CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Advisory Committee on Childhood Cancer

Committee Annual Report

February 21, 2024

Presented By:

Richard Gorlick, M.D.

Chair, ACCC

Division Head and Department Chair, Pediatrics, The University of Texas MD Anderson Cancer Center Children's Cancer Hospital

H. Grant Taylor, M.D., W.W. Sutow, M.D., and Margaret P. Sullivan, M.D. Distinguished Chair in Pediatrics

Department Chair *ad interim*, Sarcoma Medical Oncology, Division of Cancer Medicine

Donald (Will) Parsons, M.D., Ph.D.,

Vice-Chair, ACCC

Professor, Pediatrics – Baylor College of Medicine

Deputy Director, Texas Children's Cancer and Hematology Center

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center Children's Cancer Hospital®

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Presentation Outline

- **Childhood Cancer in Texas, the US: a review**
- **Summary of CPRIT Pediatric Achievements**
- **ACCC Ongoing Steps**
  - Membership/Researchers Roundup
- **ACCC Strategy**
  - Ongoing goals
  - Vision for future
- **Summary/Next Steps**

Statement of the problem: Childhood Cancer

Childhood Cancer: A Texas-sized problem?

- Texas has the **second highest cancer population** in the United States
- **Cancer is still the leading cause of disease-related death in Texas** past infancy among children* and adolescents**
- In Texas, the age-adjusted incidence rate for children*** hovers around 16.5 cases per 100,000 population
  - within the national average
- **In Texas, over 1,800 children under age 20** are diagnosed with cancer+
- Each year, ~ **7,800 Adolescents and Young Adult (AYA) are diagnosed with cancer in Texas**

*birth to 14 years ** 15-19 years old *** birth to 19 years

+Calculated as Texans diagnosed with childhood and adolescent cancer between 1995–2019 who were alive as of January 1, 2020).

An Investment in Our Future…

- The number of children in Texas is projected to **increase to over 8.5 million by 2060**
  - Investing in childhood cancer research and prevention is an investment in our future
- According to the U.S. Census Bureau, **Texas is the second youngest state in the nation** (35 = median age)
- The population of Texas children under age six is greater than OK, LA, FL and NM **combined**
  - Approximately 1 in 10 American children under age six live in TX

