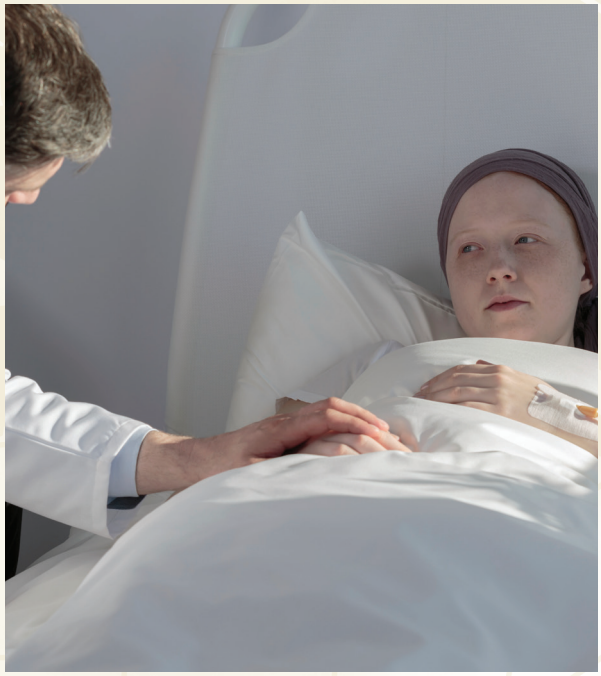
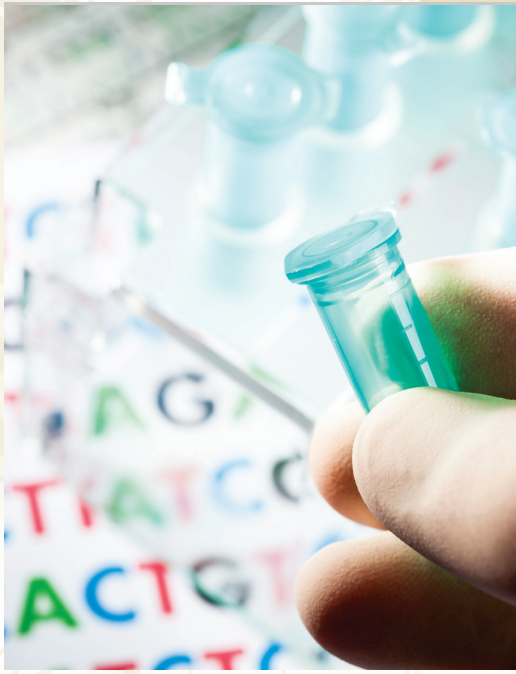
Cancer Research





RTI International's multidisciplinary team of health professionals works with partners to understand the factors that increase cancer risk and to develop, employ, and promote effective strategies to reduce the burden of cancer and eliminate cancer health disparities. From creating messages that encourage a healthy lifestyle to conducting research to move cancer prevention and control into the era of personalized medicine, we can help improve the quality of life for individuals and communities.

RTI INTERNATIONAL

Our Expertise

Survey Research and Data Collection

RTI's team of experts designs and conducts a variety of national and international cross-sectional and longitudinal cancer studies. We offer a range of data collection approaches—including telephone, mail, and mixed-mode surveys and focus groups. We perform record abstraction and conduct web-based interviewing and panels.

Biological and Environmental Sample Collection, Processing, and Analysis

RTI can obtain cost-efficient, high-quality biological and environmental samples. We routinely collect samples in clinical and home settings and often via mailed kits. RTI's laboratories support research in proteomics, biomarkers of exposure, and analysis of environmental samples.

Health Statistics and Biostatistics

RTI offers services in every aspect of survey design and analysis used in cancer-related studies, including sample design, imputation, and adjustment for nonresponse and weighting. Our programmers and analysts provide statistical support using a variety of programming languages, statistical packages, and database management tools.

Bioinformatics and Computational Biology

RTI constructs large-scale relational databases and data warehouses and develops sophisticated bioinformatics tools that enable users to access, analyze, and share heterogeneous data using current standard vocabularies and systems. We process and analyze "omic"-scale data, perform genotype imputation, and identify genome-wide associations.

