuzpe regimen, which is dispensed in the form of multiple birth control pills.<sup>III</sup> A study of EC provision in the U.S. public sector estimated the cost of Plan B<sup>®</sup> at \$32.61 (\$20.61 for the office visit and \$12.00 for the pills, the public sector price) and the cost of combined EC at \$25.26 (\$20.61 for the office visit and \$4.65 for the pills, also a public sector price).<sup>10</sup>

The study compared these figures to the medical costs of an unintended pregnancy – including the costs of birth, miscarriage, ectopic pregnancy, and abortion – which average \$1,965 based on the likelihood of each outcome (see Table 1). The authors estimated that with an efficacy rate of 89 percent, a single use of Plan B<sup>®</sup> after unprotected sex could save as much as \$135.37, assuming that the pregnancy prevented will never occur later.

Likewise, with 74 percent efficacy, combined EC could save as much as \$112.97 per use. In other words, every dollar spent on Plan B<sup>®</sup> could save \$4.15, and every dollar spent on combined EC could save \$4.47 in the public sector.<sup>10</sup> Estimates of cost savings of both EC regimens have also been reported in other studies in the U.S. and in Canada.<sup>7, 8</sup>

- **Provision of EC in advance of need is cost-effective:** Advance provision of EC to women using less effective methods of routine contraception (e.g., condoms, spermicides, or withdrawal) saves money in both the public and private (managed care) sectors.<sup>7, 10</sup> The amount of money saved depends on the cost of the woman’s routine contraceptive method and the consistency with which she uses EC. For example, an analysis of advance provision of three packs of Plan B<sup>®</sup> in the public sector found the highest savings (\$335/year) among cervical cap users if they take Plan B<sup>®</sup> every time they have unprotected sex, assuming that the pregnancy prevented will not occur at a later date.<sup>10</sup> The authors estimated the lowest savings (\$183/year) among women using male condoms who use EC inconsistently (i.e., 75 percent of the time needed).<sup>10</sup> EC advance provision is particularly cost-saving for adolescents, who often use routine contraception irregularly or incorrectly. For example, providing EC with male condoms to an adolescent has been estimated to cost \$582 in the public sector over five years, but could save \$2,497 over the costs from using no contraceptive method.<sup>3</sup>

**Table 1: Medical Costs of Unintended Pregnancy and EC Use<sup>10</sup>**

Cost	Value (US\$)
<b>Average cost of an unintended pregnancy*</b>	1,964.69
Average cost of an ectopic pregnancy (1% of outcomes)	3,490.00
Average cost of a spontaneous abortion (12% of outcomes)	518.00
Average cost of a birth (37% of outcomes)	4509.00
Average cost of an induced abortion (51% of outcomes)	429.00
<b>Cost of Plan B<sup>®</sup></b>	12.00
<b>Cost of combined EC</b>	4.65
<b>Cost of physician visit</b>	20.61

\*Assumes that an unintended birth, if avoided today, will never occur later.

II For additional information about the two available forms of EC pills, see the briefs in this series titled: *Is Emergency Contraception Effective at Preventing Pregnancy?* and *Is Emergency Contraception Safe?*

III A dedicated product for the Yuzpe regimen was previously available under the brand name of Preven<sup>®</sup> (two doses of 100 µg ethinyl estradiol and 0.5 mg levonorgestrel) but was discontinued in 2004 because it was less effective and caused more side effects than Plan B<sup>®</sup>.

- **Pharmacy access to EC offers additional savings:**

In 2006, the U.S. Food and Drug Administration granted limited nonprescription status to Plan B<sup>®</sup>, enabling pharmacists to dispense it directly to women aged 18 and older. As of 2008, nine states (AK, CA, HI, MA, ME, NH, NM, VT, and WA) allow pharmacy access for women of all ages,<sup>13</sup> and worldwide, EC is available over-the-counter or directly from a pharmacist in at least 50 countries.<sup>14</sup> Removing the prescription requirement for EC provides easier access and eliminates costs associated with a doctor's visit. An EC decision-making analysis has suggested that women with pharmacy access to Plan B<sup>®</sup> are more likely to seek the pills after unprotected sex, improving their chances of preventing pregnancy. As a result, pharmacy access could reduce costs by \$179 per use in the private sector and \$57 per use in the public sector over a nine-month period.<sup>11</sup> Cost-savings of pharmacist-prescribed EC have also been documented in Australia.<sup>9</sup>

