Response to PDQ Screening and Prevention Editorial Board Statements Regarding Mammography

Q-1: What is the PDQ Screening and Prevention Editorial Board and what have they recently said about the effectiveness of screening mammography?

A-1: The PDQ Screening and Prevention Editorial Board is an independent committee of cancer experts that summarizes information from the scientific literature about the effectiveness of cancer screening and cancer prevention activities. The PDQ does not itself issue guidelines or recommendations. In meetings this month, the board discussed a paper from the Cochrane Collaboration published in *Lancet* in October, 2001. According to reports, the Board concluded that issues raised in the Cochrane paper should be included in a new PDQ summary on mammography. The Cochrane paper stated that there was insufficient evidence now available to conclude that mammography screening is effective in reducing mortality because research studies on mammography were flawed. The new PDQ summary, scheduled for release in April, 2002, may include statements about the inconclusiveness of the evidence and may state that women and their physicians should engage in a shared decision making process to determine whether to use mammography. PDQ statements are made available to physicians and the public on the National Cancer Institute (NCI) Web site (http://www.cancer.gov/cancer_information/pdq/) and telephone information system (1-800-4-CANCER). However, these statements are not official NCI positions and do not translate into NCI guidelines. The current PDQ summaries state that mammography does reduce risk of death from breast cancer. This has been the conclusion of the PDQ Board for a number of years.

Q-2: What is CDC's response to this news report?

A-2: CDC monitors new screening research and recommendations and uses that information in developing its cancer prevention and control programs. At present, neither NCI nor the PDQ Board has provided new official information for consideration. CDC reviewed the Cochrane paper in the *Lancet* when it was published and did not find sufficient new information to make fundamental changes in the National Breast and Cervical Cancer Early Detection Program. Although the Cochrane Review raises important questions about the quality of mammography research, many other reviewers and expert panels have reviewed the same research that the Cochrane reviewers examined and have concluded that mammography is effective.

In the Guide to Clinical Preventive Services (2nd edition), the U.S. Preventive Services Task Force (USPSTF) recommends routine screening for breast cancer, with mammography alone or mammography and annual clinical breast examination. The USPSTF is an independent, expert advisory counsel convened by the U.S. Public Health Service. This counsel thoroughly reviews the evidence for and against hundreds of preventive services, including tests, immunizations, and medical interventions, and recommends them only when there is sufficient evidence that they are effective. The USPSTF is now completing another review of the evidence for mammography screening.

Q-3: What were the recent findings of the Cochrane Library review that assessed the effectiveness of mammography?

A-3: A recent article, published in the *Lancet* medical journal (v. 358, October 20, 2001), presents findings based on a review of seven mammography studies conducted over the past several decades. The review was conducted by the Cochrane Breast Cancer Group of the Cochrane Collaboration[1]. The mission of the Cochrane Collaboration, a not-for-profit international organization, is to help people make well-informed decisions about healthcare by preparing, maintaining, and promoting the accessibility of systematic reviews of the effects of healthcare interventions. The 2001 *Lancet* and Cochrane Collaboration articles were written in response to reader responses to an earlier article in *Lancet* (v 355, January 8, 2000) by the same authors. The 2000 and 2001 articles reached similar conclusions about the lack of effectiveness of mammography.

Although the authors themselves did not conduct studies of mammography, they reviewed the findings and methods from those studies. The reviewers identified what they considered to be several problems with the scientific methods, indicating that the studies may not have adhered to sound scientific principles. They also found inconsistencies among the studies in their main findings. The major problems the reviewers identified were:

- selection of women to participate in and/or to remain in the studies, which made the women in the mammography groups (those invited to receive mammography) different in some ways from those in the control groups (those not invited to receive mammography), for example that more women with pre-existing breast cancer were identified and excluded from the mammography groups than from the control groups

- differences in types of treatment provided for women with breast cancer in mammography groups versus those in control groups, for example that women in the mammography groups may have been more likely to receive mastectomy

- differences between mammography and control groups in the decisions about whether deaths were due to breast cancer, incorrectly reducing the number of deaths due to breast cancer in the mammography groups

