SP3-1

Eliminating the Suffering and Death Due to Cancer

Director, National Cancer Institute, USA
Andrew C. von Eschenbach, M. D.

The United States National Cancer Program was inaugurated with passage of the National Cancer Act in 1971. In the intervening three decades, we have witnessed an exponential expansion of our knowledge of cancer. Cancer was once a disease we understood only by what we could see or touch. During the last century, using the power of the microscope, we were able to see cancer at a cellular level. Over the past 10 years or so, we have begun to take full advantage of the latest technologies, which allows us to see cancer at the molecular level. And that exponential progression from the macroscopic to the microscopic to the molecular is enabling us to build a future on new foundations of knowledge. Cancer is not an event, but a disease process that begins before a tumor mass even forms, and ends with metastasis, suffering, and death. Today, we are beginning to understand the process and how it is controlled by genes and proteins. In the future, we will use the science of genomics to determine the gene expression profiles of normal, pre-cancer, and cancer cells. With proteomics we will use protein patterns to distinguish between cancer and benign conditions. With nanotechnology will come the capacity to create materials and devices so small that they are measured on a molecular scale. We continue to search for biomarkers that will provide earlier alerts to cancer. Advanced imaging is leading us to real-time cellular assessments. Our understanding of cancer as a process is providing targets for prevention, detection, elimination and control interventions. A new era of individualized medicine is within our grasp. We, at the NCI, are committed to capitalize on this progress. Today, the outcomes of cancer research have the power to transform the vision of the National Cancer Act of 1971 into a national goal: The elimination of suffering and death due to cancer. Together with the dedication of thousands of international oncology research colleagues, this ambitious but achievable goal holds the promise to make cancer a chronic, treatable condition that no longer ends life. We owe it to cancer patients around the world—to meet this challenge.