



Dr. Audrey Evans: The "Mother of Neuroblastoma" on how far we've come

Dr. Audrey Evans has treated hundreds of neuroblastoma patients during her illustrious career as a world-renowned pediatric oncologist and neuroblastoma researcher at Children's Hospital Philadelphia. But for the woman who has been called the "Mother of Neuroblastoma," there is no greater evidence of progress than the kind that walks up to you and gives you a hug.

Dr. Evans recently attended a going away party for a U.S. naval commander she treated for neuroblastoma some 30 years ago at the age of 4. The female officer was shipping out to Kuwait for a year.

"It's pretty nice to see somebody who you knew 30 years ago and who is living from the help you gave her," said Dr. Evans, 86, who worked every day up until she retired from private practice in March 2009, that is, if you can call it 'retirement.'

Today, Dr. Evans does philanthropic work in Philadelphia, focusing her efforts on opening a Christian school in an impoverished North Philadelphia community. She still attends major neuroblastoma research conferences around the world, advises families dealing with the long-term effects of aggressive chemotherapy and radiation treatments, and stays on top of the latest research and treatment options. There isn't any one reason why Dr. Evans could have earned the moniker "Mother of Neuroblastoma." Perhaps it is because she was integral in starting an oncology department and research program at Children's Hospital Philadelphia. Or, maybe it was because she developed the Evans Staging System to determine how each child's cancer will progress, helping doctors to design appropriate treatment based on the stage and enabling many patients to avoid chemotherapy. Maybe it is because she was among the first pediatric cancer specialists to effectively use chemotherapy and radiation treatments to cure neuroblastomas. Or it could have been because it is so obvious that she cares so much. One news story described her as not simply wanting to care for children with the disease, but wanting to find out how it works. An Internet search revealed dozens of photographs of Dr. Evans treating her young charges, smiling at them as warmly as a ray of sunlight.

In the waning days of her professional practice, Dr. Evans describes herself as a "therapist of mice," testing the effects of new chemotherapy treatments on lab animals. "One of the ones I worked on has just been published now and is in trials and used in protocols," she said. "So, that's exciting." The unfortunate side effects that can be caused by neuroblastoma treatments continue to pull at her heart strings. Dr. Evans said she has been working with a family desperately trying to get pregnant but unable to due to damage caused by radiation treatments on the cancer survivor's uterus. "She was a patient who is now affected as an adult. One of the things you can say about progress is the refinement of the treatment. We know so much more about neuroblastoma. We know how much we need to give

and what we need to give for a particular tumor stage. And we're always looking at giving more to the bad and less to the good."

Dr. Evans has witnessed a dramatic increase in survival rates for neuroblastoma and said she admires the work of countless doctors and researchers who continue to make medical advances to cure more children of the disease.

"There are major strides both in the understanding of the disease and the ways to treat them with the reduced side effects of treatment," she said. "We cure neuroblastoma all the time. There is such a range. There has been tremendous progress in fighting the disease."

She also lauded the work of parents' organizations such as the CNCF and the impact they have had on research efforts.

"Parents' groups like the Children's Neuroblastoma Cancer Foundation have been and are extremely important in the advances made against childhood cancer," she said. "There is their significant financial support, of course, but they do more than that. They bring into focus for the clinicians why they are struggling to develop a new protocol, and for the laboratory investigator why he or she is writing another grant application. Parents groups bring back into view from just over the horizon the sick children and concerned parents for whom the battles are being fought. In that way, they not only sharpen the focus of the professionals, but also provide a poignant spur to their research endeavors." Dr. Evans trained at Dana Farber Cancer Institute in Boston, where she met the man who would become her husband many, many years later, Dr. Guilio J. D'Angio, who is also a renowned pediatric cancer researcher and professor of radiology. Dr. Evans and Dr. D'Angio were part of the first cooperative study of Wilms Tumor, a cancer of the kidneys that usually effects newborns. "He was the radiation (therapist) and I was the chemotherapist," she said.

She also studied in Baltimore and in Chicago, where she headed up the pediatric cancer department at the University of Chicago from 1967 to 1973.

Today, neuroblastoma has a better than 85 percent survival rate in early stage patients and dramatically improved odds of remission for patients with advanced stage or the more aggressive form of the disease, she said. Dr. Evans said she is excited about the success of stem cell transplant therapies and recent evidence supporting the effectiveness of antibody therapy.

"We do cure neuroblastoma like mad," she said. "There are different types of neuroblastoma -- more aggressive and less aggressive forms. It depends in part on how widespread the disease is on diagnosis. You can't do the survival rate for neuroblastoma as a whole because there's such a range."

She pointed to recently published articles on the addition of an antibody that has increased the survival rates by 12 percent. "That's limited to cooperative studies but you can go to a hospital that does those studies. Children's Hospital Philadelphia is getting a lot of children from Great Britain for that treatment."

Some of the families who travel long distances for treatment stay at one of the 350 Ronald McDonald Houses around the world. Dr. Evans was one of the founders of the original Ronald McDonald House in Philadelphia in 1974, and was instrumental in construction of a second house there three years ago.

"The success of the McDonald house program is mainly due to the McDonald's Corporation's incredible PR," she said. "They have done so much in supporting it and in talking about it. Everybody in the world knows what Ronald McDonald House is."

Dr. Evans said one of the things she misses most about going into work every day is her secretary. But she is grateful to have her husband, who she married at the age of 80 after working together with him for some 40 years.

"I've had a great life," she said. "I certainly have."

Links to antibody and chemotherapy treatment articles:

Anti-GD2 antibody with GM-CSF, Interleukin-2 and Isotretinoin for Neuroblastoma

<http://www.ncbi.nlm.nih.gov/pubmed/20879881>

Outcome after Reduced Chemotherapy for Intermediate-Risk Neuroblastoma

<http://www.ncbi.nlm.nih.gov/pubmed/20879880>

Did you know Neuroblastoma has been known to regress on its own in infants? It's rare, but Dr. Audrey Evans said she has seen cases. "It lacks the gene to make an aggressive neuroblastoma." Most regression patients are under 6 months of age.