

# SWOG clinical trials added more than 3 million years of life for cancer patients

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That is the conclusion of an analysis, led by a faculty member at Fred Hutchinson Cancer Research Center, of outcomes data from 193 randomized Phase III [clinical trials](#) tested by SWOG. The findings are published in today's issue of *JAMA Oncology* and will be presented and discussed by the lead author, Dr. Joseph Unger, today, at 4:45 p.m. CT at the annual meeting of the American Society of Clinical Oncology in Chicago.

Sponsored by the NCI, SWOG is a network of cancer researchers from centers and hospitals around the United States and in six other countries. First organized in 1956, it allowed clinical [trials](#) to tap into diverse sets of expertise and enroll more patients by involving multiple institutions. SWOG today is one of five remaining nationwide networks set up to carry out NCI-sponsored cancer prevention and treatment trials. (SWOG originally stood for Southwest Oncology Group, but now is officially known by just the acronym.)

Taxpayers have invested an estimated \$418 million in SWOG treatment trials of all sizes since they began. Researchers at Seattle's Fred Hutch, which has been the home of SWOG's Statistics and Data Management Center since 1984, decided to take an in-depth look at the return on that investment, and the results surprised them.

Looking only at the largest and most sophisticated type of SWOG studies completed through 2015, the researchers analyzed 193 randomized Phase III clinical trials—trials specifically designed to prove that a new treatment works better than existing therapies. Of this group, 23 showed that the new, experimental therapy improved overall survival

for trial patients, providing strong enough evidence to change how cancer is treated.

Yet this core of 23 successful clinical trials has produced a steady rise in survival for patients. According to Unger, a biostatistician and health services researcher in the Public Health Sciences Division at Fred Hutch and principal investigator of the study, cancer patients in the U.S. have gained a cumulative 3.34 million years of life, compared with what their survival would have been without these treatments. By dividing those years of life saved by the estimated cost of all SWOG studies since 1956, Unger and his colleagues calculated that it took an NCI investment of only \$125 for each year of life saved.

"Joe Biden's Cancer Moonshot initiative and SWOG's 60-year anniversary motivated us to view this organization's structure from the 30,000-foot level and to assess what its impact has been," said Unger. "And we found it has had a huge impact on the lives of people with cancer, for a very reasonable investment cost on the part of federal funding agencies."

According to [an analysis by the NCI](#), cancer is the leading cause of years of lives lost in the nation. In a study that ranked all other major causes of death in the country, cancers were responsible for 9.2 million "person-years of lives lost" in 2013, compared to 7.3 million for heart disease and 3.8 million for accidents.

The researchers display the impact of these gains in a chart that depicts a progressive buildup of colored layers representing years of life saved due to each of the 23 therapies. Of those treatments tested in SWOG trials, all but one are still in use today, Unger said.

Significantly, 84 percent of those years of life saved have accrued since 1990, a reflection of the accelerating pace of improvement in cancer

research. While the focus of the study is on the gains already achieved, the researchers also projected the lifesaving trends forward and calculated that the impact of the same SWOG trials alone would grow to 4.32 million by 2020; to 5.38 million by 2025; and will have nearly doubled to 6.29 million by 2030.

Unger acknowledged that the study requires numerous assumptions, some conservative, some less so. For example, the study's central findings are based on the assumption that practice changes were adopted by the oncology community upon publication of the SWOG findings. Calculations also provided in the study show lower improvements in life years gained for [cancer patients](#) if the new therapies were adopted later. If, for example, all treatments took three years after publication to be adopted, the years of life saved drops to 2.9 million from 3.34 million.

"The assumptions you make are pretty important," Unger said. "I tried to be conservative in our modeling assumptions, so as not to overstate the impact." For example, because no records of the investment in SWOG trials exist prior to 1985, the researchers used a backward projection of 1980s study costs to the beginning of the SWOG trials, even though the budget for SWOG's treatment trial program in those early years was almost certainly much less.

"This study just considers the investment dollar cost of conducting these trials," Unger said. "Even if my estimate was off by an order of magnitude—and the investment per year of life gained was \$1,250—that would still be a very small investment."

The NCI provided support for the research reported in this study, although the content of it is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Unger is a member of SWOG Statistics and Data Management Center and has been involved in data analysis of those trials

for more than 20 years.

The 23 positive trials enrolled 12,361 patients. The years of life gained were calculated through a complex formula that included clinical trial data, corresponding survival data from the national SEER 9 cancer registry, and [life](#) table data.

Unger said the study results provide strong evidence that SWOG and its four sister networks deliver a strong return on the investment required for them to carry out their studies. "If Congress is looking for a cost-effective approach to the design and conduct of studies for new [cancer](#) therapies, I can't think of a better model than the cooperative group system," he said.

**More information:**

[abstracts.asco.org/199/AbstView\\_199\\_182040.html](https://abstracts.asco.org/199/AbstView_199_182040.html)

Provided by Fred Hutchinson Cancer Research Center

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