- **Increasing EC access could save Medicaid funds:**

In December 2005, Congress approved \$5 billion in cuts to Medicaid in an effort to reduce federal spending.<sup>15</sup> Improving access to EC could save Medicaid program costs without eliminating services for those in need. The New York State Comptroller's Office has estimated savings to the state's Medicaid program if EC were more widely available (e.g., through over-the-counter or pharmacy access). Assuming that EC could prevent half of all pregnancies associated with Medicaid at a cost of \$28.50 per use, the state could save \$261.6 million per year by preventing more than 50,000 pregnancies.<sup>12</sup> Specifically, the reduction in pregnancies would result in 23,018 fewer births at a savings of \$248.8 million and 29,370 fewer abortions at a savings of \$12.8 million.

- **EC is cost-effective in developing countries:**

Preventing unintended pregnancy is particularly imperative in developing countries, where nearly 700,000 women died because of complications associated with unintended or unwanted pregnancies between 1995 and 2000.<sup>16</sup> EC has the potential to prevent many of these pregnancies, while saving both lives and money. An analysis comparing the public sector cost of EC (estimated at \$0.25, with no cost for the office visit) with the average medical costs of unintended pregnancy (related to birth, miscarriage, ectopic pregnancy, and abortion) found that, assuming 85 percent efficacy, EC is cost-effective in a number of developing countries. For example, in Peru, EC use could reduce the average public sector cost of an unintended pregnancy by 80 percent (from \$5.10 to \$1.04 per woman).<sup>6</sup> Following the same model, these pregnancy- and childbirth-related costs could be reduced by 75 percent in Uganda (from \$2.31 to \$0.59), 63 percent in Ghana (from \$1.15 to \$0.42), and 44 percent in Cambodia (from \$2.65 to \$1.49).<sup>6</sup>

## Routine Methods of Contraception Are Also Cost-Effective

EC is not the only form of contraception that is cost-effective. Preventing pregnancy with routine contraception also saves money, particularly when compared to the costs of using no method at all.<sup>2-4</sup> For example, a woman in the U.S. using intrauterine contraception would theoretically prevent 4.2 pregnancies over five years, avoiding expenditures of more than \$14,000.<sup>4</sup> Even less efficacious methods save money; use of the sponge or cervical cap could save nearly \$9,000 over five years.<sup>4</sup> Since routine methods of contraception are more effective at preventing pregnancy, the addition of EC as a back-up could result in the greatest cost-savings.

## Health Insurance Should Cover EC

Insurance coverage of contraception is also cost-saving: it has been estimated that employers could reduce their average per employee insurance cost by 15 percent by including a contraceptive coverage benefit.<sup>17</sup> Moreover, the U.S. Equal Employment Opportunity Commission (EEOC) has determined that employers must cover prescription contraceptives to the same extent that they cover other prescription drugs under their health plans, or they may be held liable for sex discrimination.<sup>18</sup> This ruling was upheld by a federal court in the 2001 *Erickson v. Bartell Drug Co.* decision.<sup>19</sup> As of 2008, 27 states had enacted legislation requiring insurers that cover prescription drugs to include contraceptive coverage.<sup>20</sup>

Insurance coverage of EC, however, remains limited. There have been efforts to exclude EC in a federal bill mandating insurance coverage of contraceptives; this bill has languished in Congress for nearly a decade.<sup>19, 21</sup> At the state level, Arkansas and North Carolina exclude EC from their contraceptive coverage mandates, while Indiana and Texas omit EC in their Medicaid family planning expansion programs.<sup>13, 20</sup> Medicaid coverage of EC also varies by state: a 2005 informal investigation identified two states that do not cover EC under any circumstances; 15 states that impose limitations on access to EC (e.g., by requiring prior authorization – additional information from the provider about the medical necessity of the drug); and one state that covers EC only in cases of rape or incest.<sup>22</sup>

## EC Can Achieve Even Greater Cost Savings

The potential cost savings of EC have yet to be fully realized. Many studies actually underestimate EC's cost savings by omitting from their analyses the social and psychological costs of unintended pregnancy or the substantial costs of supporting a child beyond birth. Even if EC is purchased at two or three times above the current public sector price, it would remain cost-effective given the high pregnancy- and childbirth-related costs it averts.



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### Suggested citation:

Weiss DC, Harper CC, Speidel JJ, Raine TR. *Is Emergency Contraception Cost-Effective?* Bixby Center for Global Reproductive Health, University of California, San Francisco. April 2008. Available at: <http://bixbycenter.ucsf.edu/>.