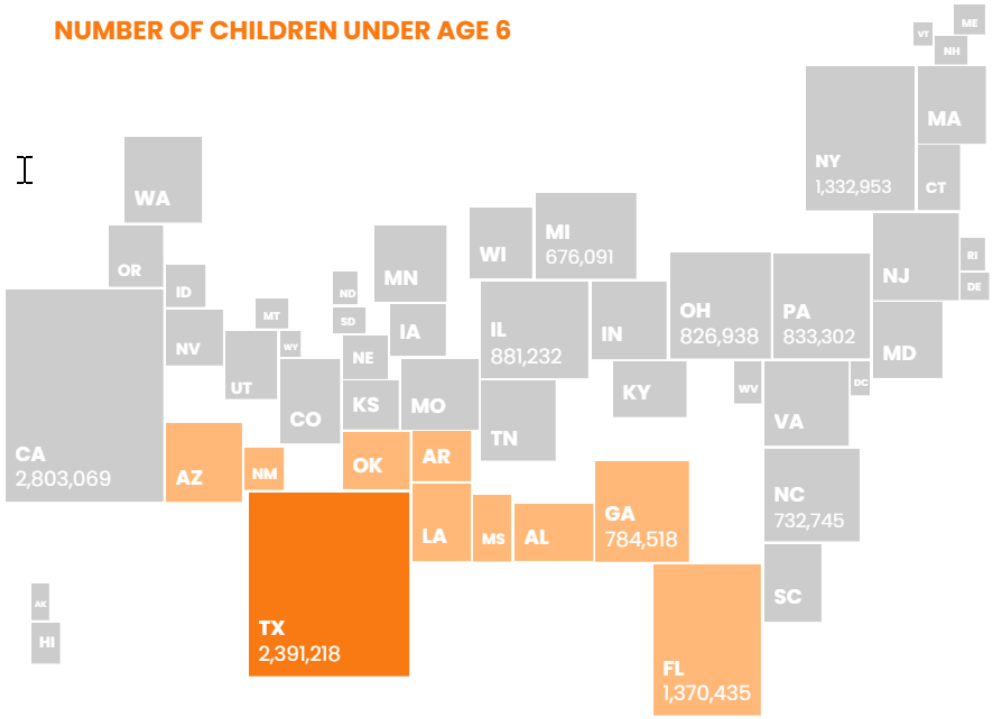


Image retrieved from TexasReadyKids website (2024)

Adolescent & Young Adult Cancer (AYA)

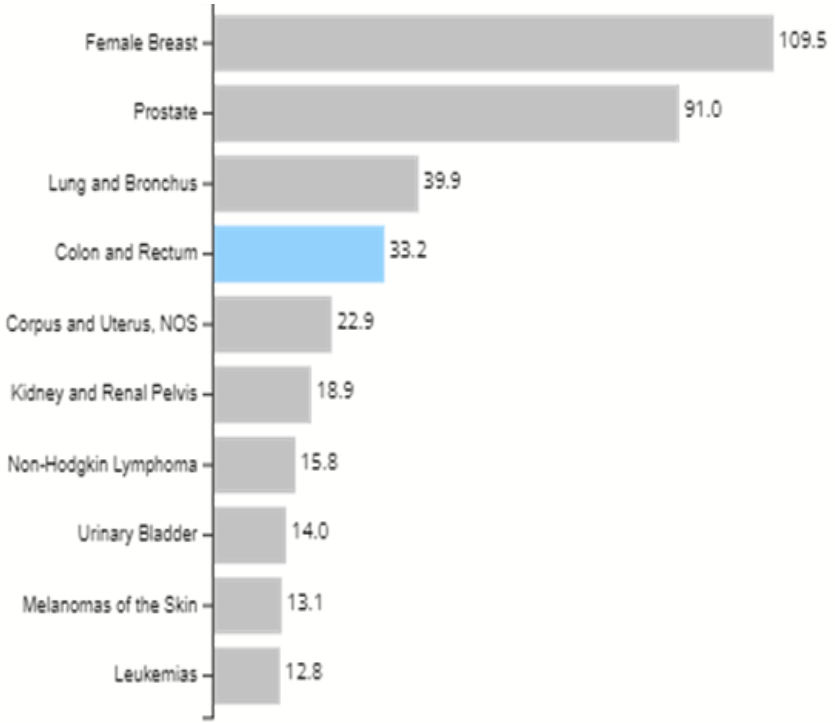
- The National Cancer Institute defines the AYA age range as 15-39

- The five-year overall survival for AYA is 85.8%, limited improvement in cure rates for many AYA diagnoses
  - **sarcoma**, CNS tumors, **early onset colorectal cancer,** breast cancer

- **Colorectal cancer (CRC) rates on the rise** for individuals under 50
  - In 2023: 19,550 cases and 3,750 deaths in individuals younger than 50 years of age

- There are few studies focused on AYA short and long-term survival and quality of life
  - 100,000+ childhood and AYA survivors live in Texas

Top 10 Cancers by Rates of New Cancer Cases
Texas, 2020*



*All Races, Ages, & Ethnicities, Male and Female

Cancer Among Adolescents and Young Adults (AYAs) — Cancer Stat Facts

The incidence of cancer in AYAs is increasing

The New York Times

Colon Cancer Is Rising Among Younger Adults. Here's What to Know.

With cases projected to continue climbing through 2023, scientists are racing to understand why.

THE WALL STREET JOURNAL.

