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Commentary

Opportunities to Improve Cervical Cancer Screening in the United States

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Cervical cancer screening is considered a public health success story in the United States. In contrast to developing countries where cervical cancer is a leading cause of mortality and morbidity, the widespread adoption of Pap smear screening since the 1960s in the United States has led to an estimated 50 percent reduction in the incidence of cervical cancer. Yet with still 12,000 new cases of and 4,000 deaths from cervical cancer each year (American Cancer Society 2010), the U.S. screening program is far from perfect. In this issue of *The Milbank Quarterly*, Habbema and colleagues provide a cross-national case study of cervical cancer prevention efforts in both the United States and the Netherlands, describing the evolution of divergent cervical cancer–screening policies and comparing time trends of screening practice and disease mortality in the two countries. Reporting similar mortality rates but a three- to fourfold higher Pap smear testing rate in the United States, the case study lends support to the suspicion that cervical cancer screening in this country is overly aggressive and inefficient. The case study draws attention to several key priorities for strengthening cervical cancer programs that are generalizable to other preventive health efforts in the United States and beyond.

Access to Cervical Cancer Screening

While the comparison by Habbema and colleagues focuses on inefficiencies among women with access to screening, approximately half of

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all cervical cancer cases in the United States occur in women who are underscreened or never screened (National Institutes of Health 1996). Furthermore, the cervical cancer burden is not evenly distributed, with the highest risk in minority and disadvantaged women (Downs et al. 2008). Accordingly, significant health gains would likely come from redirecting the excessive expenditures of the current U.S. screening program—estimated by the authors to be as much as $3 billion each year—toward improving the reach of cervical cancer screening. Employing multipronged interventions, including culturally competent educational campaigns to communicate the importance of screening to women from diverse backgrounds, the deployment of community health workers to engage women in areas of low penetration, and greater investments in existing public health programs aimed at providing access to low-income women, such as the U.S. National Breast and Cervical Cancer Early Detection Program (NBCCEDP), could break down known barriers to screening. With recent U.S. guidelines supporting decreased screening frequency for women at very low risk (e.g., teenaged girls and women with repeated negative screens) (American College of Obstetricians and Gynecologists 2009), a shifting of available resources would likely enable screening access to increase in a cost-neutral—and possibly cost-saving—manner.

Appropriate Management and Treatment

Successful preventive health programs necessitate access to and compliance with the full spectrum of care, including the initial screening visit, the diagnostic follow-up of screen-positive cases, and, if necessary, timely treatment and/or palliative care. Despite the high proportion of women who have been screened over the past five years (exceeding 80% in both the United States and the Netherlands), neither country is close to eliminating cervical cancer, suggesting failures in the downstream processes that in both settings involve diagnostic colposcopy with or without biopsy and treatment based on disease severity. Evidence from the United States indicates that African American women have equal or higher screening rates than white women but double the mortality from cervical cancer, largely as a result of a later diagnosis of disease and a lower probability of receiving effective treatment (Downs et al. 2008). Habbema and colleagues' evaluation of "screening intensity" as

measured by total Pap smear consumption is a blunt tool to assess program inefficiencies. Indeed, although an unlikely story, in their current evaluation they cannot rule out the possibility that the more intensive screening protocol in the United States might lead to greater reductions in cervical cancer if the management of women with abnormal screening tests were improved. The crude comparisons using aggregate data in the current study underscore that in order to understand why women in both countries remain at appreciable risk for cervical cancer, we must drill down from the national level to the local levels to pinpoint where failures in the cancer care continuum occur.

Elucidation of Harms

Evidence of patient harms is a stronger catalyst for change than is evidence of inefficiency or lack of effect. As Habbema and colleagues note, policy analyses have long suggested that annual screening, leading to the overdetection and subsequent treatment of cervical lesions that would otherwise resolve without intervention, yields only nominal health gains but at an exorbitant cost. Yet guidelines to decrease the frequency of Pap smears in the general population did not gain traction in the United States until higher rates of adverse pregnancy outcomes among women who had undergone excision of cervical lesions were observed (Arbyn et al. 2008). Although the authors duly attribute the historical inefficiency of the U.S. cervical cancer–screening program to a decentralized health system, a tenuous pipeline of evidence to policy, and multiple stakeholders, we cannot ignore the influence of the prevailing and often misguided notion in the United States that "more is better." As a public health community, we must confront the uncomfortable reality that benefits gained from interventions may also be accompanied by significant harms, in the form of not only excess mortality and morbidity but also increased anxiety, productivity losses, and costs. As we pursue comparative effectiveness research to guide health policy, delineating and communicating both negative and positive health outcomes will be as critical as estimating the composite net benefits of competing health interventions.

In summary, despite the great achievements of the U.S. cervical cancer–screening program, opportunities abound. Minimizing overuse

and redirecting resources to remove barriers to screening, improving the continuity and quality of care, and ensuring compliance with evidence-based policy are essential steps toward effective, equitable, and efficient cervical cancer control. The growing use of electronic medical records in the United States may be leveraged to implement invitation and reminder systems for patients and providers, an approach that has been successful in the Dutch system and that may offset concerns of reduced compliance with guidelines for screening intervals beyond every year. Future evaluations and policy decisions will need to consider both the benefits and the harms of different strategies against cervical cancer, especially with the innovative yet costly technologies continuously entering the market. As the United States undergoes a transformative period of health reform, cross-national comparisons provide an opportunity to gain perspective and share the lessons learned for cervical cancer prevention as well as for preventive programs broadly defined.

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