

The Childhood Cancer Research Network (CCRN)

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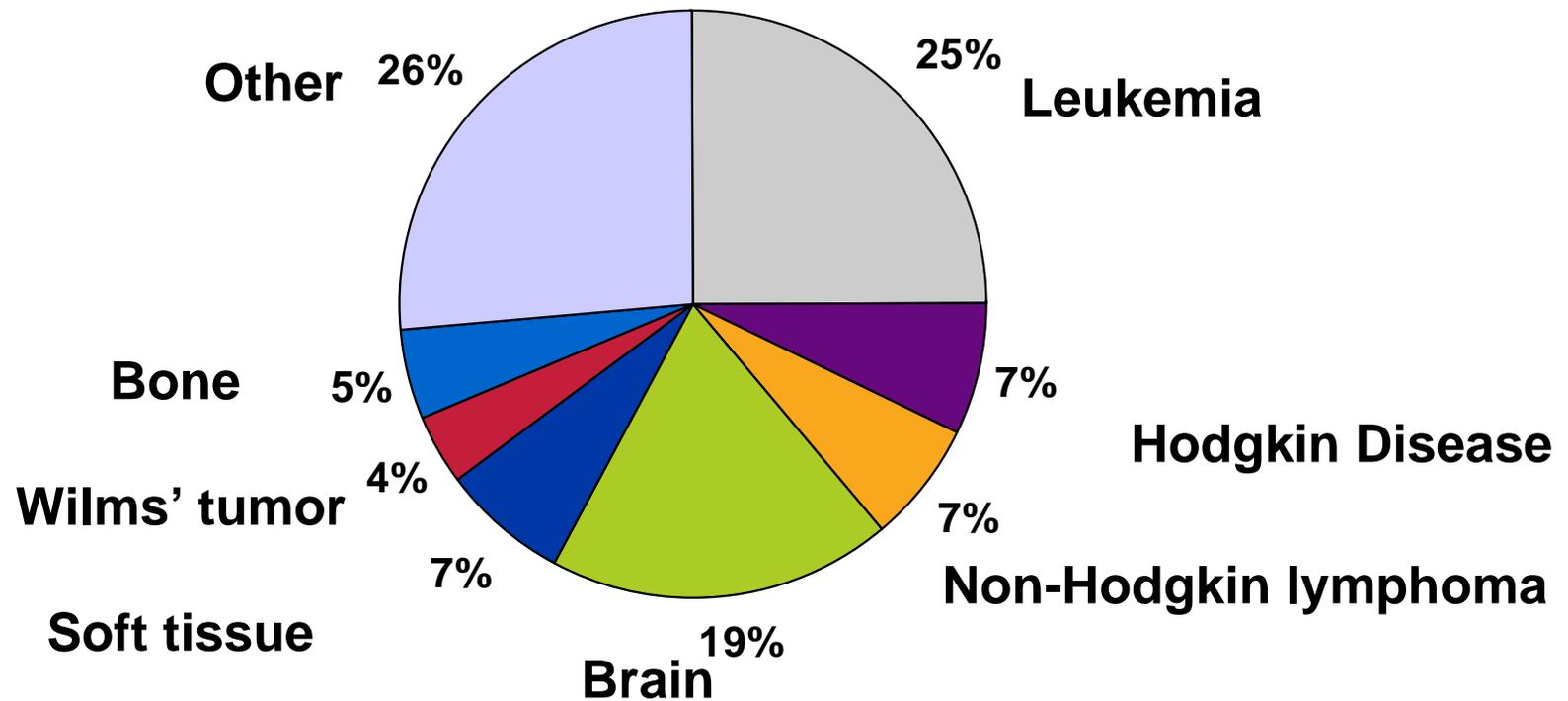