Cancer Is Hitting More Young People

Baffled doctors are trying to determine what is behind the rise in early-onset cases

The ASCO Post

How the Cancer Moonshot Aims to Improve the Quality of Life for Adolescent and Young Adult Cancer Survivors

Medscape Tuesday, February 13, 2024

COMMENTARY

More Young Women Being Diagnosed With Breast Cancer Than Ever Before

JAMA Network

January 26, 2024

Breast Cancer Incidence Among US Women Aged 20 to 49 Years by Race, Stage, and Hormone Receptor Status

Shuai Xu, MPH[1]; Sara Murtagh, MD[2]; Yunan Han, MD[1]; et al

» Author Affiliations | Article Information

JAMA Netw Open. 2024;7(1):e2353331. doi:10.1001/jamanetworkopen.2023.53331

Summary of CPRIT Pediatric Accomplishments

CPRIT Funds Important Childhood Cancer Research: FY24

- New individual research projects tackling big problems

  - **Colon cancer progression-** Ming Hu, Ph.D., University of Houston
  - **AR-directed therapy for DSRCT**- Joseph Ludwig, M.D., UTMDACC
  - **Refractory and aggressive T-ALL-** Lauren Ehrlich, Ph.D., UT Austin
  - **Ewing sarcoma-** Katsumi Kitagawa, Dr.PH., Ph.D., UTHSC SA
  - **Survivorship** – Maria Gramatges, MD, Ph.D., Baylor College of Medicine
  - **Neuroblastoma oncogenesis-** Eveline Barbieri, M.D., Ph.D., Baylor College of Medicine

Core Facilities Support Awards create new resources

Provides financial support for a wide variety of projects relevant to cancer research in Texas, including for pediatric specific projects such as:

Title	PI	Institution	Award Year
The Adolescent and Childhood Cancer Epidemiology and Susceptibility Service (ACCESS) for Texas	Michael Scheurer, PhD, MPH	Baylor College of Medicine	2021
Center for Innovative Drug Discovery Enhancement of a Shared Cancer Resource for South Texas	Stanton McHardy, PhD	The University of Texas Health Science Center at San Antonio	2022
Patient-Derived Xenograft and Advanced In Vivo Models (PDX-AIM) Core Facility of Texas	Michael Lewis, PhD	Baylor College of Medicine	2022
West Texas Pharmacology Core	Min Kang, PharmD	Texas Tech University Health Sciences Center	2022
Advanced Protein Therapeutics Core	Jennifer Maynard, PhD	The University of Texas at Austin	2022
Texas Pediatric Cancer Testing (TPCT) Core	Peter J. Houghton, PhD	The University of Texas Health Science Center at San Antonio	2022

*CFSA were not offered in FY23; however, there was a 24.2 funding opportunity for this mechanism, which will be awarded August 2024.

Impact Data: CPRIT Childhood and Adolescent Awards

By CPRIT Program	# Awards	Total Follow on Funds	# Publications	# of Patents Filed	# of Clinical Trials	# of Patients Enrolled
Academic Research	182	$349,137,051	729	23	43	12,095
Prevention	47	$2,603,880	51	0	0	0
Product Development Research	7	$310,040,637	14	17	4	78
TOTAL	**236**	**$661,781,568**	**794**	**40**	**47**	**12,173**

Data Source: Annual Progress Reports as of 2/12/2024

Impact of CPRIT Funding Mechanisms

- **Impact**
  - Over 200 awards, $661M+ follow-on funds, 794 publications, 40 patents filed, 47 clinical trials with 12,000+ patients enrolled
  - **New, shareable childhood cancer models**
    - Texas Pediatric PDX facility (Houghton, UTHSCSA)
    - PDX-AIM (Lewis, BCM)
    - Cancer Animal Facility (Trasti, TTUHSC)
  - **New capacity for data storage and sharing**
    - Pediatric Cancer Data Core (Xie, UTSW)
    - Pediatric Solid Tumors Comprehensive Data Core (Gorlick, UTMDACC)
    - ACCESS for Texas (Scheurer, BCM)
- **Recommendations**
  - **Specific calls for proposals focused on childhood cancer**
    - Ensure impact extends beyond local institutions
    - Enlist ACCC to help prioritize Core Facilities
    - Invite competitive renewal of high-performing Cores that fill state-wide needs

CPRIT grants make a national impact

- *IIRA RP170510 renewed as RP220460*
  - Resulted in incorporation of assays for telomere maintenance mechanisms into current (ANBL1531) and future (ANBL2131) Children's Oncology Group (COG) national phase III clinical trials for neuroblastoma.

