

# Long Term Survivorship after Cancer Treatment

Waseem Alhushki, MD

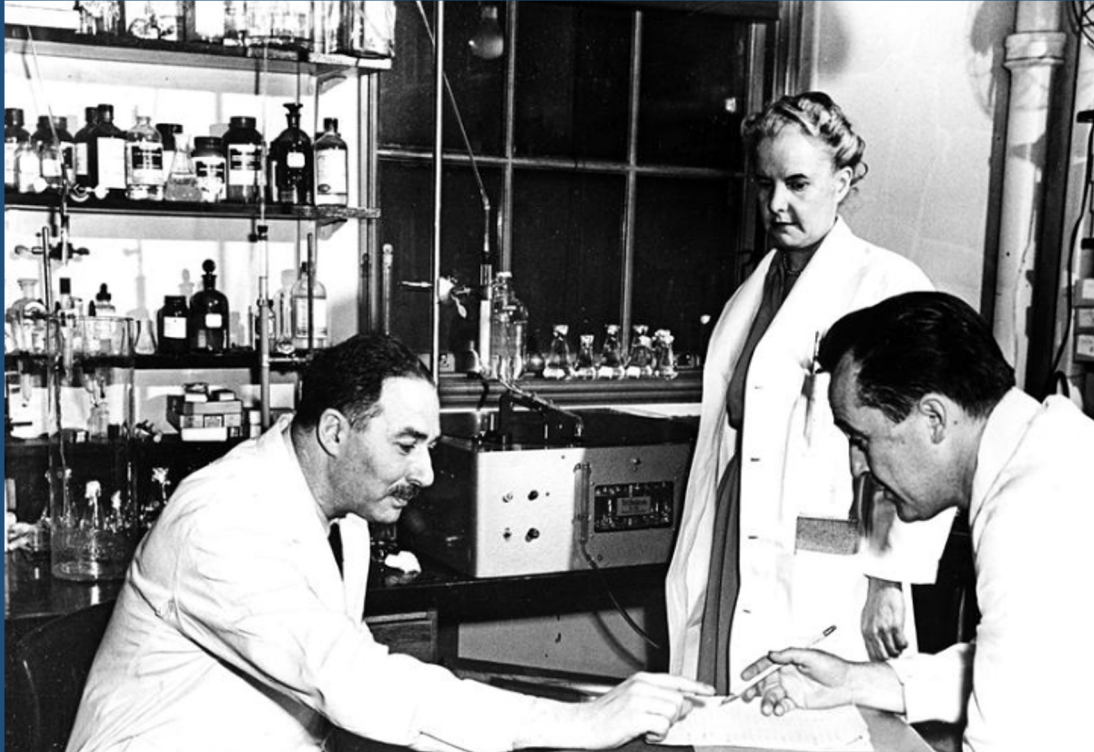
Long Term Follow-Up Lead Physician

Cure4thekids StoryBook Homes

# Goals

- To review the history and the current standard guidelines for cancer survivorship.
- To discuss Adolescent and Young Adults ( AYAs) cancer survivor's unique needs and concerns.
- To present Cure4thekids foundation survivorship experience “StoryBook Homes”.

# History of chemotherapy



## The New England Journal of Medicine

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Number 23

TEMPORARY REMISSIONS IN ACUTE LEUKEMIA IN CHILDREN PRODUCED BY  
FOLIC ACID ANTAGONIST, 4-AMINOPTEROYL-GLUTAMIC ACID (AMINOPTERIN)\*

SIDNEY FARBER, M.D.,† LOUIS K. DIAMOND, M.D.,‡ ROBERT D. MERCER, M.D.,§  
ROBERT F. SYLVESTER, JR., M.D.,¶ AND JAMES A. WOLFF, M.D.||

BOSTON

Sufficient encouragement was obtained from these observations to justify further studies on the effect of more powerful antagonists to folic acid on the course of acute leukemia in children. Since November, 1947, when a sufficiently pure substance became available, to the time of this writing (April 15, 1948) we have made studies on 16 children with acute leukemia to whom the most powerful folic acid antagonist we have yet encountered, 4-aminopteroyl-glutamic acid (aminopterin††) was administered by intramuscular injection. Many of these children were moribund at the onset of therapy. Of 16 infants and children with acute leukemia treated with aminopterin 10 showed clinical, hematologic and pathological evidences of improvement of important





# Mr. Nixon:

# You can cure cancer

If prayers are heard in Heaven, this prayer is heard the most:

"Dear God, please. Not cancer."  
Still, more than 318,000 Americans died of cancer last year.

This year, Mr. President, you have it in your power to begin to end this cancer.

As you agonize over the Budget, we beg you to reauthorize the agency of those 318,000 Americans. And their families.

We urge you to remember also that we spend more each day on military matters than each year on cancer research. And, last year, more than 21 times as much on space research as on cancer research.

We ask a bolder perspective, a bolder way to allocate our money to save hundreds of thou-

sands of lives each year. America can do this. There is not a doubt in the minds of our top cancer researchers that the final answer to cancer can be found.

Already, 4 out of about 20 types of cancer can be cured with drugs. And 27 other drugs will cause temporary remission in 17 other types of cancer.

Dr. Sidney Farber, Past President of the American Cancer Society, believes "We are so close to a cure for cancer. We lack only the will and the kind of money and comprehensive planning that went into putting a man on the moon."

Why don't we try to conquer cancer by America's 200th birthday?

What a holiday that would be! Cancer could be then, where smallpox, diphtheria and polio

are today—almost nonexistent.

If you believe, Mr. President, that will happen: One in six Americans now alive, 34,000,000 people, will die of cancer unless new cures are found.

One in four Americans now alive, 51,000,000 people, will have cancer in the future.

We simply cannot afford this.

Our nation has the money on one hand and the skills on the other. We must, under your leadership, put our hands together and get this thing done.

Surely, the war against cancer has the support of 100% of the people. It is a war in which we lost 21 times more lives last year than we lost in Viet Nam last year. A war we can win and not let it down to our children.

To the public, cancer patients, their friends and relatives:

Write or wire the President, urging him to put more funds behind cancer research. Or, please use this coupon.

Dear Mr. Nixon:  
Cancer research needs more funds. Please provide them in your 1971 budget. Please.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send this coupon to: The President,  
The White House,  
Washington, D.C.

**CITIZENS COMMITTEE FOR THE CONQUEST OF CANCER**  
688 United Nations Plaza, New York, N.Y. 10017; Robert Gurh, M.D., Executive Director, Co-chairman

Public Law 92-216

JOINT RESOLUTION

December 22, 1971 [S. J. Res. 184] Extending the dates for transmission of the Economic Report and the report of the Joint Economic Committee.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) notwithstanding the provisions of section 3 of the Act of February 20, 1946, as amended (16 U.S.C. 1022), the President shall transmit to the Congress not later than February 15, 1972, the Economic Report; and (b) notwithstanding the provisions of clause (3) of section 5(b) of the Act of February 20, 1946 (16 U.S.C. 1024(b)), the Joint Economic Committee shall file its report on the President's Economic Report with the House of Representatives and the Senate not later than March 10, 1972. Approved December 22, 1971.

Public Law 92-217

JOINT RESOLUTION

December 22, 1971 [S. J. Res. 186] To provide for the beginning of the second session of the Ninety-second Congress.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the second regular session of the Ninety-second Congress shall begin at noon on Tuesday, January 18, 1972. Approved December 22, 1971.

Public Law 92-218

AN ACT

December 23, 1971 [S. 1828] To amend the Public Health Service Act so as to strengthen the National Cancer Institute and the National Institutes of Health in order more effectively to carry out the national effort against cancer.

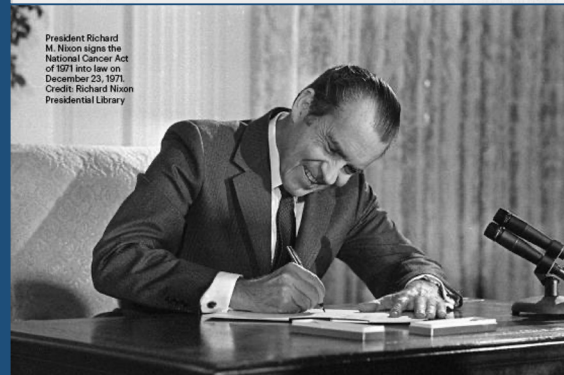
Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as "The National Cancer Act of 1971".