- inconsistencies between results showing that mammography screening reduced deaths from breast cancer but did not reduce deaths overall

- significant differences in findings from study to study, with two studies showing no reduction in deaths from breast cancer and others demonstrating a reduction

According to the reviewers, the two studies they thought were relatively well conducted did not actually show that mammography reduced risk of death from breast cancer. The reviewers also argued that while five other studies concluded that mammography was effective in reducing

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[1]Olson O, Gotzche PC. Screening for breast cancer with mammography (Cochrane Review). In: The Cochrane Library, Issue 4, 2001. Oxford: Update Software.

deaths from breast cancer, these five studies had serious errors and could have produced incorrect evidence supporting the effectiveness of this screening tool.

As a result, the reviewers stated that the conclusions previously maintained about the effectiveness of mammography should be reconsidered. Specifically, the Cochrane reviewers concluded that evidence does not show that women who receive mammography screening are less likely to die from breast cancer than women who do not have mammography screening, and the studies do not show that women who receive mammography live longer.

Consequently, the researchers recommend that women, medical professionals, and policy makers reconsider whether or not to participate in, or support, mammography screening programs.

Q-4: What is CDC's response to this review of mammography's effectiveness as presented in the Lancet?

A-4: CDC takes seriously the concerns raised by the Cochrane reviewers as well as other published reports on breast cancer screening. The 2001 Cochrane review is the latest in a series of articles about mammography effectiveness. Concerns about the methods used in some of the studies and inconsistencies in results among the studies have been debated in a large number of published articles. Many of the concerns raised by the Cochrane reviewers have been raised previously and addressed by investigators involved in the 7 original mammography studies. The Cochrane article lists more than 250 articles published in this ongoing debate. Some reviewers favor methods and evidence from certain studies; other reviewers favor other studies. Most reviewers have come to the conclusion that mammography is effective. CDC monitors publications on the effectiveness of breast cancer screening and will continue to do so.

CDC does not convene expert panels to undertake systematic reviews of the evidence of the effectiveness of cancer screening tests nor does it make cancer screening recommendations. As the Nation's Prevention Agency, CDC's mission in cancer is primarily two-fold: First, to translate the gains made in basic research into practical interventions for the health of our citizens. And then, to promote those practices on a wide-scale basis so that the public reaps the benefits of scientific discovery as quickly as possible.

The CDC accepts the guidelines and recommendations of other well-recognized scientific groups, who have independently reviewed evidence from the seven original studies and concluded that mammography screening is effective. In the Guide to Clinical Preventive Services (2nd edition), the U.S. Preventive Services Task Force (USPSTF) recommends routine screening for breast cancer, with mammography alone or mammography and annual clinical breast examination. The USPSTF is an independent, expert advisory counsel convened by the U. S. Public Health Service; this counsel thoroughly reviews the evidence for and against hundreds of preventive services and them only when there is sufficient evidence that they are effective. Likewise, the National Cancer Institute (NCI), the federal government's premier cancer research agency, has convened consensus panels of scientists and practitioners to review evidence of the effectiveness of mammography, and those panels have concluded that mammography is effective. Most medical associations and other organizations that issue guidelines do

recommend mammography for breast cancer screening - http://www.ahcpr.gov/clinic/cpsix.htm#screening.

CDC has discussed the issues raised by the Cochrane review with other agencies and organizations and will continue to have such discussions as new evidence is made available. At present, the NCI and the USPSTF will continue to evaluate information as it is made available, but at this time, neither has concluded that their mammography screening recommendations should be changed. CDC will continue to follow the guidelines and recommendations set forth by the USPSTF and NCI for mammography. The development and changing of guidelines is a meticulous and deliberative process that involves many people, inside and outside government. Evaluating the quality of studies is a difficult process, and respected scientists may disagree.

Q-5: Does CDC intend to change its program activities on the basis of the Cochrane review?

A-5: CDC does not intend to modify its primary program activities related to the early detection of breast cancer on the basis of this new review. The National Breast and Cervical Cancer Early Detection Program, which funds mammography screening nationwide, will continue. CDC is open to changing its activities based on systematic review of new scientific evidence as it comes available, conducted by appropriate agencies and organizations.