Overview

- **Childhood cancer**
- **Children's Oncology Group**
- **CCRN**

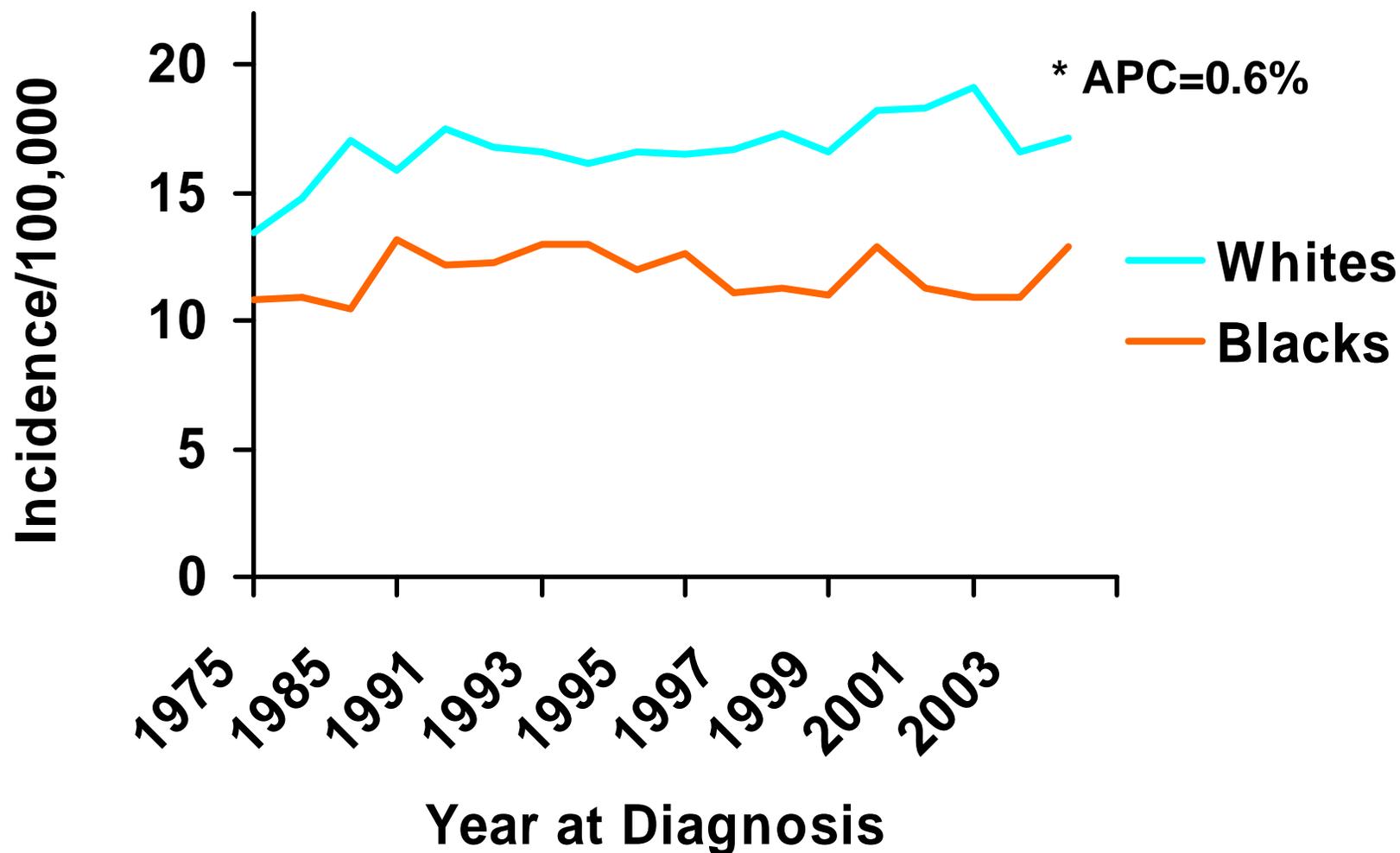
Background

Estimated 12,500 children under the age of 20 years are newly diagnosed with cancer in the U.S. each year



* Source, SEER 1998-2002

Trends in Cancer Incidence, 0-19 Years of Age SEER Program 1975-2004

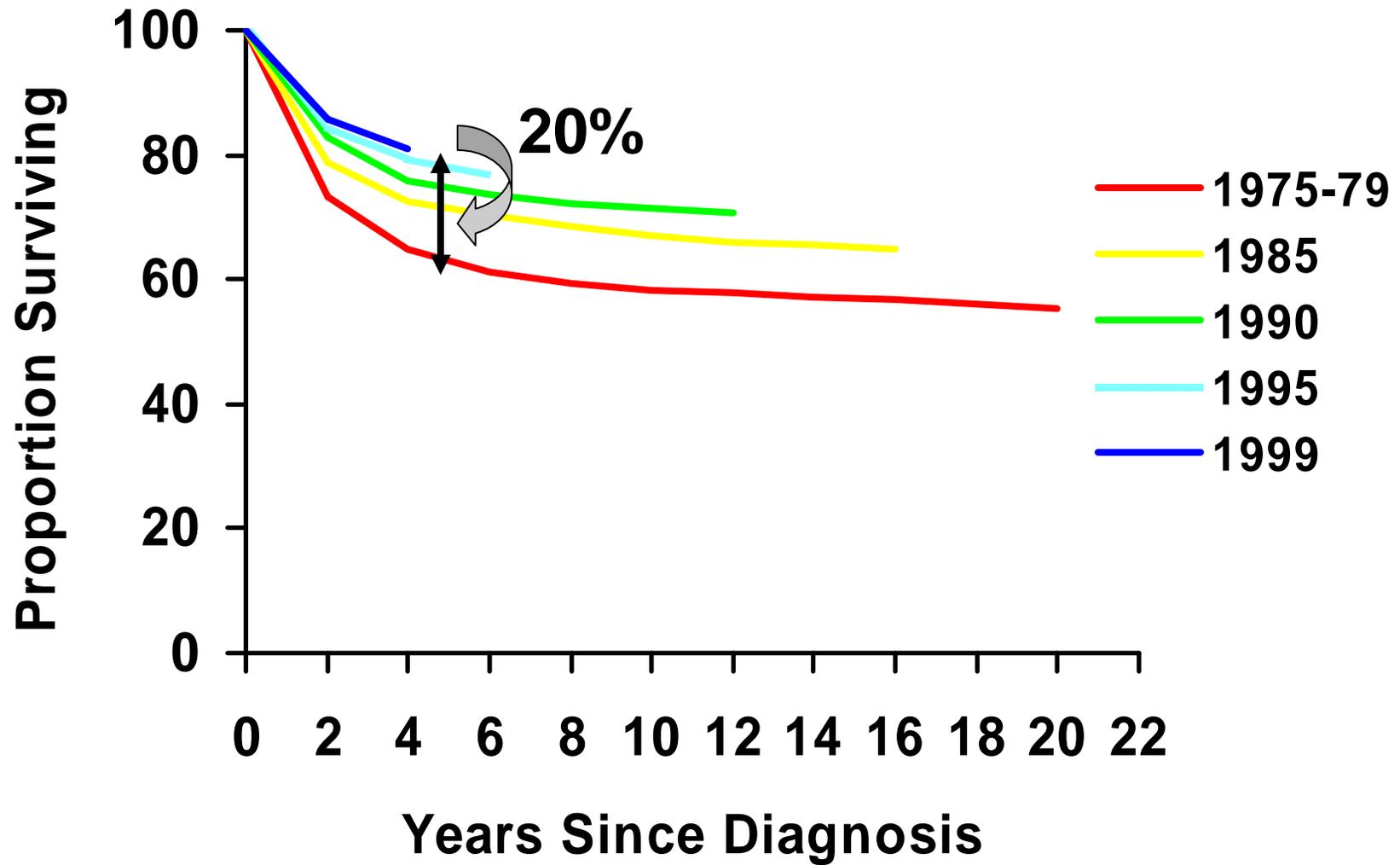


* Annual percent change is significantly increased

What do we know about risk factors?