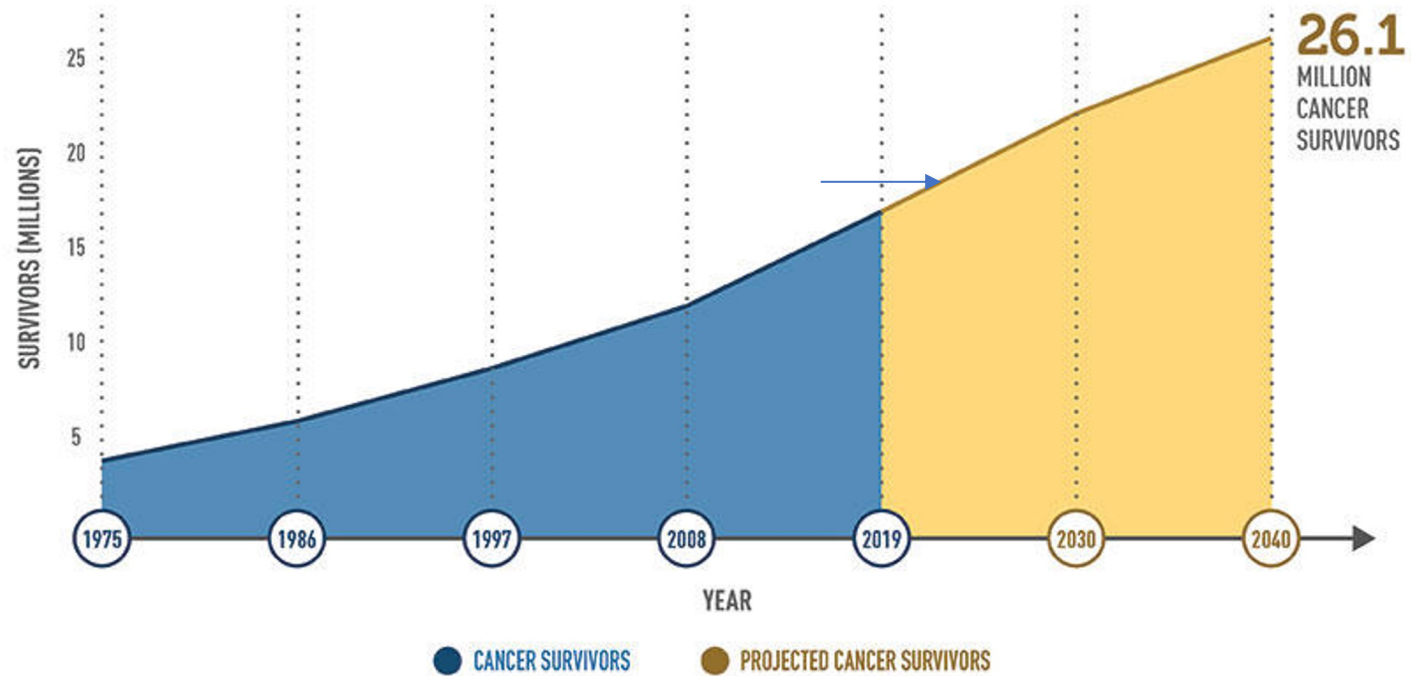
FINDINGS AND DECLARATION OF PURPOSE

SEC. 2. (a) The Congress finds and declares—  
(1) that the incidence of cancer is increasing and cancer is the disease which is the major health concern of Americans today;  
(2) that new scientific leads, if comprehensively and energetically pursued, offer the best hope for the control and ultimate prevention of cancer.



President Richard M. Nixon signs the National Cancer Act of 1971 into law on December 23, 1971. Credit: Richard Nixon Presidential Library

## NUMBER OF CANCER SURVIVORS IN THE UNITED STATES

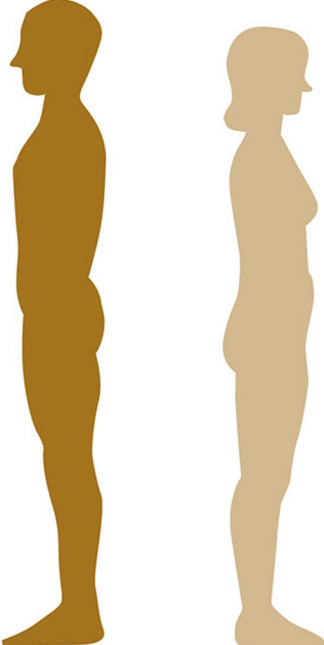


The number of cancer survivors in the United States is projected to grow to 26.1 million by 2040. NCI considers a person to be a cancer survivor from the time of diagnosis until the end of life.

Source: Institute of Medicine and National Research Council. 2006. *From Cancer Patient to Cancer Survivor: Lost in Transition*. The National Academies Press. doi: 10.17226/11468.

de Moor JS, et al. *Cancer Epidemiol Biomarkers Prev*. 2013 Mar. doi: 10.1158/1055-9965.EPI-12-1356.

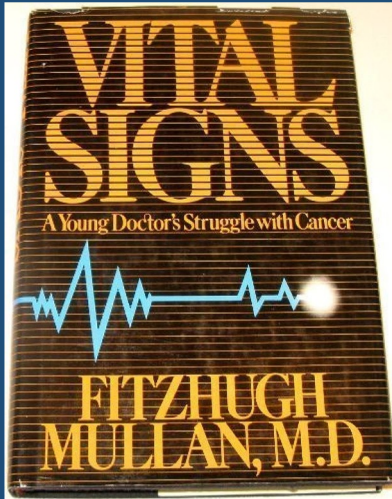
[cancer.gov](http://cancer.gov)

Male			Female	
Prostate	3,523,230		Breast	4,055,770
Melanoma of the skin	760,640		Uterine corpus	891,560
Colon & rectum	726,450		Thyroid	823,800
Urinary bladder	597,880		Melanoma of the skin	713,790
Non-Hodgkin lymphoma	451,370		Colon & rectum	710,670
Kidney & renal pelvis	376,280		Non-Hodgkin lymphoma	394,180
Oral cavity & pharynx	311,200		Lung & bronchus	367,570
Testis	303,040		Uterine cervix	300,240
Leukemia	300,250		Ovary	246,940
Lung & bronchus	287,050		Kidney & renal pelvis	230,960
<b>All sites</b>	<b>8,321,200</b>		<b>All sites</b>	<b>9,738,900</b>

# Survivorship



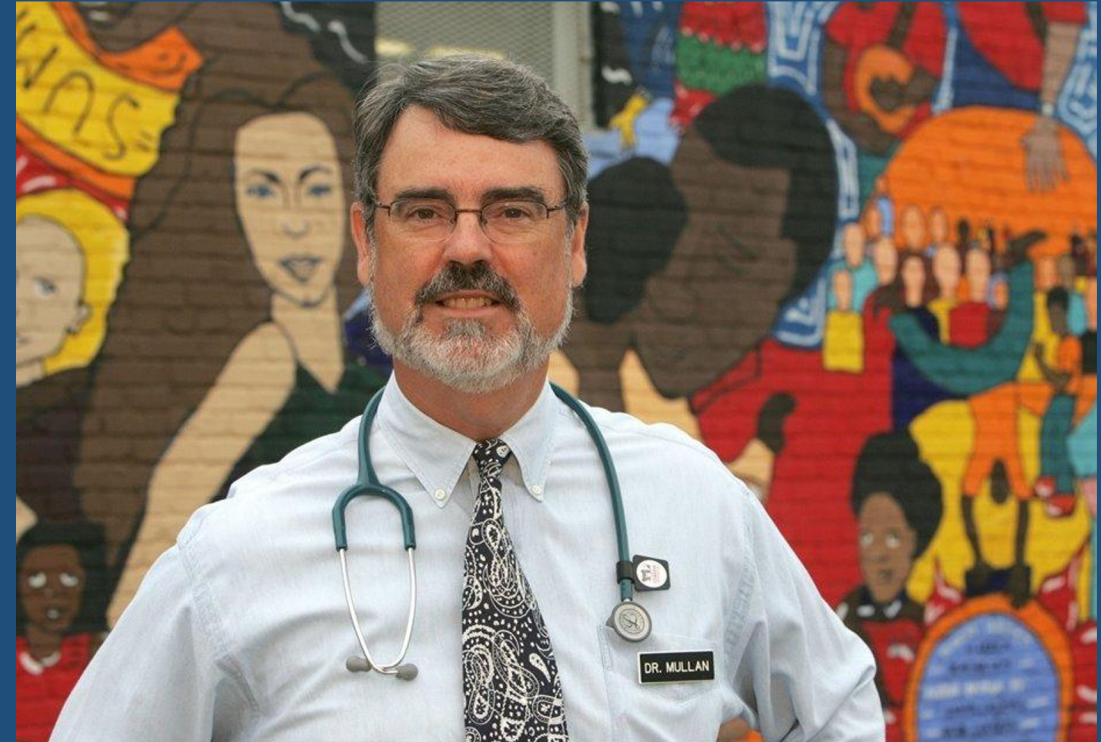
# Pioneers of the Survivorship Movement



## OCCASIONAL NOTES

### Seasons of Survival: Reflections of a Physician with Cancer

WHEN I was given a diagnosis of cancer, my first thought was not, Will I die? but rather, How can I beat this? Like a youngster who flunks a big test, I immediately began to worry about what to do to pass the course. I was 32 years old at the time, a physician, a husband, a parent, and a son. I had been healthy, athletic, and free of pain, but with the diagnosis, I became formally sick. My mind and my hopes riveted