- *IIRA RP200432*
  - Developed assay to assess loss of binding of therapeutic antibody to identify cancer cell resistance to therapy with antibody used to treat neuroblastoma. Sending samples to Texas for that assay has been incorporated into the next COG national phase III neuroblastoma clinical trial (ANBL2131).

- *MIRA RP110763 and Core RP190524*
  - Partial support for COG repository for patient-derived cell lines and patient-derived xenografts of childhood cancer that are used by investigators across the USA and in 30 countries.

Big and Bright: Texas is Leading the Nation

- National Cancer Institute – Children's Oncology Group Pediatric MATCH trial
  - **Will Parsons,** M.D., Ph.D.- BCM/Texas Children's Hospital

- Pediatric Preclinical in Vivo Testing (PIVOT) program contributions
  - **Richard Gorlick**, M.D., UTMDACC: osteosarcoma
  - **Peter Houghton,** Ph.D. **/Raushan Kurmasheva,** Ph.D., UTHCSA:
    - Ewing Sarcoma, rhabdomyosarcoma, kidney and liver cancers

- Childhood Cancer Data Initiative contributions
  - **Maria Gramatges,** M.D., Ph.D. & **Will Parsons,** M.D., Ph.D. -Texas Children's Hospital; **Gail E. Tomlinson**, M.D., Ph.D. - UTSA

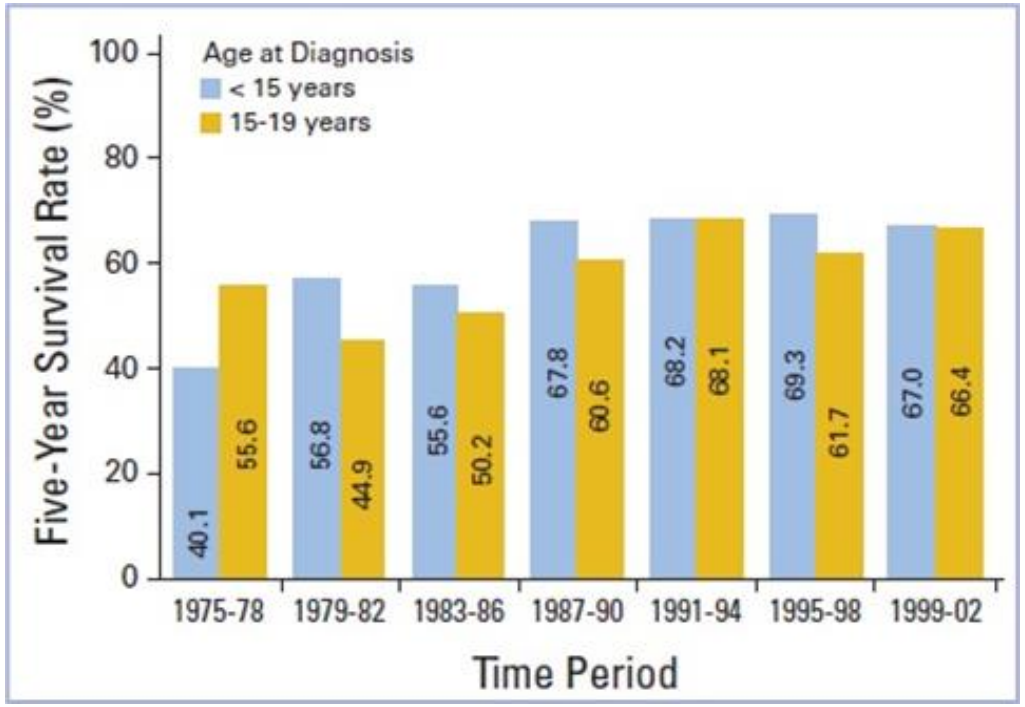
- Osteosarcoma Specimen Bank - **Richard Gorlick,** M.D., UTMDACC

