

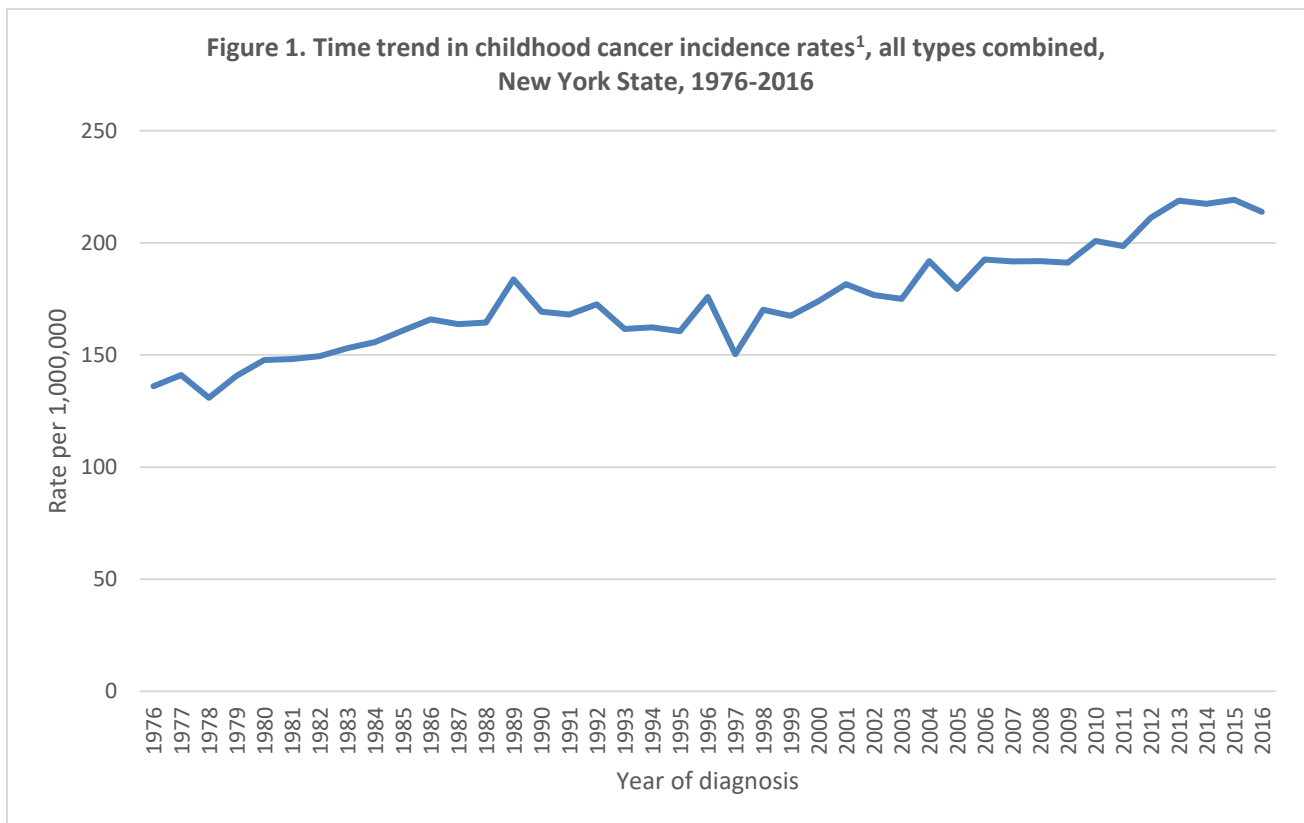
Is childhood cancer increasing?

Rates of newly diagnosed cases of cancer in children are increasing slowly. Rates of children dying from cancer, however, have declined sharply.

There are different ways to measure cancer in a community. Because places with more people would be expected to have more people with cancer, researchers calculate cancer rates. Cancer rates show how many people in a place would develop or die from cancer if the place had a set number of people (usually 1 million for childhood cancers), and estimate a person's risk of developing or dying from cancer. The cancer **incidence** rate is the number of people living in a community who were **newly diagnosed** with cancer divided by the total number of people living there. The cancer **mortality** rate is the number of people in a community who **died** from cancer divided by the total number of people living there.

Newly diagnosed cases (incidence)

The chart below shows the trend in incidence rates for childhood cancers (all types combined) in New York State between 1976 and 2016.