*The New England Journal of Medicine*



## National Coalition for Cancer Survivorship (NCCS)

Co-founder of NCCS / First Executive Director

Catherine Logan Carillo



## Cancer Survivor

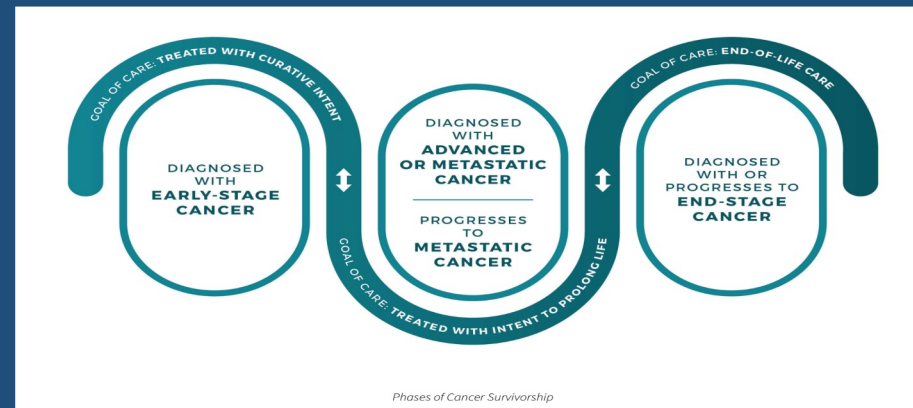
An individual is considered a cancer survivor from the time of diagnosis through the balance of life. There are many types of survivors, including those living with cancer and those free of cancer. This term is meant to capture a population of those with a history of cancer rather than to provide a label that may or may not resonate with individuals.

*Adapted from the National Coalition for Cancer Survivorship*

- ▶ The National Coalition for Cancer Survivorship (**NCCS**) defined survivorship as a distinct phase along the cancer control continuum.
- ▶ **Institute of Medicine's** (IOM) definition of cancer survivorship focuses on the phases of cancer care following completion of primary treatment and lasting until cancer recurrence or end of life.

### ▶ **NCCN's Definition of Survivorship-**

- ▶ An individual is considered a cancer survivor from the time of diagnosis, through the balance of his or her life.
- ▶ Family members, friends, and caregivers are also impacted.





