

## Editorial

# Advancing an Agenda on Risk and Chronic Disease

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Today, chronic diseases account for 60% of deaths globally. In 2000, this would translate into more than 33 million deaths from cardiovascular disease (CVD), especially coronary heart disease (CHD) and stroke (16 million deaths); cancer (7 million deaths); chronic respiratory disease (3.5 million deaths); and diabetes (almost 1 million deaths). Mental health problems further contribute to the burden of disease in many countries. Despite much of the media focus on communicable diseases, only in Africa are such diseases more frequent as causes of death than chronic diseases.

It is clear that chronic diseases are important contributors to health inequalities within and between countries. They also are heightening disparities among poor populations. This is largely because of inequalities in the distribution of major chronic disease risk factors—principally diet, exercise, environmental risks, and tobacco use. This global pattern of death and disability will continue to get worse as chronic diseases (namely CHD and stroke) are expected to be the leading causes of death and of disability adjusted life years lost (DALYs) by the year 2020.

We are now facing a challenging time in how people—from policymakers to the public—perceive risk and advance health policy. Faced with the need to develop strategies to combat chronic disease, government agencies and private organizations encounter a host of challenges: Who is at risk, what are the options for risk management, who can and does control the risk, what is the nature of the process to determine the risk mitigation, and other related areas. For example, a risk judged more certain (e.g., the risk from a known disease) may be viewed as less risky than an equivalent or smaller risk that is perceived as more ambiguous (e.g., the risk from a new, unfamiliar vaccine, or exposure to flesh eating bacteria). Hence, overestimating rare causes of death (e.g., bioterrorism) can garner public health resources while underestimating the burden of common ones. At all levels of society, it is a challenge to convey meaningful technical information to inform decisions.

Oftentimes, public concerns of minimal risk get limited resources. This is most obvious in how people avoid preventive measures for cancer—a perceived long-term risk factors and distal consequences, versus judgment of risk acceptability related to treatment of cancer. Yet, the threshold on the probability of an adverse outcome and its magnitude or severity for certain treatments is under intense scrutiny by regulators of medicines—notably the U.S. Food and Drug Administration and the European Medicines Agency. This in many cases demands better medicine and certainty from drugs that provide incremental scientific progress as limited innovation

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in a challenging area such as cancer. For example, should a treatment be approved for patient use if it only offers 5%–25% efficacy? Or should it be allowed in terminal cases if it has a side effect in 10% of the population? Should pain or palliative medicines have a different threshold than curative interventions? Would an HIV vaccine with 25% efficacy offer value and be approved for use?

Such questions are being decided on the grounds of science and the protection of the public, while offering limited opportunity for ethical deliberation and input from those who most likely will benefit from future innovation. Additional new hurdles of the “value” or cost effectiveness of prolonging life through different measures also are clouding science and the rights of the individual to be offered the best available treatment options to choose from.

One such challenge on the horizon is the approval and uptake of a vaccine to prevent cervical cancer. Cervical cancer is still the leading cause of cancer deaths worldwide, the second most common form of cancer in all women (after breast cancer), and the most common in younger women.

As the human papilloma virus (HPV) has been identified as the most important risk factor with more than 80 types of viruses (30 strains that can be passed sexually) a vaccine has been developed for use in women of reproductive age to protect against cervical cancer. Currently, cervical cancer is detected well with annual Pap smear tests; if detected early, effective treatment is nearly 100% successful. Further preventive measures such as condoms do fully prevent transmission of HPV.

The Papanicolaou smear, commonly termed the Pap test, is arguably the most effective cancer-screening test of any kind. Because of the Pap test, deaths from cervical cancer declined 74% between 1955 and 1992, and the death rate continues to decline at a rate of about 2% a year.

Even though there is progress, women still die from cervical cancer. Even with detection and effective treatment, about 3,710 women will die from cervical cancer in the United States during 2005. Recently, a vaccine has been developed for HPV that will require ethical deliberation and societal choices. For example, should adolescent girls, parents, and the public submit an extra protective measure for a preventable and treatable cancer that is related to a sexually transmitted disease? This development will present important dialogue to help set the course for the health of the next generation.

Those in public health, public policy, and communication who wish to advance the health of the public can offer important support by educating the public with trustworthy information so that people can better understand risk factors and mitigation as well as some basic epidemiology with relevance to their lives. Further ethical opportunities should be promulgated to give the public enough information to enable them to make decisions according to their own values, and in some cases in partnership with family members and health professionals. Such cross-fertilization between fields could assist in the future as we will face challenges that will not be solved by science alone and will require development of healthier policies to protect rather than erode public health.