

RESEARCH

Medicines and fundamental biology dominate cancer research in high-income countries.

Cancer research spans all disciplines of science, from the social and humanistic to fundamental biomedicine. ① Cancer research in wealthy countries dominates disease-specific biomedical research. ② However, most research funding is skewed towards fundamental biology and treatment, particularly cancer medicines. While this has delivered an impressive amount

of knowledge as well as new medicines and biomarkers, many parts of the world and areas of cancer research have been left behind. For example, prevention research attracts less than 5% of funding. Global cancer is challenged by a wide variety of issues, including sustainability, disincentives for research for the public good rather than for commercial benefit, and mismatch between funding and research need.

Only a fraction (2.7%) of global investment in cancer research is spent on research directly relevant to low- and middle-income countries. Rather than development of new innovative technologies or drugs, there must be greater focus on optimizing utilization of available drugs and radiation technologies in cost-effective ways that meet the needs of low- and middle-income countries. ③ Orphan domains of research, such as prevention and cancer surgery, also need to be addressed.

Implementation research, which seeks to apply new scientific research findings, is another neglected area in global cancer research. This gap between development of scientific discoveries in cancer and their actual use to improve outcomes for patients emphasizes the need for more independent, publicly-funded research to be

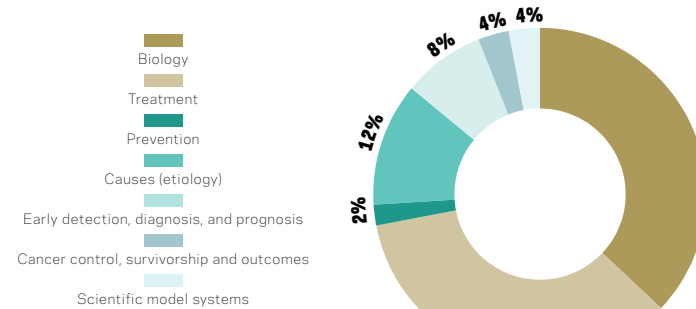
dedicated to solving research questions that have high public good, but low commercial attraction, for example in global childhood cancers and cost-effective screening.

④ There is also increasing global recognition that a national-level research is essential; for example, many countries in the Middle East and North Africa have begun to substantially engage in the cancer research agenda. However, global research remains far too exclusively centered in high-income countries.

How can we promote and drive equity in global cancer research in low- and middle-income countries? Twinning partnerships between high-income and low- and middle-income centers have already proved effective and could be expanded. A global cancer fund would provide much-needed resources to link networks and centers to build capacity and research; training and education in research methodologies always produces results. But ultimately, more research funding must be directed at global cancer research partnerships, and national cancer research capability needs to be built, particularly focused on orphan areas such as surgery.

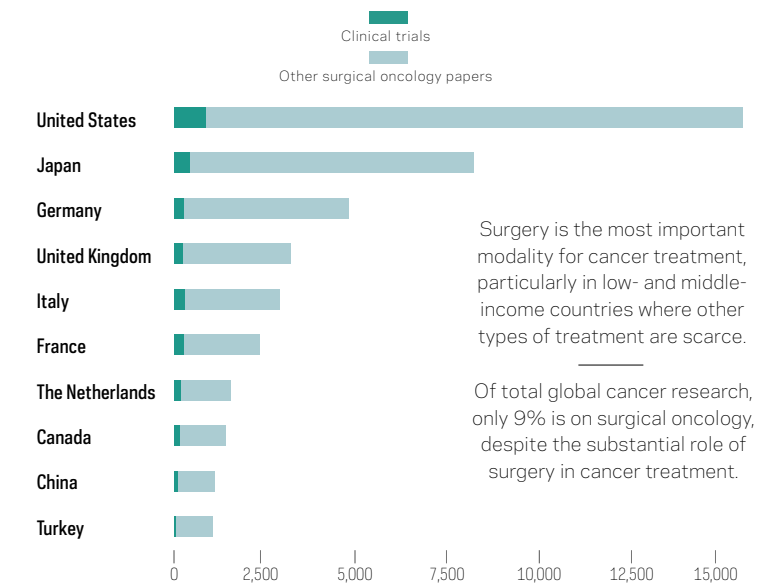
② The majority of cancer research funding continues to go towards understanding the biology and treatment of cancer.

PERCENTAGE OF CANCER RESEARCH FUNDING ALLOCATED BY COMMON SCIENTIFIC OUTLINE CATEGORY IN EUROPE, 2002-2003



③ Clinical trials, which drive innovation and better outcomes for patients, constitute only a small portion of existing surgical oncology research.