- **High birth weight (ALL)**
- **Vitamin/folic acid supplementation? (ALL, neuroblastoma, brain tumors)**
- **Pesticides/solvents? (AML)**
- **Early life infections? (ALL)**

Cancer Survival, 0-19 Years of Age SEER Program 1975-2004



Recent Data

Overall, 1 in 1000 individuals is a childhood cancer survivor

1 in 570 individuals between the ages of 20 and 34 years is a childhood cancer survivor

Over 250,000 childhood cancer survivors in the United States

Selected Health-Related Outcomes of Childhood Cancer Survivors

Cardiac/vascular

Cytogenetic

Dental

Endocrinologic

Educational

Gastrointestinal

Hearing

Hepatic

Neurologic

Neuropsychologic

Ophthalmologic

Orthopedic

Psychosocial

Pulmonary

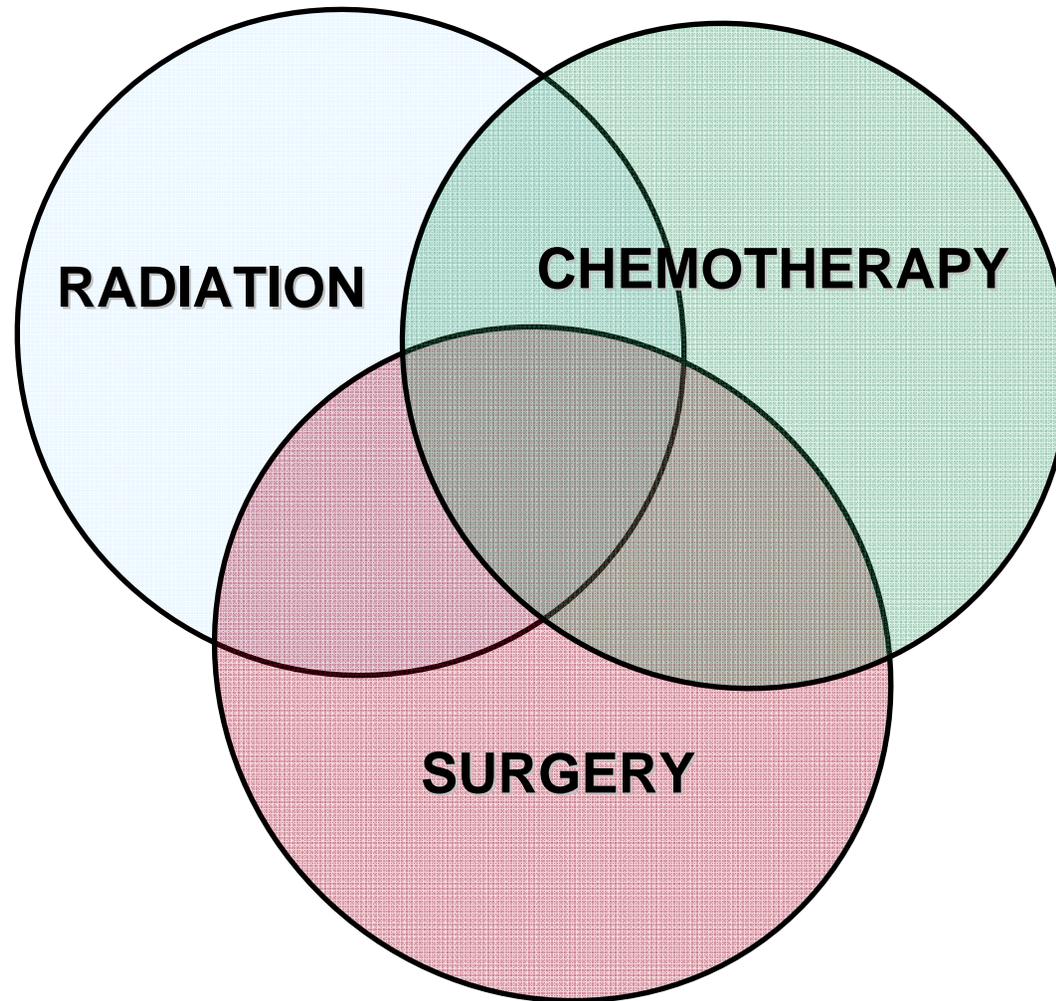
Renal

Reproduction

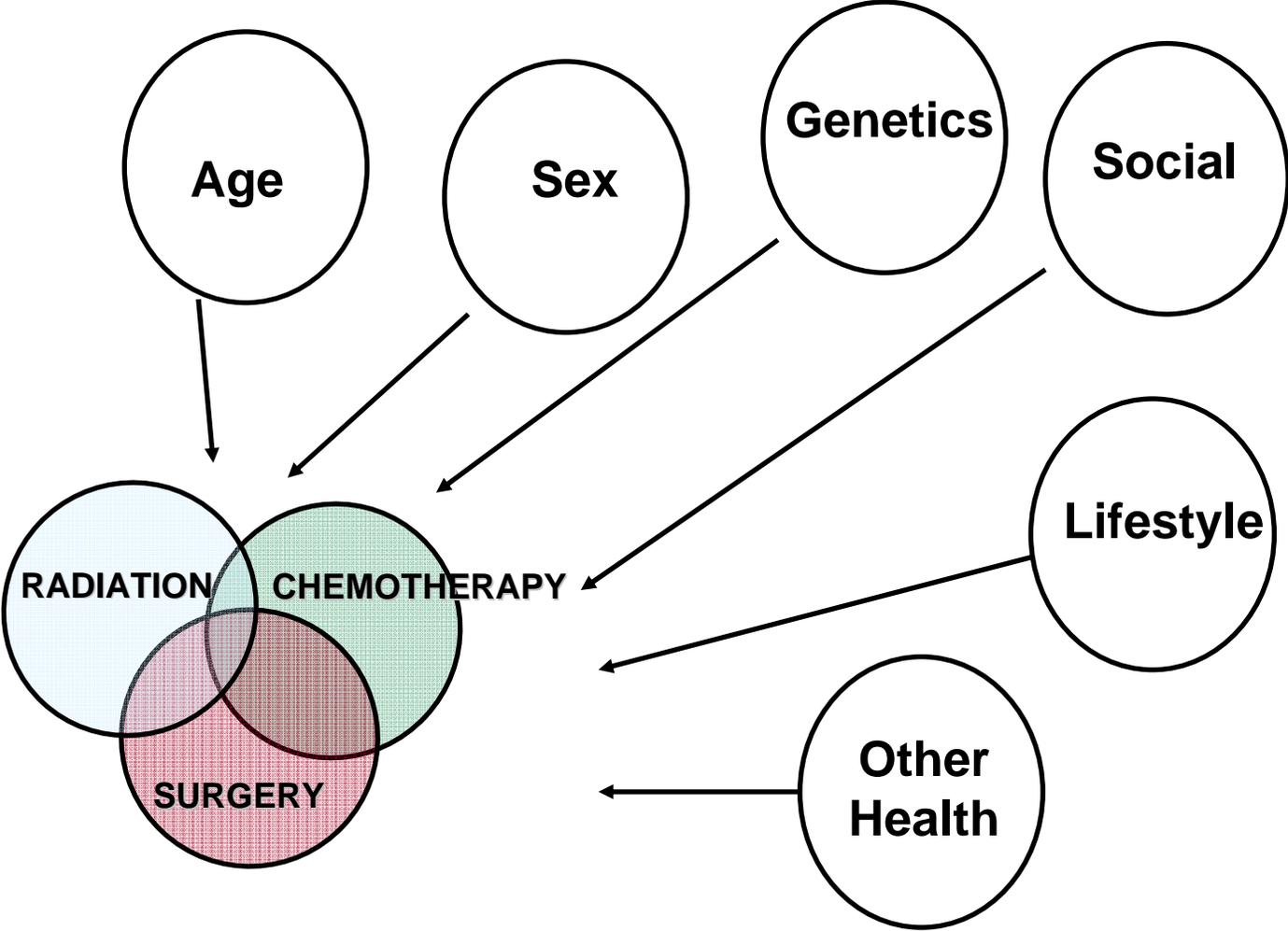
Second Cancers

Skeletal

Assessment of Risk for Subsequent Cancers



Factors to be Considered in Risk of Late Effects of Therapy



Overall Challenges

Small numbers

Large geographical areas

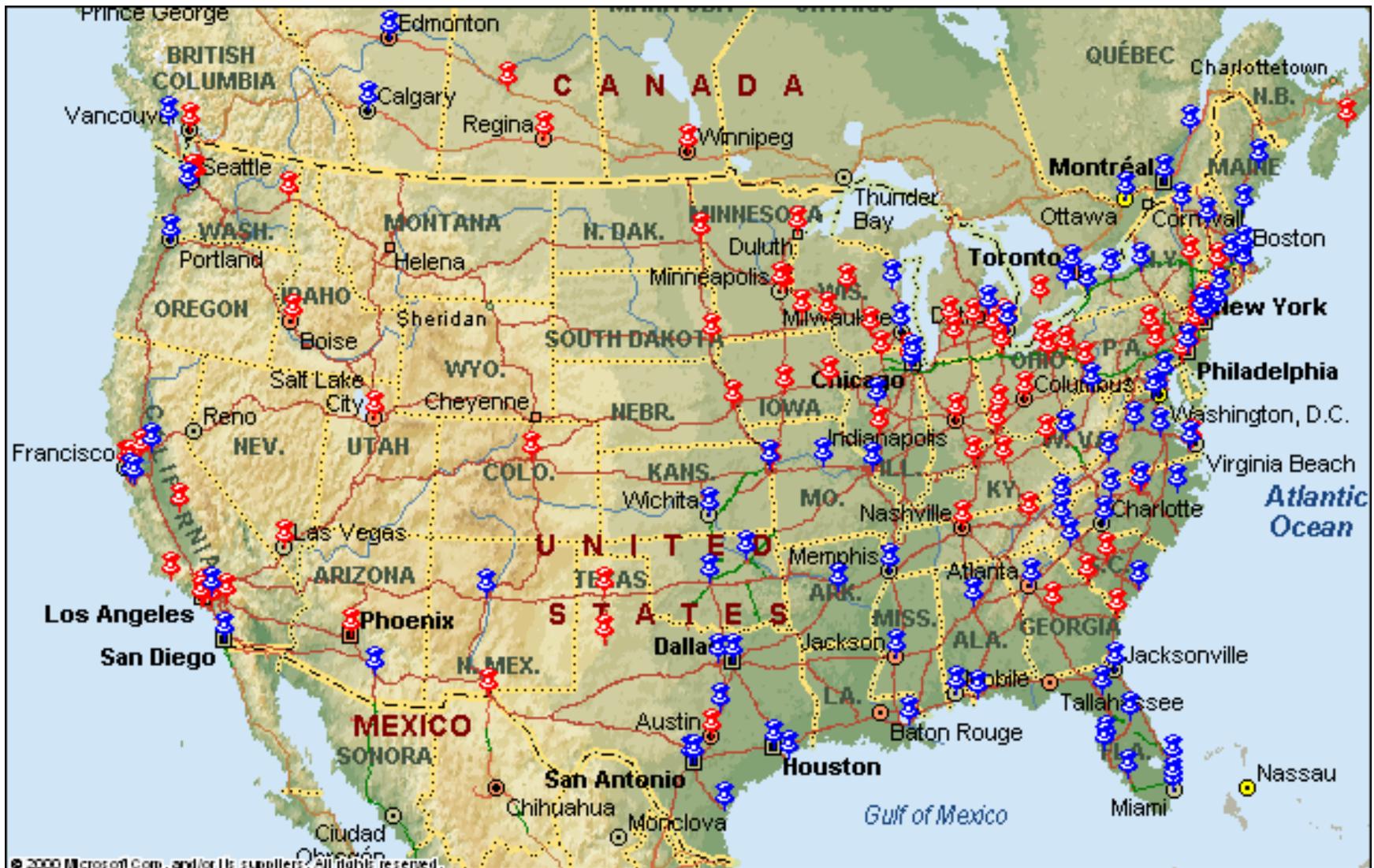
Follow-up of patients for late-effects studies

