EXECUTIVE SUMMARY

Members of the North American Association of Central Cancer Registries, Inc. (NAACCR) participate voluntarily in an annual call for data to develop a multi-registry, aggregated data resource for cancer surveillance and research. In June of 2017, NAACCR released the four volume monograph, Cancer in North America (CiNA): 2010-2014. This release of cancer incidence statistics for the United States is the 27th publication in the series and the 25th release that includes statistics for both Canada and the United States.

This year’s publication includes cancer incidence data for 50 states, the District of Columbia, Puerto Rico, California (excluding the Greater Bay area and Los Angeles), 4 SEER urban registries, and 12 Canadian registries. CiNA includes registry-specific data on stage at diagnosis, survival and delay adjusted estimates of counts and age-adjusted rates for selected cancers. These delay adjustment figures provide a projection of the likely volume of tardy reports of cancer for the time period and is recommended for use in assessing current cancer incidence trends.

Volume One presents the aggregated cancer incidence data, including pediatric cancer and cancer by stage at diagnosis, representing North America including data from the high quality registries in the United States and Canada. Age-adjusted cancer incidence rates for the Canadian and United States populations are provided standardized to the 2000 US, 1996 Canadian, and the world population standards. Combined United States data are presented by race and for Hispanic/Latino ethnicity. New for this year are registry specific delay adjusted rates in Volume One. Volume Two contains registry-specific cancer incidence rates by cancer site, sex, race, ethnicity and stage for all NAACCR members submitting data for inclusion in the monograph. Volume Three presents the registry-specific cancer death rates by cancer site, sex, race, and ethnicity. Volume Four provides cancer survival data for the US and Canada from 50 registries on more than 8 million cases diagnosed among North Americans between 2007 and 2013. All four volumes are available free of charge from the NAACCR website, along with population data, supporting appendices, and cancer rates age-adjusted to the US, Canadian and World population standards.

Note that this publication utilizes population estimates that are based upon the United States 2010 and Canada 2011 censuses.

In addition to publication of cancer statistics for the most recent five-year period, the CiNA data resource is used to create the CiNA+ Online database and NAACCR FastStats (graphic and tables by cancer sites, race/sex, race/ethnicity, age at diagnosis, sex, registry, and data type) for public queries regarding cancer incidence for the most recent five years. The CiNA data are also used to develop a discretionary research data set (CiNA Deluxe), including data from 1995 to 2014, to facilitate analytic studies conducted by epidemiologists and other qualified researchers. The data within this report are also available as an electronic reproduction of all cancer statistics reported in the CiNA monograph for use in SAS analytic software and a discretionary data set of the data in CiNA+ Online (named CiNA Plus in SEER*Stat) in SEER*Stat software for approved uses by NAACCR members. These preeminent cancer data resources are unparalleled in geographic scope, timeliness of statistics, and assurance of standardization of information and data quality across all contributors, with standard data quality metrics reported for all contributors.

We hope that Cancer in North America: 2010-2014, with the companion CiNA products and resources, facilitate studies of cancer burden, so that we are better able to identify and understand appropriate and important measures to control the myriad diseases within the cancer rubric. The cancer surveillance infrastructure in the U.S. and Canada has been orchestrated to meet these objectives.

This publication is made possible by the continuing efforts of the NAACCR member registries. High quality standardized cancer incidence data aggregated across the states, provinces, territories, and regions in North America is made possible by the dedication of our members to cancer surveillance.

The Editors would like to acknowledge the fine work and support of the National Cancer Institute, the National Center for Health Statistics and Statistics Canada for their assistance in developing this publication.

The Editors
June 2017
CANCER IN NORTH AMERICA: 2010-2014

VOLUME ONE: COMBINED CANCER INCIDENCE FOR THE UNITED STATES, CANADA AND NORTH AMERICA

A Publication of the North American Association of Central Cancer Registries, Inc. (NAACCR)

Editors:
Glenn Copeland, Michigan Cancer Surveillance Program
Andrew Lake, Information Management Services, Inc.
Rick Firth, Information Management Services, Inc.
Brad Wohler, Florida Cancer Data System
Xiao-Cheng Wu, Louisiana Tumor Registry
Maria J. Schymura, New York State Cancer Registry
Prithwish De, Ontario Cancer Registry at Cancer Care Ontario
Jim Hofferkamp, NAACCR, Inc.
Recinda Sherman, NAACCR Inc.
Betsy Kohler, NAACCR, Inc.