Primary tumor  
treatment

Survivorship phase

Early  
survivorship

0 – 5 years since  
termination of initial  
treatment

Late survivorship

>5 years since termination of initial treatment

Living with uncertain and/or poor prognosis

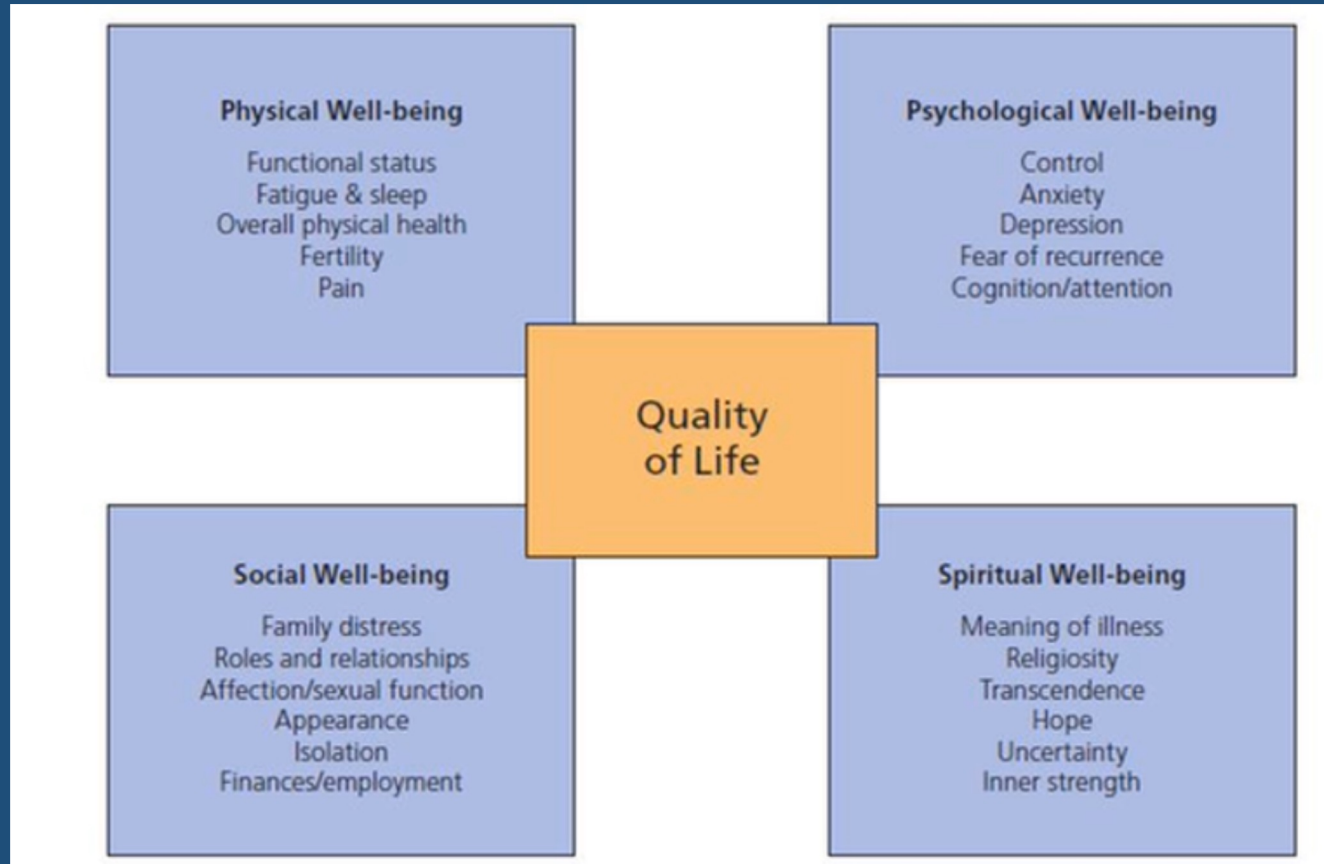


*cancers*



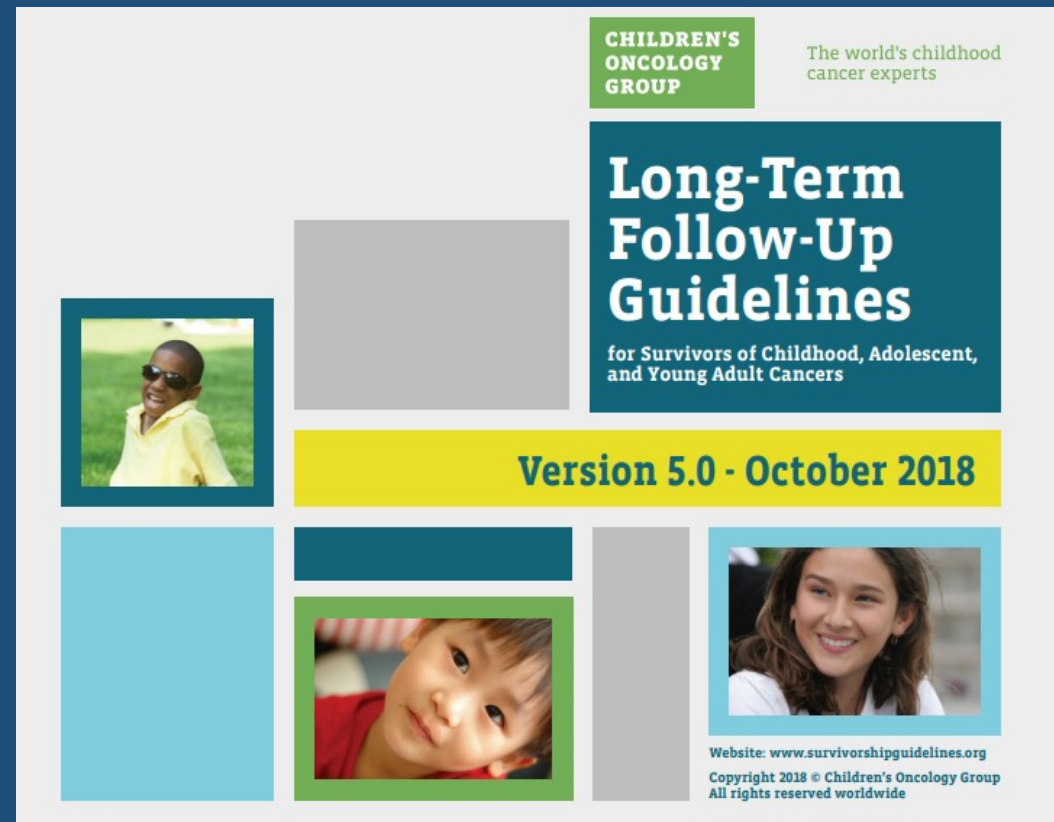
## Late Effects of Cancer Treatment

- ▶ **Physical/Medical** (e.g., second cancers, cardiac dysfunction, pain, lymphedema, sexual impairment)
- ▶ **Psychological** (e.g., depression, anxiety, uncertainty, isolation, altered body image)
- ▶ **Social** (e.g., changes in interpersonal relationships, concerns regarding health or life insurance, job loss, return to school, financial burden)
- ▶ **Existential and Spiritual Issues** (e.g., sense of purpose or meaning, appreciation of life)



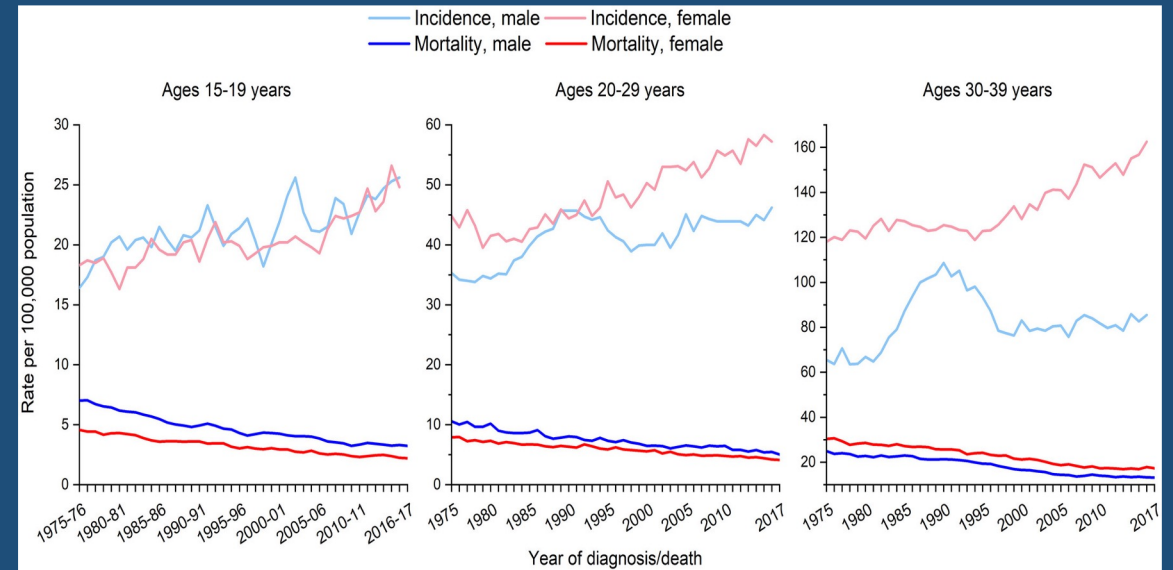
# Long Term Follow-Up Guidelines

- To raise awareness of the risk of late treatment-related sequelae
- To facilitate early identification and intervention for these complications
- To standardize follow-up care and improve quality of life of young cancer survivors
- Provide guidance to health care professionals including pediatricians who supervise survivors



# The adolescent and young adult (AYA) cancer survivorship population

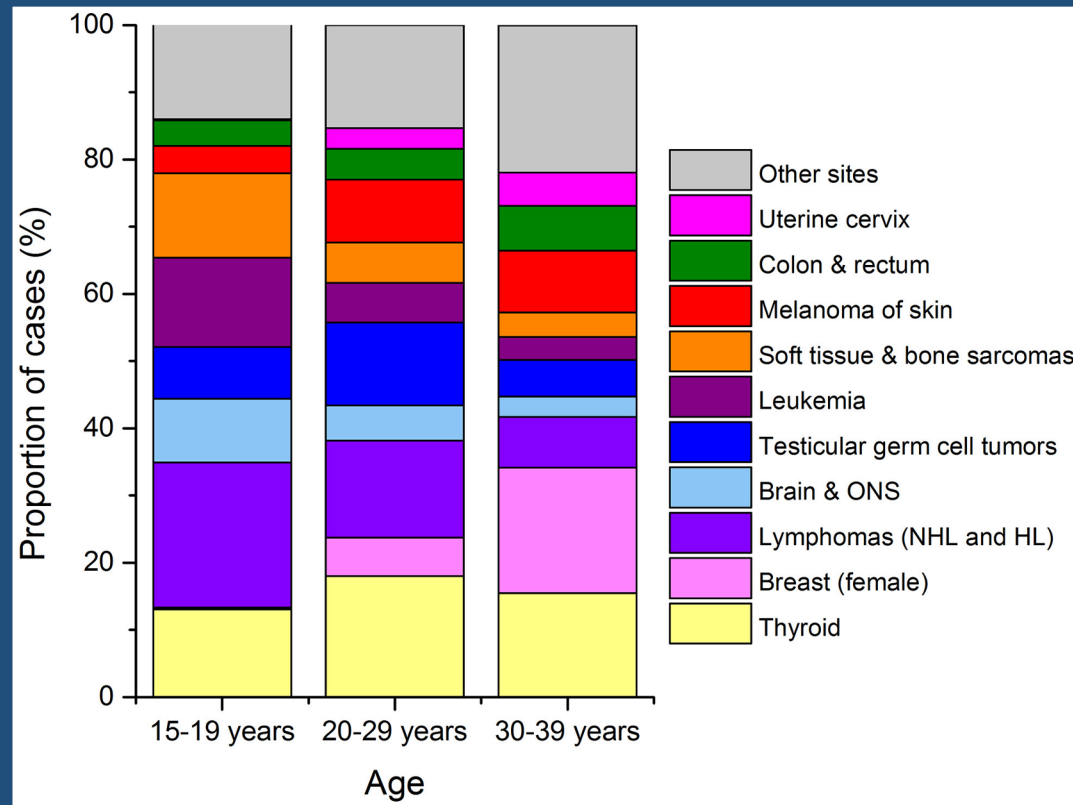
- Patients aged 15 to 39 years old at their initial diagnosis constitute the adolescent and young adult (AYA) cancer survivorship population
- 2% of all invasive cancers diagnosed & <10% of all cancer survivors
- AYA cancer survivors are at risk of several late and long-term effects that can influence cognitive, psychosocial, and physical functioning as well as financial prospects.



LIVESTRONG Young Adult Alliance <http://www.livestrong.org/What-We-Do/Our-Actions/Programs-Partnerships/LIVESTRONG-Young-Adult-Alliance> (Accessed on June 30, 2014).

Bleyer A, Viny A, Barr R.. Introduction. In: Cancer Epidemiology in Older Adolescents and Young Adults 15 to 29 Years of Age, Including SEER Incidence and Survival: 1975-2000. National Cancer Institute, NIH Pub. No. 06-5767., Bleyer A, O'Leary M, Barr R, Ries LAG (Eds), National Institutes of Health, Bethesda 2006. p.1.