Homogeneity of populations in current survivor studies

Rapidly changing therapies

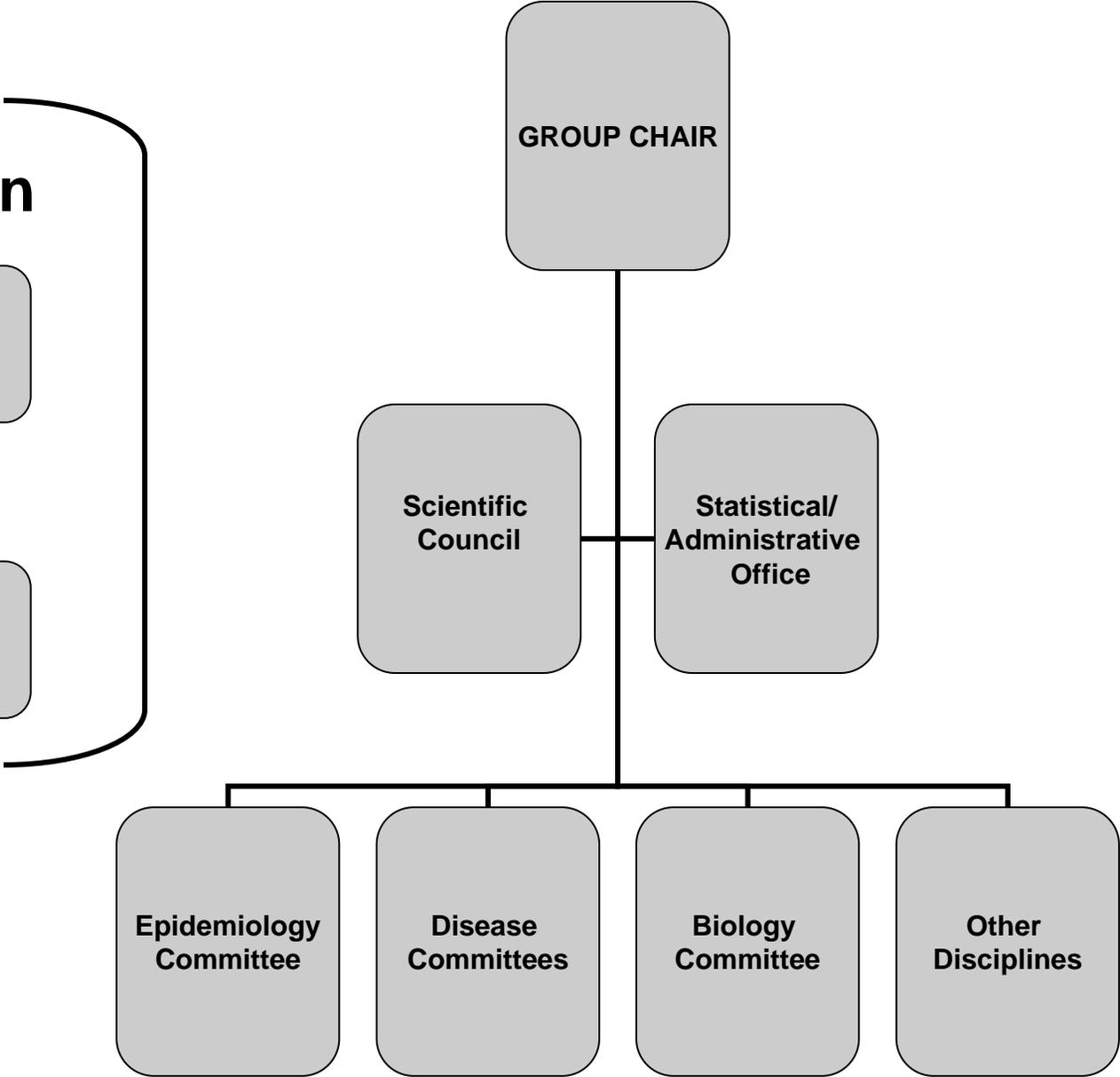
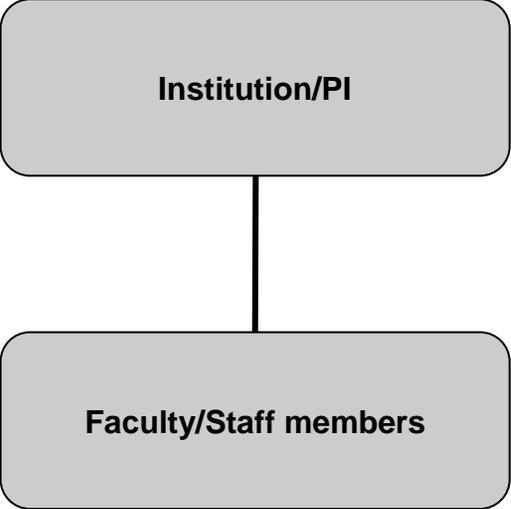
Children's Oncology Group (COG)