June 2017

The Editorial Subcommittee of the NAACCR Standing Committee, Data Use and Research Committee publishes this monograph. We are grateful to the National Cancer Institute, National Institutes of Health (NCI/NIH) for providing support for the production under Contract No. HHSN261200444001C/ADB Contract No. PC-44401. We acknowledge partial support of NAACCR staff by cooperative agreement U75/CCU52346-05 from the Centers for Disease Control and Prevention (CDC) and by the NCI/NIH Contract No. HHSN261200444001C/ADB Contract No. PC-44401. Its contents are solely the responsibility of the editors and do not necessarily represent the official view of CDC.
CINA PARTICIPANTS
2010-2014

SUGGESTED CITATION:
# TABLE OF CONTENTS

**SECTION I: Introduction and Technical Notes** ................................................................. I-1

**SECTION II: Top Five Most Commonly Diagnosed Cancers in North America**
   Top Five Most Commonly Diagnosed Cancers in North America .................................. II-1
   Top Five Most Commonly Diagnosed Cancers in the U.S. by Race/Ethnicity
      Males .................................................................................................................. II-2
      Females ............................................................................................................ II-3

**SECTION III: Average-annual Age-adjusted NAACCR Combined Cancer Incidence Rates**
   for the United States, Canada and North America

   Data Quality Indicators for the United States ........................................................... III-1
   Map: Registries included in U.S. Combined Incidence for All Races .......................... III-3
   Combined Registries, All Races (2000 U.S. and 1996 Canadian populations).......... III-4
   Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
      All Races, Males (2000 U.S. population) ......................................................... III-5
      All Races, Males (1996 Canadian population) ................................................. III-7
      All Races, Females (2000 U.S. population) ..................................................... III-9
      All Races, Females (1996 Canadian population) ............................................. III-11
   Map: Registries included in U.S. Combined Incidence for White ............................. III-13
   Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
      White, Males (2000 U.S. population) ................................................................ III-15
      White, Males (1996 Canadian population) ...................................................... III-17
      White, Females (2000 U.S. population) ............................................................. III-19
      White, Females (1996 Canadian population) ..................................................... III-21
   Map: Registries included in U.S. Combined Incidence for Black ............................... III-23
   Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
      Black, Males (2000 U.S. population) ................................................................. III-25
      Black, Males (1996 Canadian population) ....................................................... III-27
      Black, Females (2000 U.S. population) ............................................................. III-29
      Black, Females (1996 Canadian population) ..................................................... III-31
   Map: Registries included in U.S. Combined Incidence for Asian/Pacific Islander ...... III-33
   Combined Registries, Asian/Pacific Islander (2000 U.S. and 1996 Canadian populations)........ III-34
   Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
      Asian/Pacific Islander, Males (2000 U.S. population) .................................... III-35
      Asian/Pacific Islander, Males (1996 Canadian population) ............................. III-37
      Asian/Pacific Islander, Females (2000 U.S. population) .................................. III-39
      Asian/Pacific Islander, Females (1996 Canadian population) ......................... III-41
   Map: Selected CHSDA Counties included in U.S. Combined Incidence for
      American Indian/Alaskan Native ........................................................................ III-43
   Combined Registries, American Indian/Alaskan Native (2000 U.S. and 1996 Canadian populations) III-44
   Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
      American Indian/Alaskan Native, Males (2000 U.S. population) .................... III-45
      American Indian/Alaskan Native, Males (1996 Canadian population) ............. III-47
      American Indian/Alaskan Native, Females (2000 U.S. population) ................... III-49
      American Indian/Alaskan Native, Females (1996 Canadian population) .......... III-51