- Adolescent and Young Adult Program:
  - UTMDACC leads the largest and most comprehensive program in the nation- **Michael Roth**, M.D

Progress remains to be needed, in many areas

- New, effective, non-cytotoxic drugs are still needed to make progress in Sarcoma
- The INT0133 and EURAMOS studies failed to change the standard of care in North America
  - Refers to additional trials of cytotoxic chemotherapy but also has implications for needed level of evidence
- No progress has been made in improving the survival of osteosarcoma in the past 30 years

Smith, et al. Outcomes for children and adolescents with cancer. J Clin Oncol 2010.



A reinstated opportunity, incredible potential. . .

- A Core Facilities Support Award Call for Applications did not occur in 2023
  - Planned to award again in 2024. The announcement included one for anything, one for pediatrics or population science

- **An RFA R-24.2-MIRA was reinstated**
  - Award: Up to $4.5 Million over a period of four years
  - This reinstatement allowed for two application from each institution
    - One for anything, one for pediatrics or population

  - Multiple applications were likely submitted in response
    - Results way too early to be released
      - Anticipated funding in August 2024

Advisory Committee on Childhood Cancer
Ongoing Steps

CPRIT ACCC Organization

We continue to add new members to expand our network!

Leadership
Richard Gorlick, M.D., Chair
Donald (Will) Parsons, M.D., Ph.D., Vice Chair

Members
Karen Albritton, M.D.; Carl E. Allen, M.D.; Mohamad Al-Rahawan, M.D., MPH; Greg Aune, M.D., Ph.D., FAAP; Juan Carlos Bernini, M.D.; Smita Bhaskaran, M.D.; Tim Culliver; Stan Goldman, M.D.; ; Barkat Hooda, M.D.; Eugenie Kleinerma, M.D.; Andrew Y Koh, M.D.; Annette Leslie; Julie Luke, CPNP; Phillip Neff, M.D.; C Patrick Reynolds, M.D., Ph.D.; Stephen X. Skapek, M.D.; Lisa Tichenor; Gail Tomlinson, M.D., Ph.D., **Atul Varadhachary, MD, PhD**

SC1: AYA
Karen Albritton (Leader), Michael Roth, Chibuzo O'Suoji (Members)

SC2: Brain Tumors
Donald Parsons (Leader), Daniel Bowers, Holly Lindsay (Members)

SC3: Cell Therapy
Andrew Koh (Leader), Kris Mahadeo, Robin Parihar, Samuel John, Matthew Campbell, Meena Hegde (Members)

SC4: Epidemiology
Philip Lupo (Leader), Paul Scheet, Sandi Pruitt, Michael Scheurer, Michael Roth (Members)

SC5: Frontiers
Smita Bhaskaran, Mohamad Al-Rahawan, Phil Neff (Co-Leaders), Lisa Thicenor, Shannon Cohn (Members), Richard Gorlick (Advisor)

SC6: Genetic Predisposition & Risk
Gail Tomlinson (Leader), Laura Klesse (Member)

SC7: Leukemia / Lymphoma
Carl Allen (Leader), Rachel Rau (Member)

SC8: Solid Tumors
Nino Rainusso (Leader), Jessica Naiditch, Dinesh Rakheja, Gabriel Axelrud, Lorimar Ramirez (Members)

SC9: Survivorship
Greg Aune (Leader), Barbara Jones, Monica Gramatges, Chibuzo O'Suoji, Michael Roth (Members)

Welcome, Dr. Atul Varadhachary!

