Cardiac Transplantation was a small subspecialty in 1984 with just over 1300 adult patients reported in the ISHLT annual report that year and a 6-year survival of only 41%. Pediatric heart transplantation, particularly in young children, really began in earnest that year. Presently heart transplantation in the United States in infants and children is accepted therapy with children representing about 12% of the total transplants performed worldwide each year. Survival for > 20 years has been achieved. The results of the nearly 500 pediatric heart transplant procedures at Columbia University will be discussed as well as the lessons learned and improvements to not only survival but quality of life for these children. There have been significant advances in increasing the access to transplant for children and young adults with complex congenital heart disease with issues from palliative repairs that result in high-risk transplantation. Transplantation when there is high pulmonary vascular resistance, orthotopic heart transplant to effective single lung physiology to avoid heart /lung transplantation, and transplantation for the extremely sensitized patient are three examples.

Despite improvements in immunosuppression over the last 30 years, the major obstacle limiting long-term survival remains graft vasculopathy. Risk factors and newer treatment modalities as well as research on etiology will be discussed. Ultimately retransplantation may be the only recourse for these patients and currently this represents about 5%-8% of the total number of transplants yearly in pediatrics in the United States. The consequences of long-term immunosuppression in children have improved with the advent of newer immunosuppressive drugs over the years. However, this treatment burden still results in an increased incidence of lymphomas over the adult population and chronic renal dysfunction as well. Treatment strategies to avoid these complications will also be discussed.