ther defines "unborn child" to include a fertilized egg even if it has not yet been implanted in the uterus.  $^{11}$ 

The statewide availability of emergency contraception through pharmacies in South Dakota is unknown. However, the knowledge and attitudes of the state's pharmacists may affect whether pharmacies carry the medication and whether individual pharmacists dispense it. Because pharmacists in South Dakota are professionally organized at the state level, and are licensed by the state, they could be influential in framing state laws about access to emergency contraception.

## **BACKGROUND**

Each year, 3.5 million unintended pregnancies occur in the United States. <sup>12</sup> Because contraceptive failure and discontinuation rates are high, <sup>13</sup> women need a backup method when unprotected sexual intercourse occurs. Emergency contraceptive pills can serve as that backup and can reduce the number of unintended pregnancies and abortions. <sup>14</sup> Emergency contraceptive pills are a short course of a high dose of oral contraceptives that should be taken within 72 hours after unprotected intercourse. <sup>15</sup> Some studies have shown that the method is effective up to 120 hours after intercourse. <sup>16</sup> Plan B is on the market, but other oral contraceptives may be used.

The exact mechanism of action of emergency contraceptive pills is unknown, but the medication is thought to inhibit ovulation, fertilization, transportation of the fertilized egg to the uterus or implantation of the blastocyst in the endometrium. <sup>17</sup> The hypothesized mechanism of action is most similar to that of oral contraceptives, which inhibit ovulation and fertilization. <sup>18</sup>

Because emergency contraceptive pills are a relatively new medication and because they have attracted the attention of individuals who are opposed to some contraceptive choices, several unfounded concerns have arisen about the consequences of their use. For example, like oral contraceptives, emergency contraceptive pills taken by pregnant women are not associated with birth defects. <sup>19</sup> Repeated use of the method does not appear to pose increased health risks, nor is there evidence that women are at risk of habitual use. <sup>20</sup> Further, because emergency contraceptive pills do not act on a previously implanted embryo, they do not cause abortions; <sup>21</sup> they can, in fact, reduce the need for induced abortions. <sup>22</sup>

Even individuals who should be informed, such as those who prescribe the medication and pharmacists who dispense it, may not understand the presumed mechanism of action of emergency contraceptive pills. <sup>23</sup> In a 1999 Planned Parenthood of New York City survey of 100 pharmacists, 97 provided incorrect information or no information at all about how emergency contraception works, and 38 did not know that it was available. <sup>24</sup> Other obstacles to access arise when pharmacists refuse to dispense emergency contraceptives because of their morals, values or incorrect perception that this type of medication causes abortions. <sup>25</sup> In some states, pharmacists are legally protected from dis-

pensing a drug if they feel a moral objection to doing so.<sup>26</sup>

Another controversial issue is whether women should be provided with advance prescriptions for emergency contraceptive pills, thus allowing them to use the medication immediately following unprotected intercourse.<sup>27</sup> Jackson et al. found that an advance supply of emergency contraceptive pills was associated with an increased use of the medication but did not affect routine contraceptive use.<sup>28</sup>

Pharmacists play a critical role in a woman's access to emergency contraceptive pills, but few studies have examined their dispensing practices, knowledge and attitudes. Because South Dakota has both a liberal collaborative agreement and a restrictive "morals" clause, and because it appears to be moving toward restricting abortion, we surveyed the state's pharmacists to assess their dispensing practices, as well as their knowledge and attitudes about the method. To our knowledge, this is the first state survey about emergency contraceptive pills that includes pharmacists from a variety of practice settings.

## **METHODS**

## **Study Design**

A 14-item survey about dispensing practices, knowledge and attitudes about emergency contraceptive pills was mailed to the 810 pharmacists who lived in the state and were registered with the South Dakota Board of Pharmacy. No identifiers were placed on either the survey or the return envelopes, to assure confidentiality. Some survey questions were adapted from an Advocates for Youth survey of pharmacists about adolescent use of the method. <sup>29</sup> The survey and a cover letter signed by the primary author were mailed in October 2003, with a self-addressed stamped envelope. A follow-up letter was mailed three weeks later. The institutional review board at the University of Minnesota approved the study protocol. The study was conducted without external funding or sponsorship.

Of the 810 pharmacists, 544 returned surveys, yielding a 67% response rate. Upon review of the completed surveys, 39 pharmacists were deemed ineligible for the following reasons: Twenty-one were retired, seven were not currently practicing pharmacy, seven worked in occupations with no direct patient or customer contact, two did not specify their workplace, one was deceased and one worked out of state. Another four pharmacists were excluded from analysis because their primary workplace was unclear. Thus, 501 surveys were available for analysis (62%). Differences between the sample frame and respondents included in the analysis could not be assessed because information on nonrespondents was unavailable.

## **Data and Analysis**

Pharmacists were asked to report their sex and pharmacy practice characteristics (i.e., years of practice, community size and type of pharmacy). To measure the extent of emergency contraceptive pill dispensing in South Dakota, we asked respondents if their pharmacy dispensed the medication (i.e., Plan B or oral contraceptives). Those who re-