# Cancer statistics for adolescents and young adults, 2020

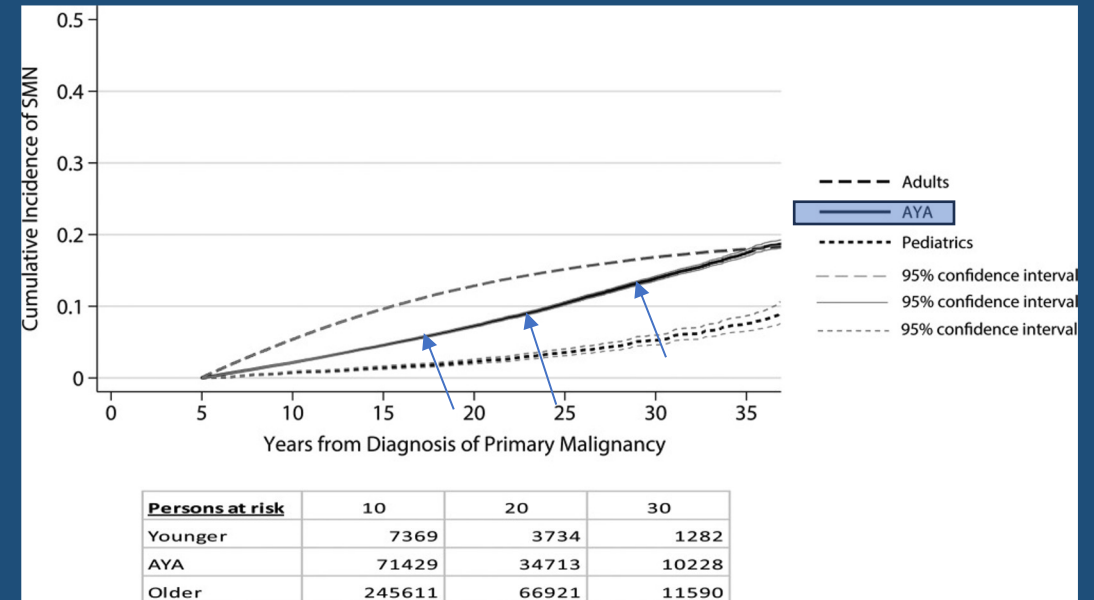


CA A Cancer J Clinicians, Volume: 70, Issue: 6, Pages: 443-459, First published: 17 September 2020, DOI: (10.3322/caac.21637)



# What unique about AYA ?

- 1.5-fold higher risk of dying from recurrence or progression of their primary cancer
- 14% of AYA cancer survivors developed a subsequent cancer 30 years postdiagnosis
- Worse overall psychosocial functioning due to difficulty in coping with cancer during early life transitions.
- Substantial disruptions in school , career, functioning and appearance, leading to further challenges in resuming daily-life activities.
- Special difficulties with fertility, sexual dysfunction, and body image, particularly among AYA women
- Tend to present at a more advanced stage
- AYAs have been underrepresented in clinical trials, particularly when compared with pediatric populations



# “AYA gap”

## Report of the Adolescent and Young Adult Oncology Progress Review Group

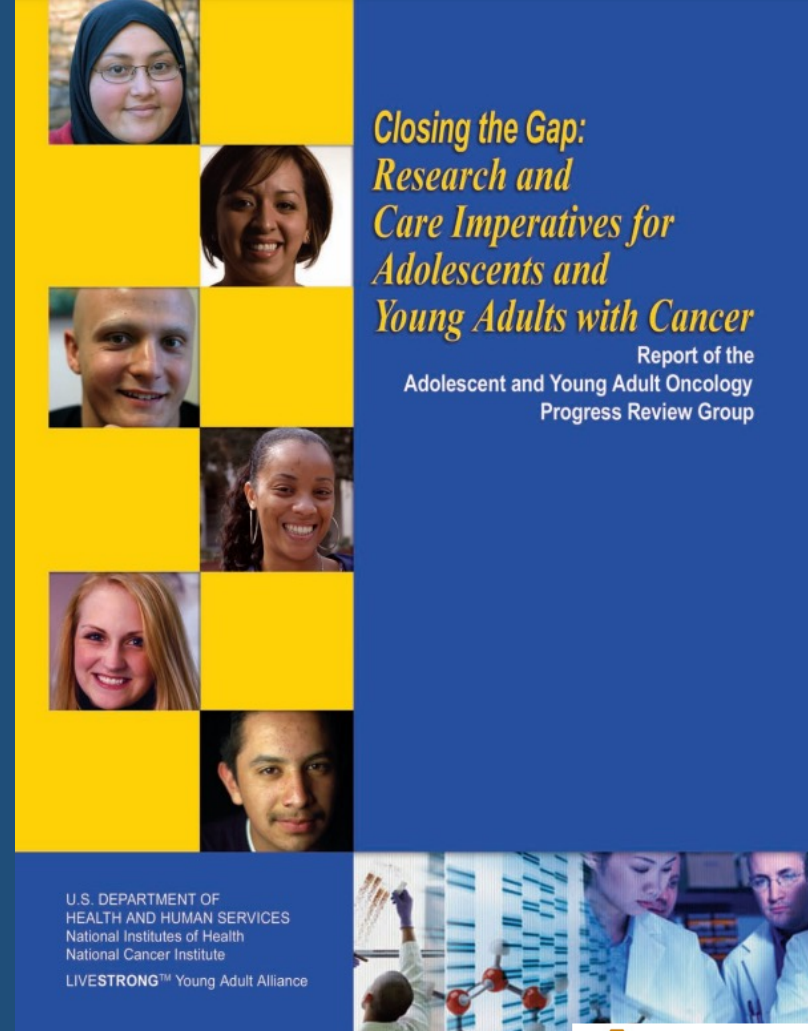
Recommendation 1: Identify the characteristics that distinguish the unique cancer burden in the AYA patient.

Recommendation 2: Provide education, training, and communication to improve awareness, prevention, access, and quality cancer care for AYAs.

Recommendation 3: Create the tools to study the AYA cancer problem.

Recommendation 4: Ensure excellence in service delivery across the cancer control continuum (i.e., prevention, screening, diagnosis, treatment, survivorship, and end of life).


Recommendation 5: Strengthen and promote advocacy and support of the AYA cancer patient.



**Closing the Gap:  
Research and  
Care Imperatives for  
Adolescents and  
Young Adults with Cancer**

Report of the  
Adolescent and Young Adult Oncology  
Progress Review Group

U.S. DEPARTMENT OF  
HEALTH AND HUMAN SERVICES  
National Institutes of Health  
National Cancer Institute  
LIVESTRONG™ Young Adult Alliance



# Fertility

- In our US population-based study, >70% of AYA cancer patients reported being told that treatment may affect their fertility
- Male patients were more than twice as likely as female patients to report that fertility preservation options were discussed
- Almost one-third of males reported making arrangements for fertility preservation, 4 to 5 times higher than females
- 18% of males and 38% of females had not made such fertility-preservation because they were not aware

Characteristic	Male (n=283)				Female (n=176)**					
	Was Told		Discussed		Made Arrangement		Was Told		Discussed	
	N	(%) <sup>*</sup>	N	(%)	N	(%)	N	(%)	N	(%)
<b>under age 18</b>										
No	152	(84.9)	139	(77.7)	74	(41.3)	73	(73.7)	44	44.4
Yes	73	(70.9)	61	(59.2)	13	(12.6)	57	(74.0)	16	20.8
<b>Health insurance at diagnosis</b>										
Private/HMO/PA	163	(79.1)	154	(74.8)	72	(35.0)	101	(76.5)	51	38.6
Government	34	(79.1)	23	(53.5)	6	(14.0)	19	(61.3)	2	6.5
None	11	(84.6)	6	(46.2)	2	(15.4)	4	(80.0)	2	40.0
<b># comorbid conditions</b>										
None	169	(80.9)	157	(75.1)	70	(33.5)	93	(73.8)	44	(34.9)
One	39	(83.0)	29	(61.7)	14	(29.8)	20	(76.9)	9	(34.6)
Two+	17	(63.0)	15	(55.6)	3	(11.1)	17	(70.8)	7	(29.2)
<b>At least one provider a medical oncologist</b>										
No	57	(75.0)	56	(73.7)	17	(23.4)	9	(60.0)	6	(40.0)
Yes	149	(81.0)	124	(67.4)	62	(33.7)	117	(75.5)	51	(32.9)
<b>Treatment fertility risk level</b>										
None/Low	45	(73.8)	29	(47.5)	11	(18.0)	78	(82.1)	37	(39.0)
Intermediate/High	130	(82.8)	121	(77.1)	49	(31.2)	22	(75.9)	9	(31.0)
Unknown/Missing	50	(76.9)	51	(78.4)	27	(41.5)	30	(57.7)	14	(26.9)

## Unmet adolescent and young adult cancer survivors information and service needs: A population-based cancer registry study

**Table 2**

Total<sup>a</sup> and unmet<sup>b</sup> services needed before, during or after cancer treatment for adolescents and young adults recently diagnosed with cancer, frequency (percent), overall and by cancer site.