COG COG



COG Organizational Structure

COG Institution



COG Administrative Process

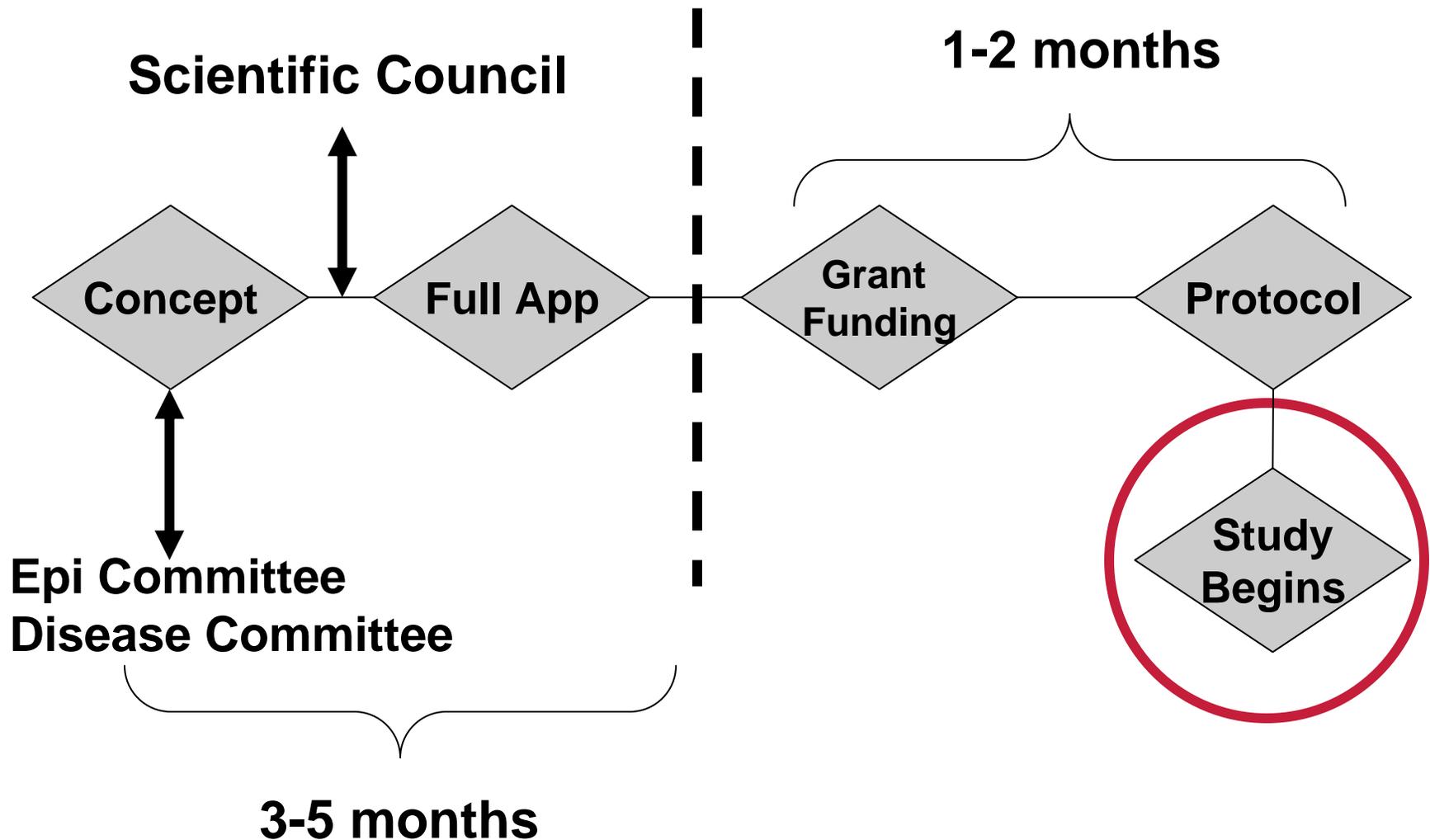


Table 1. Children's Cancer Group/COG etiology of childhood cancer studies

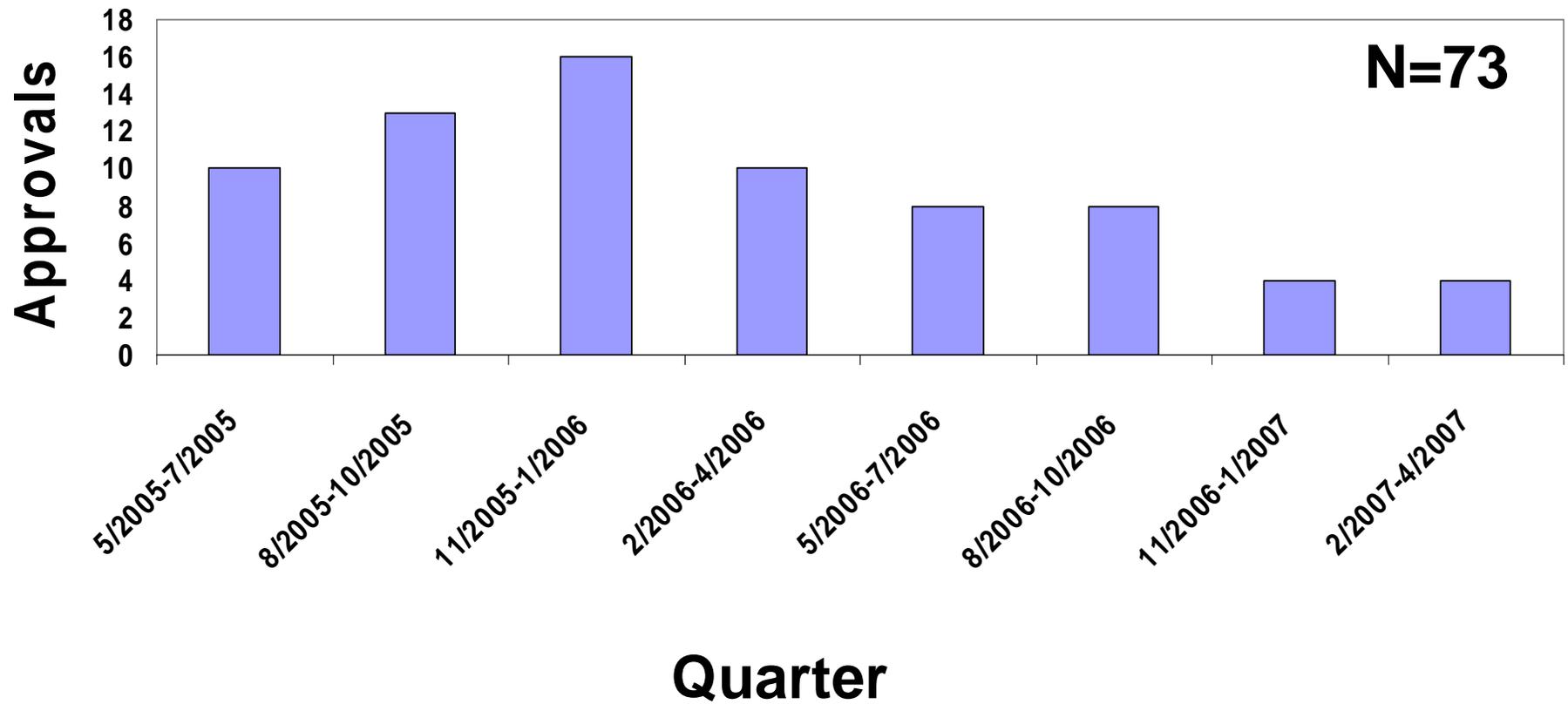
Protocol	Title	Cases (n)	Chairperson	Source of funds
E01	Case-control study of osteogenic sarcoma	200	T. Pendergrass	Local
E02	Case-control study of hepatoblastoma	75	J. Buckley	Local
E03	Case-control study of Ewing's sarcoma	170	L. Robison	NIH
E04	Self-administered questionnaire	3,500	J. Buckley	Local
E05	Case-control study of acute nonlymphoblastic leukemia	204	L. Robison	NIH
E06	Case-control study of Wilms' tumor*	240	A. Olshan	March of Dimes
E07	Case-control study of retinoblastoma	270	A. Meadows	NIH
E08	Case-control study of non-Hodgkin's lymphoma	249	J. Buckley	NIH
E09	Case-control study of infant leukemia	302	L. Robison	NIH
E10	Case-control study of rhabdomyosarcoma*	300	S. Grufferman	NIH
E11	Twin concordance study	850	J. Buckley	American Chemical Society
E12	Case-control study of primitive neural ectodermal tumor and astrocytoma	321	G. Bunin	NIH
E13	Case-control study of Hodgkin's disease*	300	S. Grufferman	NIH
E14	Case-control study of acute nonlymphoblastic leukemia	525	M. Steinbuch	NIH
E15	Case-control study of childhood acute lymphoblastic leukemia	1,915	L. Robison	NIH
