In 2010, the Pediatric Cancer Genome Project is launched as an unprecedented effort by St. Jude and Washington University in St. Louis to identify the genomic changes that give rise to some of the world’s toughest childhood cancers.

In 2015, a landmark study from the Pediatric Cancer Genome Project is published in the New England Journal of Medicine.

1,120 children with cancer had their DNA sequenced.

595 Whole Genome Sequencing
69 Whole Exome Sequencing
456 Exome Sequencing

Types of Cancer:
- Leukemia: 52.5%
- Other Cancers: 25.6%
- Brain Tumors: 21.9%

FINDINGS:
- > 8.5% of patients carry a mutation in a gene that likely increases their cancer risk.
- 40% had a positive family history of cancer.
- 60% had no recorded family history of cancer.

CONCLUSION:
“Family history should not be used as the sole indication to guide the provision of genetic testing.”

Next Steps:
- St. Jude launched Genomes for Kids, a clinical research study looking at using genomic sequencing to understand the similarities and differences between tumor cells and healthy cells in children.
- Researchers hope to learn:
  - More about childhood tumors
  - How genomic sequencing might help predict tumor response to treatment
  - Best ways to share genomic sequencing results with families

The clinic team includes:
- Doctors
- Genetic Counselors
- Psychologists
- Social Workers
- Nurses

Sources:

The paper completes the most comprehensive analysis yet of the role genes associated with cancer predisposition play in childhood cancer.