Type of service	Total need <sup>a</sup>	Unmet need <sup>b</sup>	Missing <sup>c</sup>
Participate in a support group	96 (19.2)	72 (75.0)	22
See a pain management expert	68 (13.5)	43 (63.2)	20
Get professional advice to help figure out payment for healthcare	131 (26.1)	80 (62.0)	21
See a physical or occupational therapist for rehabilitation	80 (16.0)	46 (58.2)	23
See a psychiatrist, psychologist, social worker or mental health worker	139 (27.5)	76 (55.5)	18
Talk with a spiritual or religious counselor about your cancer	92 (18.3)	33 (35.9)	19
Have a nurse come to your home	38 (7.5)	11 (29.0)	16
Any service need	<i>d</i>	179(34.9)	

<sup>a</sup>Total need is the number of participants who reported needing the service. Participants who reported receiving the service but did not answer the need question were assumed to have needed the service. The denominator for the total need percentage is the number of participants who answered the service questions.



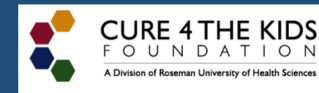
NIH Public Access

Author Manuscript

*J Cancer Surviv.* Author manuscript; available in PMC 2013 September 01.

Published in final edited form as:

*J Cancer Surviv.* 2012 September ; 6(3): 239–250. doi:10.1007/s11764-012-0219-9.



# Young and Uninsured: Insurance Patterns of Recently Diagnosed Adolescent and Young Adult Cancer Survivors in the AYA HOPE Study

Parsons et al.

**Table 1**

Characteristics of AYA HOPE Participants (N=465)

	All Survivors		Continuous Insurance*	At least some time uninsured	p-value
	N	%	(N=347)	(N=118)	
<b>Demographic Characteristics †</b>					
<i>Age at Diagnosis</i>					
15-19	62	13.3	80.7	19.4	0.45
20-24	81	17.4	71.6	28.4	
25-39	322	69.3	74.2	25.8	
<i>Sex</i>					
Male	287	61.7	71.8	28.2	0.07
Female	178	38.3	79.2	20.8	
<i>Race</i>					
white	375	80.7	74.7	25.3	0.97
Non-white	90	19.4	74.4	25.6	
<i>Education</i>					
≤High School	130	28.0	64.6	35.4	<0.01
Some College/Vocational School	123	26.5	72.4	27.6	
≥College Graduate*	212	45.6	82.1	17.9	
<i>Marital Status</i>					
Married/Living as married	198	42.6	78.3	21.7	0.12
Not married*	267	57.4	71.9	28.1	
<i>Change in Work/School after Diagnosis</i>					
Yes*	115	24.7	80.9	19.1	0.08
No	350	75.3	72.6	27.4	
<i>Ongoing Treatment **</i>					
Yes	92	19.8	65.2	34.8	0.02
No/Don't know*	373	80.2	76.9	23.1	

**Table 2**

Demographic, Treatment and Health Characteristics Associated with Insurance Since Diagnosis(N=465)

	Adjusted Odds Ratio	95%CI
<i>Demographic Characteristics †</i>		
<i>Age at Diagnosis</i>		
15-19(Reference)	1.00	
20-24	2.99	1.26-7.09
25-39	3.35	1.49-7.55
<i>Sex</i>		
Male(Reference)	1.00	
Female	0.71	0.43-1.16
<i>Race</i>		
white(Reference)	1.00	
Non-white	0.91	0.52-1.60
<i>Education</i>		
≤High School	2.80	1.55-5.06
Some College/Vocational School	1.76	1.00-3.08
≥College Graduate*(Reference)	1.00	
<i>Marital Status</i>		
Married/Living as married	0.69	0.42-1.13
Not married*(Reference)	1.00	
<i>Change in Work/School after Diagnosis</i>		
Yes*(Reference)	1.00	
No	0.70	0.40-1.23
<i>Ongoing Treatment**</i>		
Yes	1.53	0.87-2.67
No/Don't know*(Reference)	1.00	

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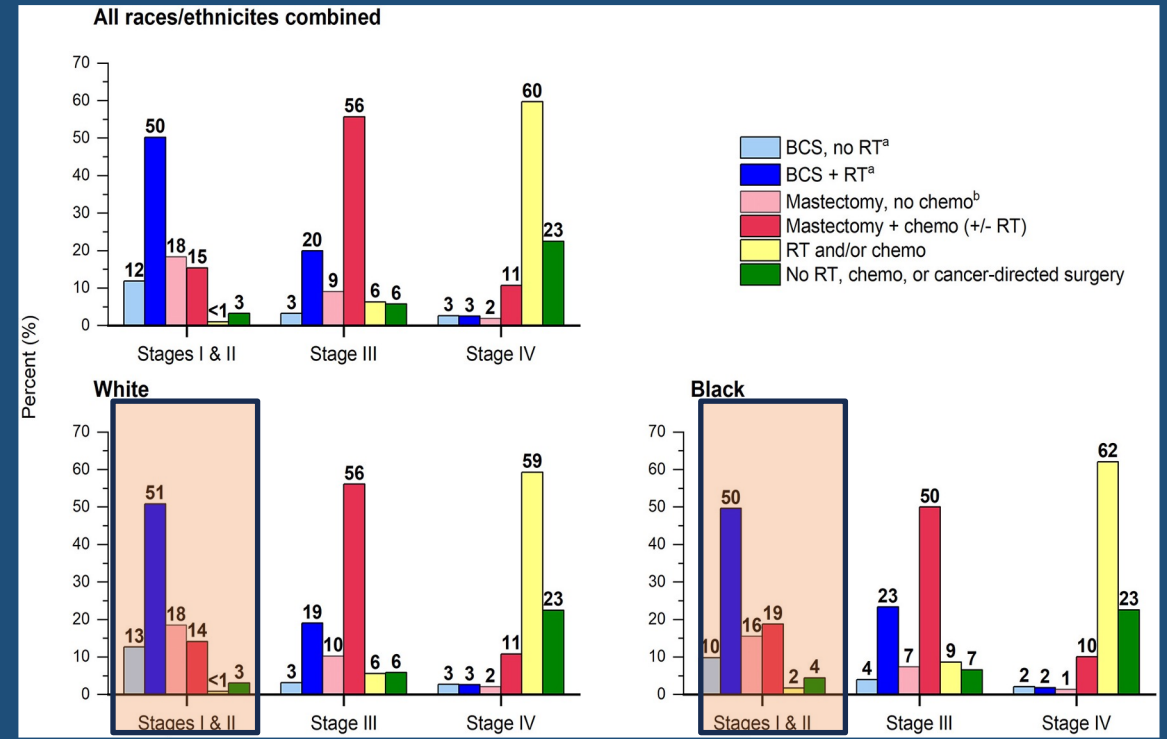
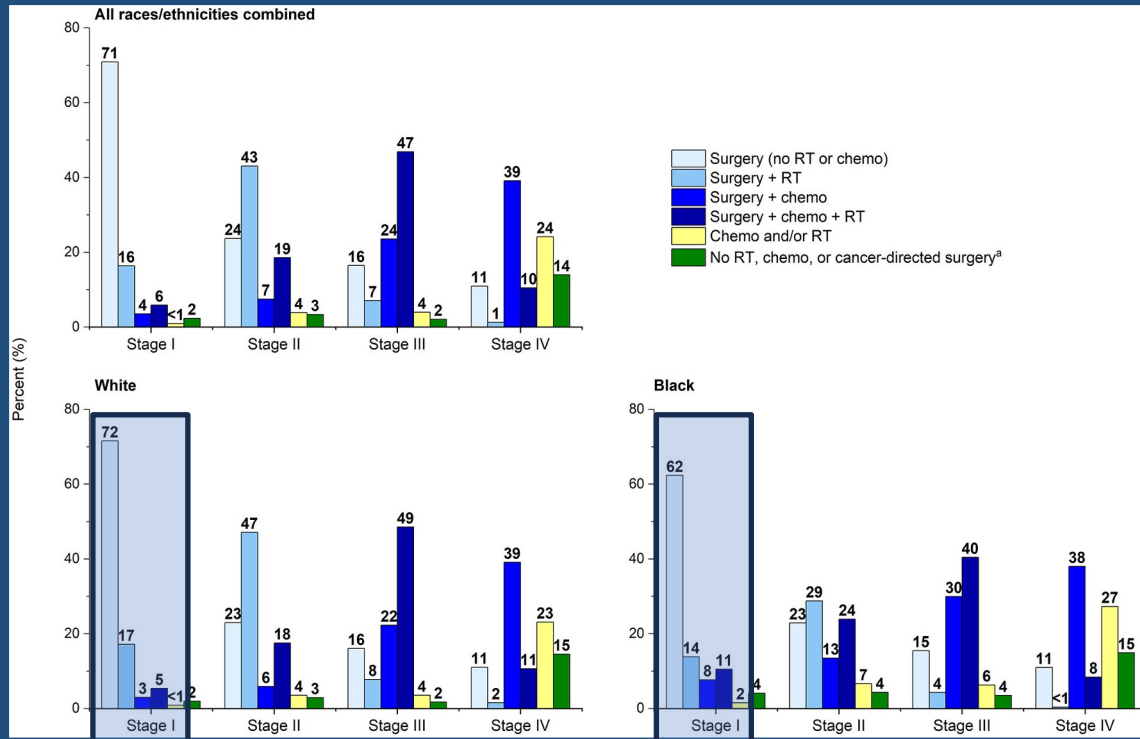
# Disparities of care