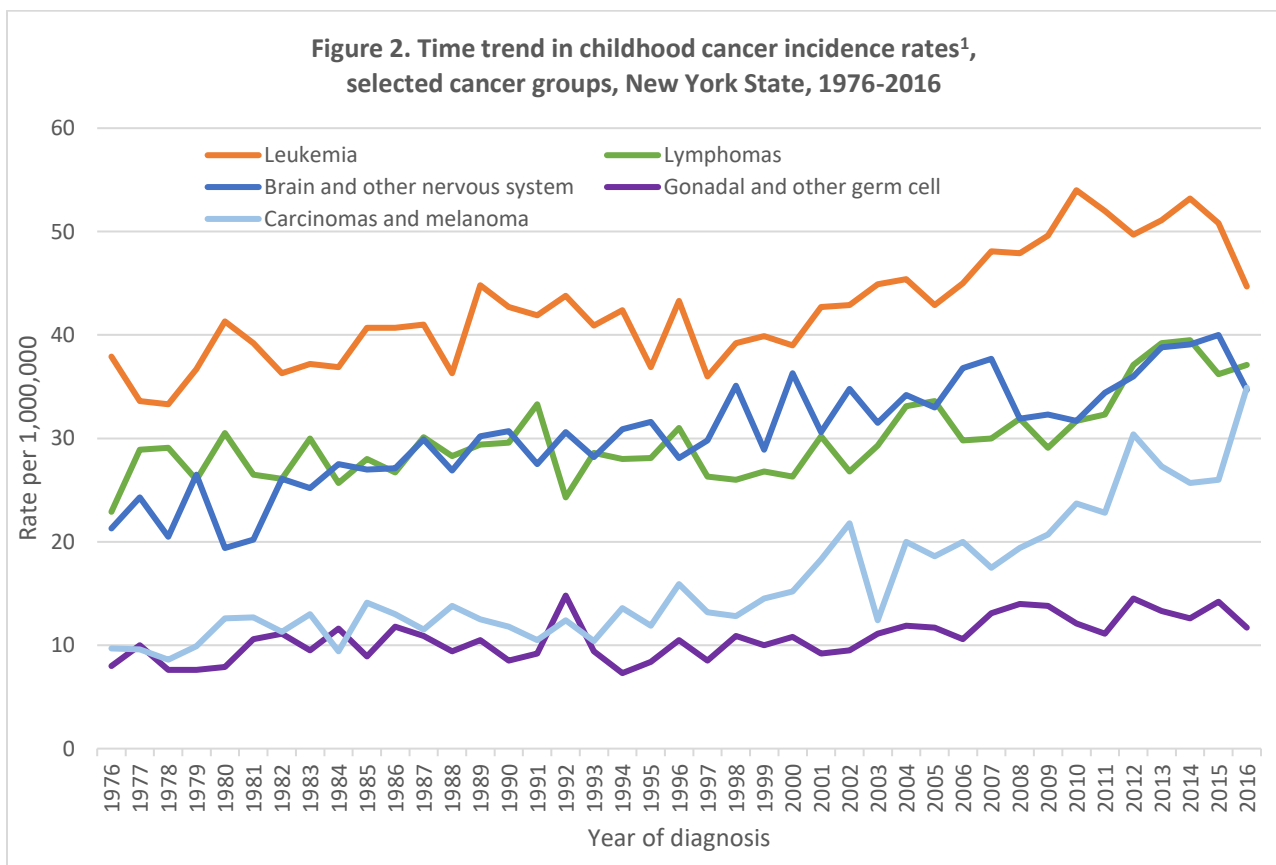
Children ages 0-19 years. Source of data: New York State Cancer Registry. Data provisional, November 2018.

¹Rates age-adjusted to the 2000 US population standard.

- Childhood cancer incidence rates showed a steady increase over this time period. This increase amounted to an average of 1 percent per year, or almost 60 percent increase over 41 years.

Cancer is not a single disease, but a collection of many different diseases. Each different type of cancer has its own pattern of occurrence, outlook, effective treatments, and risk factors. Changes in rates for all types of childhood cancer combined reflect changes in the rates for the different individual types.

Newly diagnosed cancers in children are usually grouped by the type of cell that turns cancerous, rather than the organ or location in the body where the tumor starts. The chart below shows incidence rates over time for the three most frequently diagnosed groups of childhood cancers: leukemia, lymphomas (including Hodgkin lymphoma and the non-Hodgkin lymphomas) and brain and central nervous system cancers. Rates for two other groups of cancers that account for a large number of cases and are changing the most rapidly are also shown. These are the carcinomas, which include thyroid cancer and melanoma of the skin, and gonadal cancers, which include cancers of the ovaries and testes.



Children ages 0-19 years. Source of data: New York State Cancer Registry. Data provisional, November 2018.