E16	Parental occupation and childhood cancer	3,500	G. Bunin	March of Dimes
E18	Case-control study of neuroblastoma*	640	A. Olshan	NIH
E21	Case-control study of primitive neural ectodermal tumor	700	G. Bunin	NIH
AE22 [†]	Case-control study of germ cell tumors	600	X. Shu	NIH
B955	Environmental exposures and Ras mutations in childhood leukemia	2,440	J. Perentesis	NIH
B956	Glutathione S-transferase genotype in childhood leukemia	2,440	S. Davies	NIH
AE23 [†]	Case-control study of Down syndrome-leukemia and Down syndrome	160	J. Ross	NIH
AE24 [†]	Case-control study of infant leukemia	480	J. Ross	NIH
A0026 [†]	Case-control study of Wilms' tumor	600	A. Olshan	NIH
AADM01P1 [†]	Pilot for the Childhood Cancer Research Network	1,400	J. Ross	NIH
AE27 [†]	Case-control study of hepatoblastoma	600	L. Spector	Pending, NIH

*Collaborative study with the Pediatric Oncology Group.

[†]COG study (others were Children's Cancer Group studies unless otherwise noted).

How is it working??

COG institution IRB approvals per quarter for a case-control study of hepatoblastoma, 5/2005-4/2007



Children's Oncology Group

(Ross JA, et al. Cancer 1996; 77:201-206)

Age group (years)	Observed/ Expected	95% Confidence Interval
0-4	1.01	0.99-1.03
5-9	0.93	0.90-0.95
10-14	0.84	0.82-0.87
15-19	0.21	0.20-0.21

Treat approximately 90% of children under the age of 15 years diagnosed with cancer.