- Dr. Varadhachary, M.D, Ph.D. is the Managing Partner at Fannin, and a physician with a PhD in Physiology from Johns Hopkins University
- Dr. Varadhachary brings thirty years of experience in life sciences and healthcare in both corporate and entrepreneurial settings
- Before Fannin, Dr. Varadhachary served as President of U.S. Operations at Reliance Life Sciences, President & COO at Agennix, Inc., and Senior Manager at McKinsey & Co.
- Dr. Varadhachary has served on the faculties of Baylor College of Medicine, Rice Graduate School of Management, the UT School of Public Health and on multiple company and community boards
- In terms of CPRIT Support, Fannin-affiliated companies have received five CPRIT grants:
  - **Allterum Therapeutics, Inc.** have received two product development grants (DP190025, DP230071) aimed at the pediatric population
  - **Pulmotect, Inc**. has received two product development grants (CP120014, DP230066), aimed at pediatric population
  - Acelerox received a High Impact/High Risk grant (RP160813)

Researchers Roundup 2022 – Opportunity to develop and refine strategy – Many thanks to the Carson Leslie Foundation and CPRIT for their engagement

Strategy for advancing childhood cancer care in Texas need to address the following issues

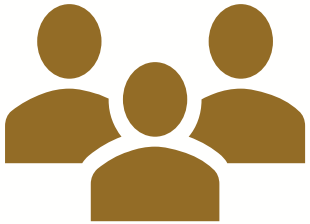
- Address gaps in pediatric drug development
- Continue to address variation in incidence rates and outcomes across Texas
  - They are not well understood with demographic details, environmental exposures not captured
- Address the needs of the AYA cancer patient population

Ongoing Steps

- Enhanced website for Core information dissemination
- Patient Derived Xenograft (PDX) sharing/homogenization
- Pre-clinical testing/product development integration
- Data harmonization and sharing
- RFAs should require use of Cores

We are considering a publication to share the results of the Researchers Roundup to share this strategy.

Support funding mechanisms which would accrue patients throughout Texas

						
Enhance drug development in the state of Texas	Study sub-groups	Continue to grow membership of advisory council to increase collaboration	Provide interventions	Expand reach via technology	Include underserved populations	Provide services not often available outside large academic centers

Advisory Committee on Childhood Cancer: Recommendations/Strategy

ACCC Recommendations to CPRIT

- Longer-Term opportunities:
  - Utilize the Cores along with a new RFP to:
    - Enhance collaboration across Texas with emphasis on drug development expertise
    - Facilitate data sharing across the state
    - Increase access to trials
    - Implement best manufacturing practices throughout Texas
  - Explore ways to enhance development of drugs focused on childhood cancers to bring the possibility of a cure closer to Texans
  - Propose a common infrastructure for pediatric cancer research in Texas

CPRIT & The Carson Leslie Foundation proudly present: Researchers RoundUp '24: **Nov. 10 – Nov. 12, 2024**

This event occurs bi-annually, alternating with CPRIT's "Innovations in Cancer Prevention and Research" Conference.

THANKS to the GENEROUS SUPPORT of our wranglers (aka sponsors)!

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Many thanks to CPRIT Leadership

- Incredible engagement in issues facing children with cancer
  - Michelle Le Beau
  - Wayne Roberts
  - David A. Cummings
  - Patty Moore
  - Myriam Casillas

Summary

- The ACCC wants to extend their appreciation to Texans for their strategic development of CPRIT
- CPRIT has allowed remarkable innovation and scientific breakthroughs to occur, benefitting children with cancer in Texas.
- Thank you for supporting the visionary leadership that continues to move the needle for childhood cancer research!
- Continued support of pediatric-focused proposals remains critical

Q&A

Richard Gorlick, M.D.
Chair, CPRIT Advisory Committee on Childhood Cancers

Will Parsons, M.D., Ph.D.
Vice Chair, CPRIT Advisory Committee on Childhood Cancers

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