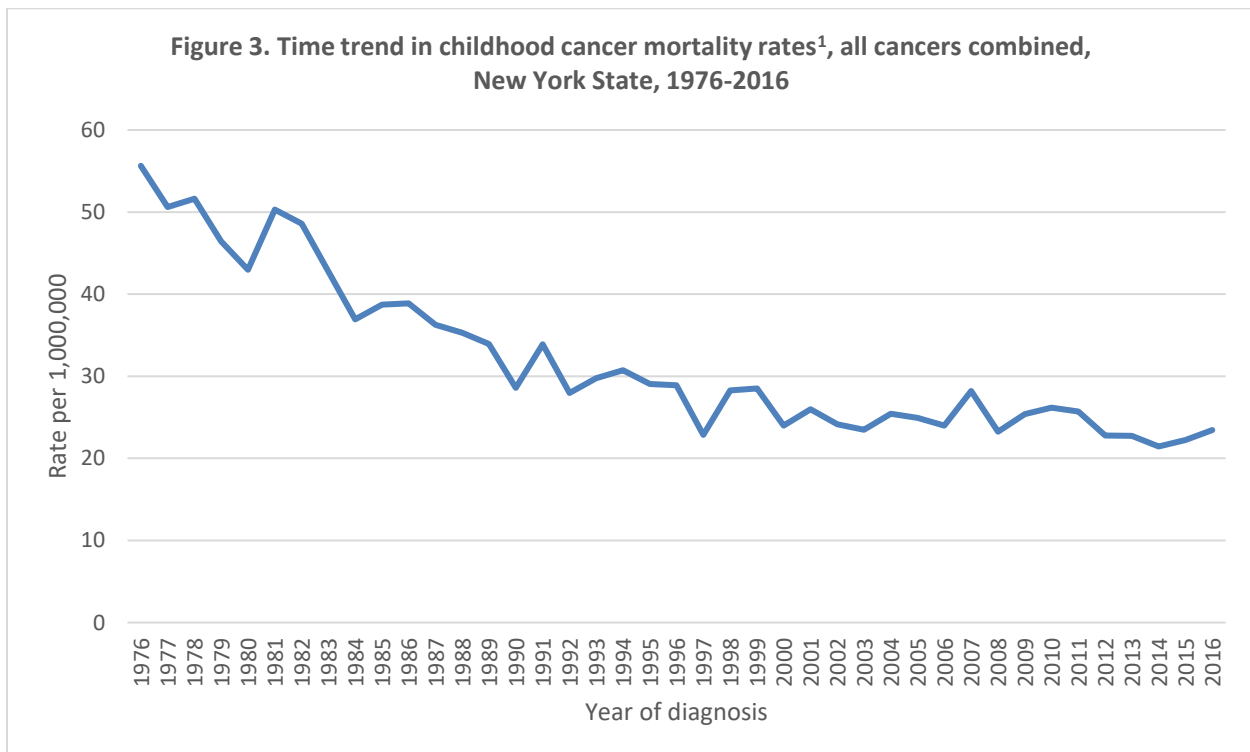
¹Rates age-adjusted to the 2000 US population standard.

- Incidence rates for these five types of childhood cancer increased over the 41-year period.
- The increase in leukemia rates took place mainly after 2000.
- Rates of brain and central nervous system cancers increased until the mid-1980s, stabilized, and then began to increase again in the late 1990s.

- Carcinomas and melanoma include thyroid cancer, which has been increasing since the early 1990s in both older children and adults.
- Gonadal and other germ cell cancers include cancer of the testis, which is increasing in young adult men as well as male adolescents.
- Rates of some less common childhood cancers, including liver tumors, soft-tissue sarcomas, neuroblastoma, and retinoblastoma (not shown), increased more slowly during this time.
- Rates of bone and kidney cancers did not change.
- Rates for the group other and unspecified cancers declined. This could be due to more thorough diagnosis or better reporting.
- Aside from a few instances where increases are believed to be due to the greater detection of existing tumors (brain and central nervous system tumors in the early to mid-1980s and thyroid cancers since the early 1990s), reasons for the increasing incidence of childhood cancers are unclear.

Deaths from cancer (mortality)

Despite increases in the incidence rates of childhood cancers, deaths from childhood cancers have declined. The chart below shows the mortality rate for childhood cancer in New York State from 1976 through 2016.