Table 5

Multivariate adjusted<sup>a</sup> odds ratios (OR) and 95% confidence intervals (95% CI) for high unmet information needs or any service need among adolescents and young adult cancer survivors by sociodemographic and health-related characteristics.

Characteristics	Six or More Unmet information needs OR (95% CI)	Any unmet service needs OR (95% CI)
Age group (years)		
15-19 years	0.49 (0.22 - 1.09)	0.71 (0.30 - 1.67)
20-29 years	0.90 (0.56 - 1.43)	1.08 (0.67 - 1.72)
30-39 years	reference	reference
Gender		
Female	reference	reference
Male	<b>1.66 (1.04 - 2.64)</b>	1.35 (0.84 - 2.16)
Race/ethnicity		
Non-Hispanic White	reference	reference
Asian /Pacific Islander	1.31 (0.65 - 2.62)	0.97 (0.47 - 2.00)
Black and AI/AN	<b>2.58 (1.24 - 5.36)</b>	1.43 (0.72 - 2.86)
Hispanic	<b>1.81 (1.07 - 3.06)</b>	1.17 (0.68 - 2.01)
Education		
College graduate or postgraduate	reference	reference
High school or less	1.37 (0.75 - 2.50)	0.63 (0.34 - 1.18)
Some college or associate degree	1.34 (0.83 - 2.18)	1.30 (0.79 - 2.14)
Currently in Treatment		
No or unknown	reference	reference
Yes	1.09 (0.61 - 1.96)	<b>0.56 (0.31 - 1.00)</b>
Marital Status <sup>b</sup>		
Married	reference	reference
Not married	1.14 (0.69 - 1.89)	0.94 (0.57 - 1.55)
Raising children		
No	reference	reference
Yes	1.27 (0.76 - 2.12)	1.03 (0.62 - 1.73)

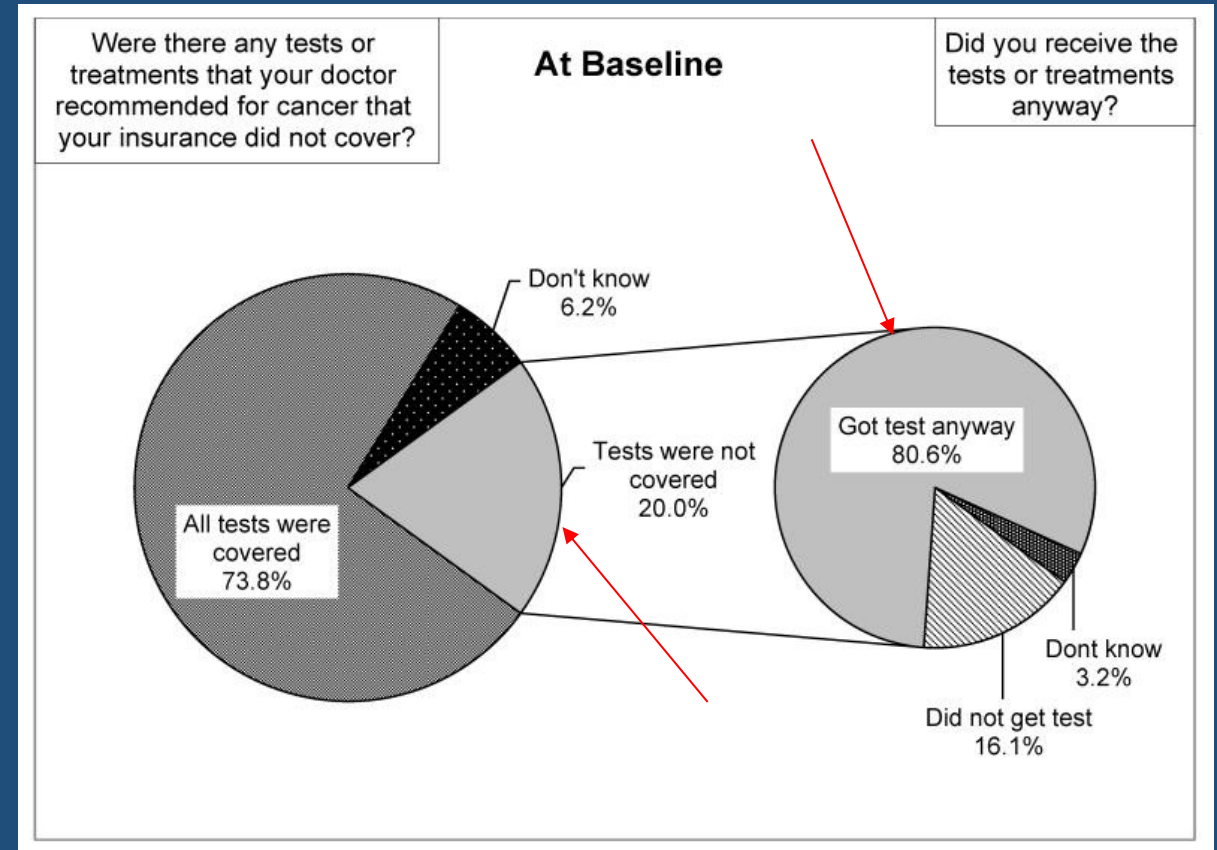
More likely to report unmet needs related to recurrence, treatment, and financial support for medical care





# Financial Burden

- 25% of cancer survivors indicated there were doctor-recommended tests/treatments not covered by their insurance
- 80.6% of the individuals with non-covered tests/treatments stated that they chose to receive the tests/treatments regardless
- Compared with older survivors, young survivors have higher rates of bankruptcy and more frequently forgo needed medical care because of cost



# OF INFUSIONS 5,772	LUMBAR PUNCTURES 625	# OF SEDATIONS 415
# OF BLOOD DRAWS 11,313	# OF HOURS DRUG ADMINISTRATION 13,986	BONE MARROW BIOPSIES 132

 TOTAL OFFICE & HOSPITAL VISITS IN 2022 <b>22,429</b>	 UNIQUE PATIENTS IN 2022 <b>4,161</b>	 AVERAGE PATIENTS PER DAY <b>90</b>
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In 2022,  
**36**  
OPEN Children's Oncology Group Studies  
**53**  
ACTIVE Clinical Research Studies



At C4K, we understand our role as the primary patient advocate. We aim to provide the children we treat and their families with an actionable example of hope. In 2020, we opened the Andre Agassi Foundation for Education Learning Center and through their ongoing generous support, we were able to incorporate, in its' entirety, a robust technology upgrade in 2022.