NUMBER OF SURGICAL ONCOLOGY PAPERS AND PROPORTION WHICH FOCUSES ON CLINICAL TRIALS, 1997-2008

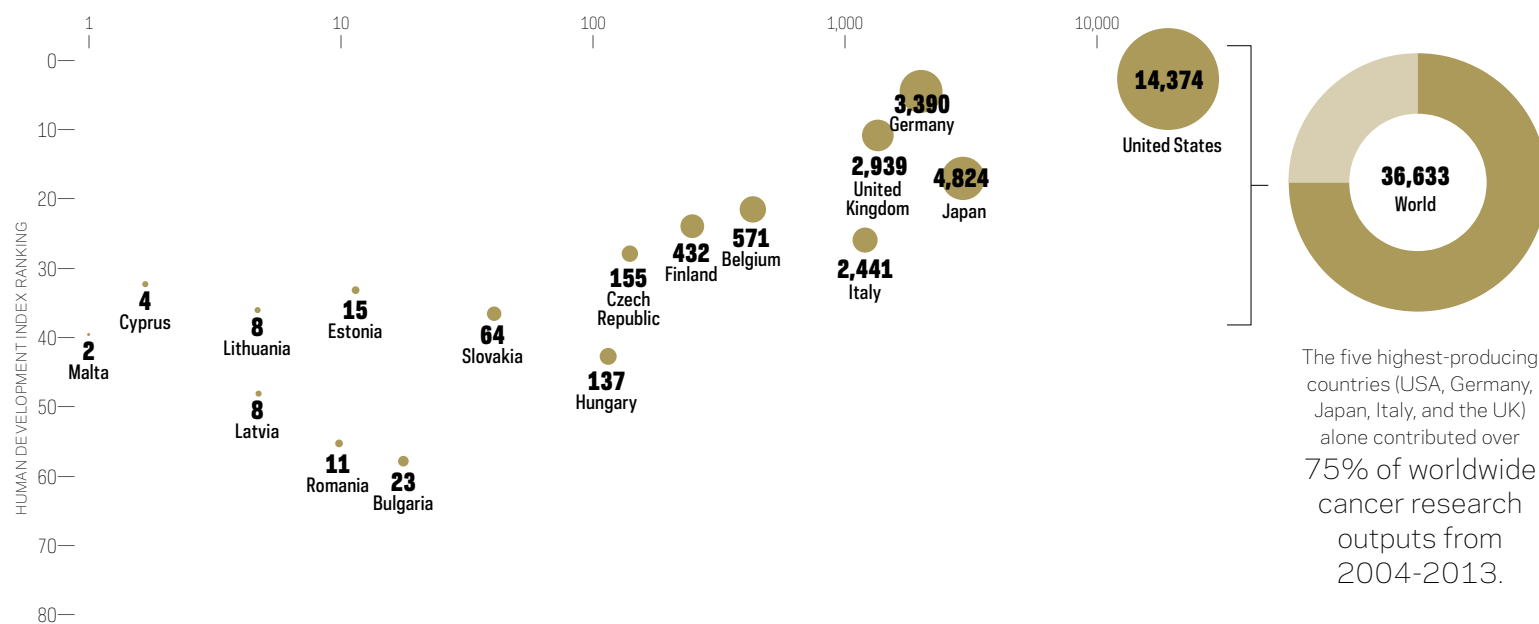


Surgery is the most important modality for cancer treatment, particularly in low- and middle-income countries where other types of treatment are scarce. Of total global cancer research, only 9% is on surgical oncology, despite the substantial role of surgery in cancer treatment.

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Cancer research papers are dominated by the highest Human Development Index countries

CANCER RESEARCH PAPERS IN 2004-2013 BY COUNTRY AND HUMAN DEVELOPMENT INDEX RANKING



The five highest-producing countries (USA, Germany, Japan, Italy, and the UK) alone contributed over 75% of worldwide cancer research outputs from 2004-2013.



India has now developed a partnership of 52 cancer centers (National Cancer Grid) dedicated to driving care quality and research across all states.

“In the temple of science are many mansions, and various indeed are they that dwell therein.”
— Albert Einstein

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Although cancer research continues to occur predominantly in high-income countries, many countries in the Middle East and North Africa have begun to substantially engage in the cancer research agenda.

NUMBER OF CANCER RESEARCH PAPERS AND PERCENTAGE OF INTERNATIONAL COLLABORATIONS IN THE MIDDLE EAST OVER THE LAST TEN YEARS