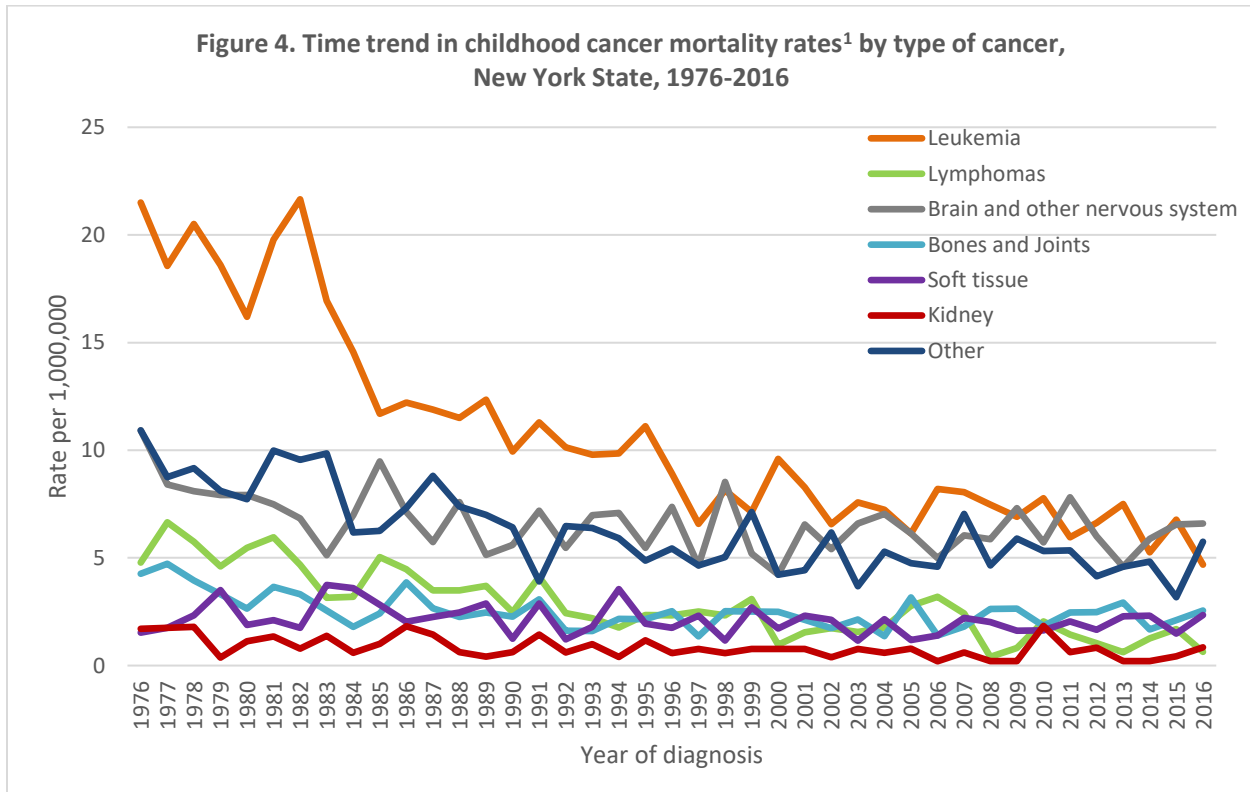
Children ages 0-19 years. Source of data: New York State Cancer Registry. Data provisional, November 2018.

¹Rates age-adjusted to the 2000 US population standard.

- The rate of children dying from cancer declined by an average of over 2 percent a year during this time period, so that by 2016 it was less than half of what it was in 1976.

As with incidence, changes in the rates of total deaths from childhood cancers reflect changes in deaths from different types of cancer. When tabulating cancer deaths, cancers in children are grouped by the organ or location in the body where the cancer starts. In this grouping, the category “Other” includes cancers of the gonads, carcinomas such as thyroid cancer and malignant melanoma, and rarer cancers of early childhood including neuroblastoma, retinoblastoma and liver tumors.

The chart below displays changes in rates of all groups of childhood cancer deaths by year between 1976 and 2016.



Children ages 0-19 years. Source of data: New York State Cancer Registry. Data provisional, November 2018.

¹Rates age-adjusted to the 2000 US population standard.

- Death rates from all types of childhood cancer decreased over this 41-year period.
- Much of the decrease in total childhood cancer mortality is due to the marked decline in deaths from leukemia, which accounts for the largest number of cases and deaths in children. This decline was particularly rapid between the mid-1970s and mid-1980s.
- The decrease in childhood cancer death rates is believed to be due to advances in cancer treatment.

Rates of newly diagnosed cases of most types of childhood cancers have increased. The cancer types that have increased include those that are diagnosed most frequently in children and some that are also increasing in adults. Death rates declined for all types of childhood cancer. The decrease was greatest for childhood leukemia. The decline in childhood cancer death rates is believed to be due to advances in treatment.