Health Information Technology and High-Performance Computing

RTI has high-performance computing capabilities to deal with the large amounts of data generated from the analysis of cancer-related health data. We develop personal monitoring systems using hand-held and smartphone technologies that integrate sensor data with activity, dietary, substance use, and environmental diaries for ecological momentary assessment of health, behavior, and environmental stressors.

Epidemiology

RTI epidemiologists design, implement, and analyze case-control, cohort, and cross sectional–based research studies to understand the incidence, prevalence, risk factors, and etiology of cancer. We have broad experience with establishing registries, data linkage, and data integration of vital status, cancer status, environmental exposures, demographic, medical, and census data.

Data Management and Data Coordination Centers

For more than 3 decades, RTI has served as the data coordination center for more than 35 multisite studies. In this role, we provide statistical and methodological guidance from the initial study design throughout implementation. We also design and provide the data capture and management systems, coordinate and monitor data collection and management activities, and provide progress reports to governing and oversight bodies as well as to the funding agency.

Health Services Research

RTI researchers explore how health systems, societal factors, medical technologies, health care policies, and personal behaviors affect the entire continuum of cancer care. We evaluate patterns of medical care and patient outcomes; assess quality of care, costs, and cost-effectiveness; study barriers in access to care and disparities in health outcomes; and examine decision making by patients and providers.

Geospatial Information Systems (GIS) Technology

RTI uses GIS technology to map cancer incidence and mortality, analyze and manage geospatial environmental data, and develop mapping systems to support large-scale household surveys and epidemiologic studies of cancer.

Drug Development and Preclinical Studies

RTI's drug discovery and development teams helped revolutionize modern cancer research by producing the anti-cancer agents Camptothecin™ and Taxol®. We develop animal models for efficacy and safety testing of drug compounds and design and perform specialty studies for novel compound development and preclinical testing to assess the safety of drug products to prevent or treat cancer.

Health Economics

RTI applies health economics and operations research to design, implement, analyze, and evaluate health care policy, with emphasis on programs and interventions aimed at eliminating cancer risk factors and improving health and quality of life. We analyze cost of illness, cost and prevention effectiveness, cost utility benefit, and resource allocation.

Comparative Effectiveness Research

RTI researchers produce rigorous systematic reviews on topics related to cancer prevention, diagnosis, treatment, and care.

We evaluate the relevant scientific literature to make informed decisions that will improve outcomes for individuals with various types of cancer.

Health Communication and Health Promotion

RTI uses a variety of qualitative and quantitative methods to develop, test, disseminate, and evaluate health and risk communication messages directed at target audiences. These include formative message development, focus groups and case studies, materials design, cognitive and usability testing, and process and outcome evaluations.

Program Evaluation

RTI offers expertise in program evaluation to provide feedback to inform programmatic decision making, policy development, effective allocation of resources, sustainability, and potential for program replicability. We use mixed-method approaches to collect and analyze data; assess primary and secondary data sources; and develop, test, and disseminate large-scale surveys.

Selected Research Projects

National Survey of Precision Medicine in Cancer Treatment. For this National Cancer Institute (NCI) project, RTI is conducting a national survey of oncologists using a sequential mixed-mode approach (mail, then web). The survey assesses their experiences, attitudes, and recommendations concerning genomic tests; determines the prevalence of genomic testing in oncology; and identifies facilitators and barriers for integrating genomic testing into oncology.

Coordinating Center for Pediatric Preclinical Testing Consortium (PPTC). This NCI-sponsored consortium uses preclinical data to prioritize drugs that can be studied in pediatric clinical trials for children with cancer. RTI supports the development of data models that inform clinical practice and prioritize therapies for the treatment of pediatric cancers. We provide broad organizational, scientific, and analytic expertise to support NCI scientists and PPTC research.

LIVESTRONG Research Support. RTI partnered with LIVESTRONG to study cancer survivorship by developing and implementing a plan to analyze the 2012 survey data, develop data briefs on key findings, and write manuscripts. RTI is working with LIVESTRONG to develop a survey of cancer patients and their family members using a series of modules on various cancer-related topics.