COG Epidemiology Research Program

(Ross JA, Olshan AF. Cancer Epi Biom Prev 2004; 13:1552-54)

- **Formation of a national pediatric cancer research registry**
- Gene-environment interactions
- Methodological issues (control selection, exposure assessment)
- Education

Childhood
Cancer
Research
Network

**A proposal for the establishment of
a North American research registry
for childhood cancer**

Why a nearly population-based registry?

Facilitate enrollment on epidemiology, late effects, and cancer control protocols

More precise estimates of incidence, trends, etc.

GIS methods for ecological studies providing a systematic means to address cancer clustering

CCRN History

NCI/EPA/CDC/ATSDR/DOE/COG	(1998)
CCRN Concept development	(1999)
External advisory committee	(2000)
NAACCR Meeting	(2000)
Supplemental funding received	(2000)
External advisory committee meeting	(2000)
ATSDR Workshop	(2000)
Planning meeting with Registry Reps	(2000)
Supplemental funding for pilot	(2000)
COG Meeting Phoenix	(2000)
COG Meeting Chicago	(2001)
Pilot Activated	(May 2001)
NAACCR Meeting	(2001)
CCRN/COG Meeting	(2001)
COG Meeting San Antonio	(2001)
COG Pilot Enrollments	(2002-2007)
CCRN/COG Meeting Arcadia	(2002)
NCI Meeting	(2002)
COG/CCRN Meetings	(2003-2005)
NCCF Funding for Groupwide Implementation	(2005)
Workshop on CCRN usage	(2005)
CDC Funding for Groupwide Implementation	(2006)
Development of complete protocol	(2006)
Informatics/Registration Updates	(2006)
Protocol to PCIRB	(2006-2007)

“Consent Protocol” (COG-AADM01P1)

COG will form the basis of the CCRN

Could eventually include record linkage with existing cancer registries

Simplify the IRB review process

“Consent Protocol” (COG-AADM01P1)

May 2001 – Jan 2007 Piloted at 23 C.O.G. institutions

- Obtain consent near diagnosis to provide personal identifiers at registration
- Obtain consent for possible future contact for non-therapeutic studies

Future studies would then be separately consented by the investigator(s) conducting the study.

“Consent Protocol”

January 2007

All institutions obtained IRB approval by 2002

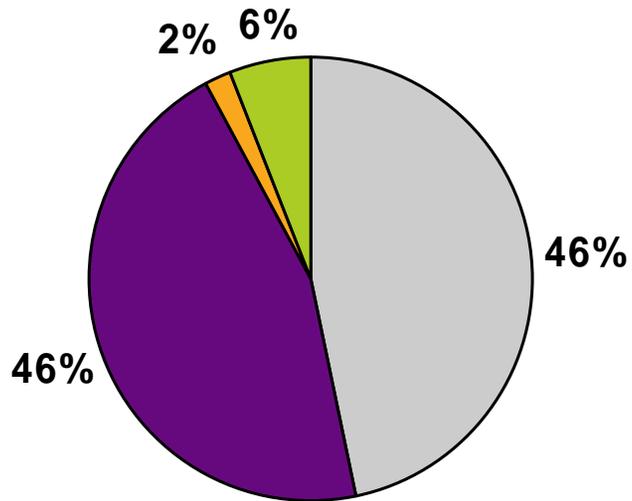
2242 parents/patients approached

2145 (96%) agreed to both consent levels

70 (~ 3%) agreed to name only

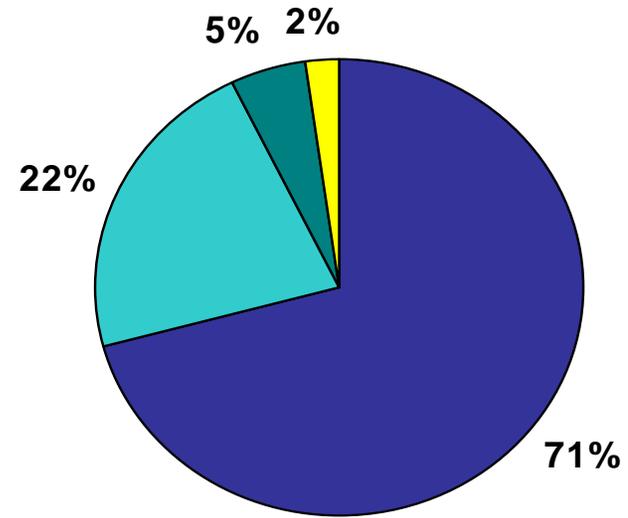
27 (~ 1%) refused both

CCRN Pilot Survey



Legend for COG Study: COG Study Non-COG Other Pt NA

COG Study



Legend for Who Consented: MD Nurse CRA Other Staff

Who Consented

Activated:
Closed:

Version Date: 2/5/2007

CHILDREN'S ONCOLOGY GROUP

ACCRN07

**Childhood Cancer Research Network: Protocol for the Registration and Consent Procedures of the
Children's Oncology Group**

For Groupwide, Intergroup, and International Participation

**This protocol is for research purposes only, and should not be copied, redistributed or used for any
other purpose.**

STUDY CHAIR

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CCRN: Group Wide Opening

- **Mandatory for all COG institutions**
- **\$50.00 credit per parent/patient approached**
- **Reminder to parents at 3 months**
- **Reconsent patients at age of majority**

CCRN: Group Wide Opening

April 2007: ACCRN07

- **Under PedCIRB review...**

Acknowledgements

CCRN Steering Committee:

Greg Reaman, MD, Chairman COG
Alan Gamis, M.D.
Anita Khayat, Ph.D.
Mark Krailo, Ph.D.
Louis Leone, Parent Advocate
Kim Nagel, RN, CRA
Andrew Olshan, Ph.D.
Les Robison, Ph.D.

Key Staff

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Tim Peters, MS
Judy Everett

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