Our Learning Center has allowed us to provide critical educational services to our patients. With these unique additional advancements in our onsite capabilities, we are able to provide easy access to educational support. Beginning in 2022, patients can now seamlessly connect to the Learning Center from the infusion suite. We understand the massive impact uninterrupted education has on our fragile patient population. The goal of the Learning Center is to ensure our patients are receiving unique support and guidance for their individual education needs.

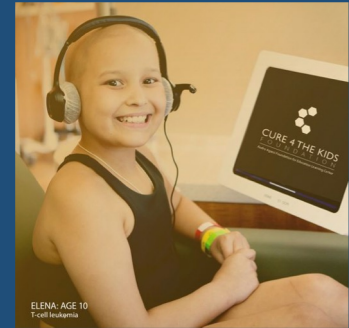
In 2022, we also focused our efforts on individualized education plans to ensure some normalcy to our patients' lives. Our core philosophy is understanding that by supporting a child's cognitive development, we provide hope for a better tomorrow.

The mission of the Learning Center is to provide quality academic services to all patients in need of educational support while being committed to the overall physical, psychological, social, and spiritual well-being of the student patient.



As our program grows, we are thrilled to report that the services and depth of the program continues to evolve and transform. Throughout the last school year, we were able to establish 6 components of the Learning Center, all of which are providing comprehensive educational support services to our patient population. These components consist of Janie's Classroom, CCSD Collaboration, Young Childhood Development, Arts in Medicine, College & Career Guidance, Disease-specific Education & Resources.

Currently Supporting Over <b>425</b> Patients/Students	Received Over <b>1,000</b> Books from Barnes & Noble	First-Ever 'C4K Graduation' <b>24</b> High School Graduates
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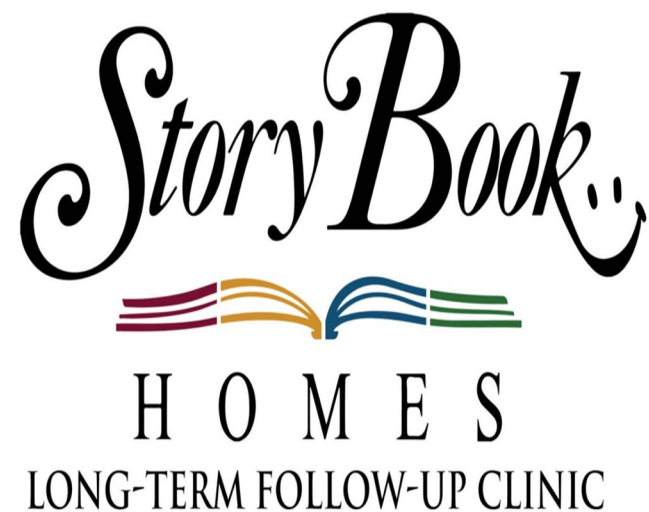


CURE 4 THE KIDS FOUNDATION  
Clinical Excellence. Compassionate Care.  
**RANKED #1**  
Among Best Nonprofits to Work For



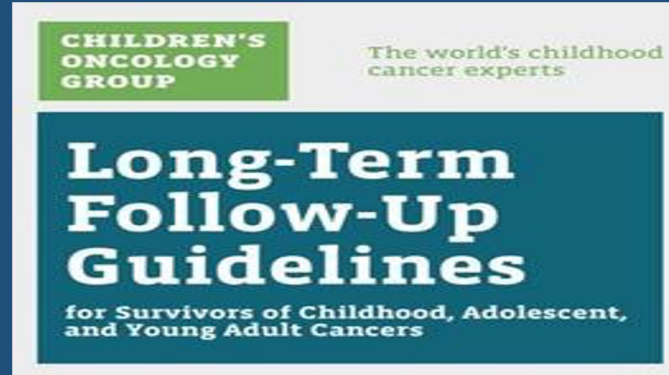
## Staying Healthy After Treatment

The most important thing you can do as a childhood cancer survivor is to stay healthy. That's why we created the StoryBook Homes Long-Term Follow-Up Clinic For Childhood Cancer Survivors. Thanks to a generous gift from the principals of StoryBook Homes, Wayne and Catherine Laska, the Long-Term Follow-Up Clinic is intended to help survivors – no matter where they received their treatment – navigate through the after effects of their treatment throughout their entire life.

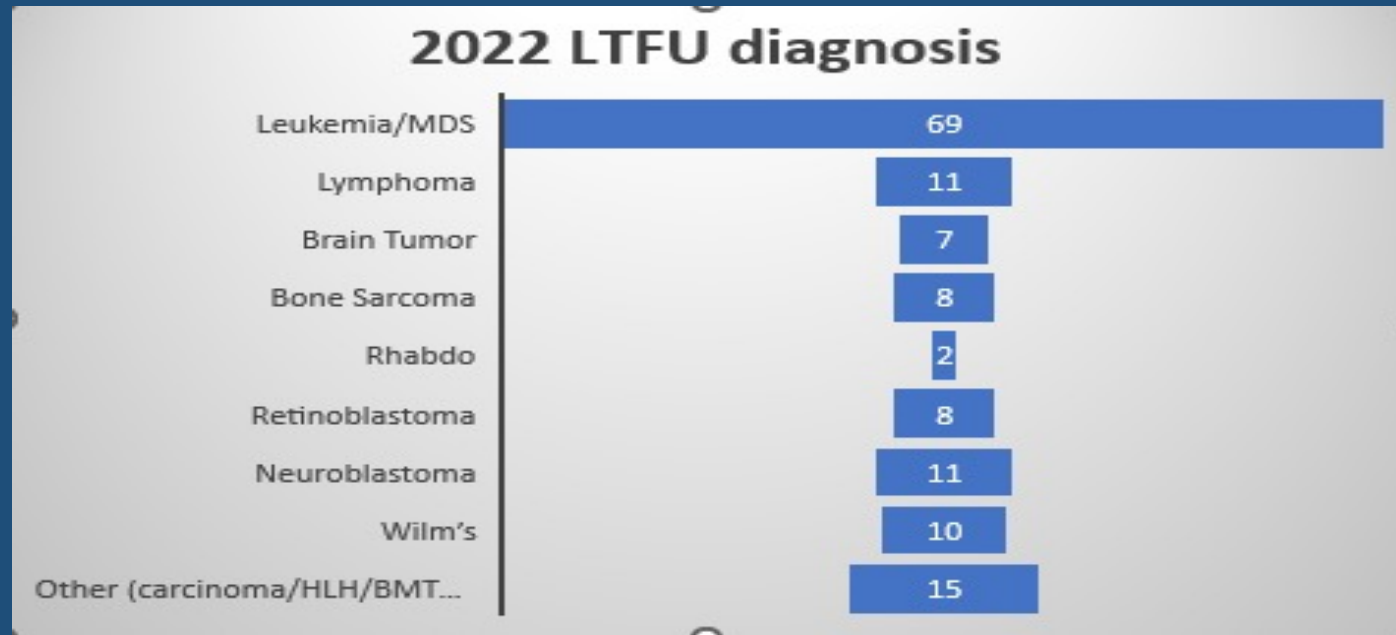




- A comprehensive visit and is seen by one of our Board-Certified Pediatric Hematology-Oncology providers, a Pediatric Neuropsychologist, a Social Worker, and an Education Specialist.



- After utilizing the clinic, each patient receives a binder containing all the details and specific cancer treatments each patient received, as well as the possible future health risks those treatments may cause.



Children's Oncology Group  
Adolescent and Young Adult (AYA)  
Oncology Discipline Committee

ANNUAL REPORT 2022

*Optimizing AYA Health & Survival Through  
Collaborative Cancer Clinical Trials*

CHILDREN'S  
ONCOLOGY  
GROUP

To improve survival and other health related outcomes for all adolescent and young adult patients (15 to 39 years of age) diagnosed with cancer



***AYA TRIALS***

11

# of COG-led cross-network AYA trials

6


# of adult NCTN group cross-network AYA trials COG is participating in

“It is as if we have invented sophisticated techniques to save people from drowning, but once they have been pulled from the water, we leave them on the dock to cough and splutter on their own in the belief that we have done all that we can.”

*-Dr. Fitzhugh Mullan  
“Seasons of Survival: Reflections of a  
Physician with Cancer”*



Remembering  
Fitzhugh Mullan, MD

  
NATIONAL COALITION  
FOR CANCER SURVIVORSHIP  
[canceradvocacy.org](http://canceradvocacy.org)

1942-2019





Thank you