Understanding Delays in Diagnosis and Treatment of Breast Cancer in India. This NCI-funded grant used mixed-methods research to develop and validate a quantitative instrument to examine the association between multilevel contextual factors that may facilitate or pose barriers to timely presentation for breast cancer care in India. RTI collaborated with the Oncology Centre at the St. John's Medical College Hospital in Bengaluru, India.

International Trends in Leukemia and Lymphoma Among Children and Adolescents. RTI collaborated with NCI investigators to examine international incidence data for leukemia and lymphoma among children aged 0–19. We used data from the International Agency for Research on Cancer's online data file for Cancer Incidence in Five Continents and U.S. data from the Surveillance, Epidemiology, and End Results (SEER) program.

Delaware Cancer Consortium Exposure Study. RTI conducted exposure monitoring to help define exposures to Delaware residents from the emissions from the coal-fired Indian River Power Plant. These exposures may provide the basis for health outcomes (such as cancer) that have a long lag time between exposure and effect.

Analysis of Anti-cancer Chemicals and Pharmaceutical Formulations. For each stage of NCI's anti-cancer drug development program, RTI staff members provide the analytical chemistry support (methods, identification/assay, and other analytical data) necessary to ensure the suitability of drugs and drug formulations. We assure that all analytical procedures are designed to satisfy the U.S. Pharmacopeial Convention (USP)–promulgated principles.

Cost of Colorectal Cancer (CRC) Treatment by Stage at Diagnosis and Insurance Status. This project compares CRC treatment cost among beneficiaries enrolled in Medicaid, Medicare, and private insurance plans and assesses differences by reviewing utilization rates of treatments and the cost of the interventions. We link cancer registry data with insurance claims databases to explore geographic differences in cost.

Barriers Related to Screening, Diagnosis, and Treatment of Oral Cancers in India. RTI is partnering with two cancer centers in India to (1) assess barriers along the cancer care continuum to identify possible interventions to improve patient outcomes and (2) perform modeling to identify cost-effective interventions.

Measuring Patient-Centered Communication (PCC) for Colorectal Cancer Care and Research. This longitudinal Patient-Centered Outcomes Research Institute–sponsored study of 1,000 CRC patients develops and field tests the theoretically based, patient-centered measures of PCC. These measures can be used for surveillance, health care quality monitoring and assessment, and research for all cancer types across the cancer care continuum.

Enhancement of SEER Data with Data from the Centers for Medicare & Medicaid Services (CMS). RTI has contracted with NCI to enhance SEER data with data from CMS and the Consumer Assessment of Healthcare Providers and Systems surveys. Augmenting SEER data with these additional data sources significantly expands the range of outcomes and care delivery research projects performed on Medicare beneficiaries.

Defining the Merck Foundation Cancer Initiative. RTI is working with the Merck Foundation to develop a cancer initiative to improve timely access to high-quality cancer care in the United States. The initiative focuses on multilevel interventions, bridges cancer types, and seeks to improve population health.

Estimating Current Occurrence of Occupational Illness. RTI provided the National Institute for Occupational Safety and Health with industry-specific estimates of the annual number and incidence of 16 illnesses, including 9 types of cancer, with well-established occupational causes. These estimates used data from epidemiologic studies, national surveys, government statistics, and exposure databases to establish rates for conditions, risks for occupational exposures, and the proportion with each exposure.

Economic Evaluation of the Centers for Disease Control and Prevention's Colorectal Cancer Screening Demonstration. RTI is using activity-based cost data collected via a web-based tool to perform cost and cost-effectiveness evaluations of participating programs. An assessment of start-up and implementation costs will identify lessons for future program development.

Economic Evaluation of Cancer Registries in Low- and Middle-Income Countries. RTI is evaluating the cost and resources needed to expand cancer registration in Columbia, Barbados, Uganda, Kenya, and India. These registries would provide the incidence and mortality data required for cancer prevention and control initiatives.

Evaluation of Cervical Cancer Screening Initiatives in Sub-Saharan Africa. RTI investigators are studying the successful cervical cancer screening program in Zambia to identify interventions to decrease cervical cancer that can be extended to other Sub-Saharan African countries—Botswana, Kenya, South Africa, and Uganda.

More Information

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