**Most Frequent Cancer Sites by IHS Region,**
   American Indian/Alaskan Native, Males (2000 U.S. population) ......................... III-53
   American Indian/Alaskan Native, Females (2000 U.S. population) ...................... III-55
   Map: Registries included in U.S. Combined Incidence for Hispanic/Latino, All Races III-57
   Combined Registries, Hispanic/Latino, All Races (2000 U.S. and 1996 Canadian populations) III-58
   Commonly Diagnosed Cancers, Incidence Rates by Registry,
      Hispanic/Latino, All Races, Males (2000 U.S. population) ............................. III-59
      Hispanic/Latina, All Races, Females (2000 U.S. population) .......................... III-63
Map: Registries included in U.S. Combined Incidence for Non-Hispanic White ..........................................................III-67
Combined Registries, Non-Hispanic White (2000 U.S. and 1996 Canadian populations) ..................................................III-68
Commonly Diagnosed Cancers, Incidence Rates by Registry,
  Non-Hispanic White, Males (2000 U.S. population) ........................................................................................................III-69
  Non-Hispanic White, Females (2000 U.S. population) ........................................................................................................III-73
Map: Registries included in U.S. Combined Incidence for Non-Hispanic Black .........................................................III-77
Combined Registries, Non-Hispanic Black (2000 U.S. and 1996 Canadian populations) ..................................................III-78
Commonly Diagnosed Cancers, Incidence Rates by Registry,
  Non-Hispanic Black, Males (2000 U.S. population) ........................................................................................................III-79
  Non-Hispanic Black, Females (2000 U.S. population) ........................................................................................................III-83
Data Quality Indicators for Canada ................................................................................................................................III-88
Map: Registries included in Canadian Combined Incidence for All Races ................................................................III-89
Combined Registries, All Races (2000 U.S. and 1996 Canadian populations) ..........................................................III-90
Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
  All Races, Males (2000 U.S. and 1996 Canadian populations) ......................................................................................III-91
  All Races, Females (2000 U.S. and 1996 Canadian populations) ......................................................................................III-92
Data Quality Indicators for North America .........................................................................................................................III-94
Map: Registries included in North America Combined Incidence for All Races ..........................................................III-95
Combined Registries, All Races (2000 U.S. and 1996 Canadian populations) ..........................................................III-96
Five Most Commonly Diagnosed Cancers, Incidence Rates by Registry,
  All Races, Males (2000 U.S. population) ..................................................................................................................III-97
  All Races, Males (1996 Canadian population) ..................................................................................................................III-99
  All Races, Females (2000 U.S. population) ..................................................................................................................III-101
  All Races, Females (1996 Canadian population) ..................................................................................................................III-103
Map: Registries included in U.S. Pediatric Cancer Incidence ..........................................................................................III-106
Age-specific Rates for the United States
  All Races, Males ......................................................................................................................................................III-107
  All Races, Females ................................................................................................................................................III-108
  White, Males ..................................................................................................................................................III-109
  White, Females ........................................................................................................................................III-110
  Black, Males ................................................................................................................................................III-111
  Black, Females ........................................................................................................................................III-112
  Asian/Pacific Islander, Males ............................................................................................................................III-113
  Asian/Pacific Islander, Females ..........................................................................................................................III-114
  American Indian/Alaskan Native, Males ..................................................................................................................III-115
  American Indian/Alaskan Native, Females ........................................................................................................III-116
  Hispanic/Latino, All Races, Males .........................................................................................................................III-117
  Hispanic/Latina, All Races, Females ....................................................................................................................III-118
  Non-Hispanic White, Males ..................................................................................................................................III-119
  Non-Hispanic White, Females ............................................................................................................................III-120
  Non-Hispanic Black, Males ..................................................................................................................................III-121
  Non-Hispanic Black, Females ................................................................................................................................III-122
Age-adjusted Rates (2000 U.S. and 1996 Canadian population) (Ages 0-14, Ages 0-19)
  All Races, Males ........................................................................................................................................III-123
  All Races, Females ................................................................................................................................................III-124
  White, Males ..................................................................................................................................................III-125
  White, Females ........................................................................................................................................III-126
  Black, Males ................................................................................................................................................III-127
  Black, Females ................................................................................................................................................III-128
  Asian/Pacific Islander, Males ............................................................................................................................III-129
  Asian/Pacific Islander, Females ..........................................................................................................................III-130
  American Indian/Alaskan Native, Males ..................................................................................................................III-131
  American Indian/Alaskan Native, Females ........................................................................................................III-132
  Hispanic/Latino, All Races, Males .......................................................................................................................III-133
  Hispanic/Latina, All Races, Females ...................................................................................................................III-134
  Non-Hispanic White, Males ..................................................................................................................................III-135
  Non-Hispanic White, Females ............................................................................................................................III-136
  Non-Hispanic Black, Males ..................................................................................................................................III-137
  Non-Hispanic Black, Females ................................................................................................................................III-138

Map: Registries included in Canadian Pediatric Cancer Incidence ........................................................................................III-140
Age-specific Rates for Canada
  All Races, Males ................................................................................................................................................III-141
  All Races, Females ................................................................................................................................................III-142

TABLE OF CONTENTS vii
Contents

Age-adjusted Rates (2000 U.S. and 1996 Canadian population) (Ages 0-14, Ages 0-19)
   All Races, Males ........................................................................ III-143
   All Races, Females ..................................................................... III-144
Map: Registries included in North American Pediatric Cancer Incidence .................................. III-146
Age-specific Rates for North America
   All Races, Males ........................................................................ III-147
   All Races, Females ..................................................................... III-148
Age-adjusted Rates (2000 U.S. and 1996 Canadian population) (Ages 0-14, Ages 0-19)
   All Races, Males ........................................................................ III-149
   All Races, Females ..................................................................... III-150

SECTION IV: Stage at Diagnosis by Age for Select Cancer Sites
   United States Combined Registries ................................................ IV-1
   Canada Combined Registries ......................................................... IV-3
   North America Combined Registries ............................................. IV-4

SECTION V: Average-annual Age-adjusted Cancer Incidence Observed and Delay Adjusted Counts
   and Rates by Race, Sex and Selected Sites, for the United States, Canada and North America
Map: Registries included in U.S. Combined Delay Adjusted Incidence for All Races ................... V-1
Combined Registries, All Races (2000 U.S. population) ............................................................. V-2
   All Races, Males (2000 U.S. population) ............................................................................. V-3
   All Races, Females (2000 U.S. population) ........................................................................... V-9
Map: Registries included in U.S. Combined Delay Adjusted Incidence for White ..................... V-15
Combined Registries, White (2000 U.S. population) ................................................................ V-16
   White, Males (2000 U.S. population) .................................................................................. V-17
   White, Females (2000 U.S. population) ............................................................................... V-23
Map: Registries included in U.S. Combined Delay Adjusted Incidence for Black ..................... V-29
Combined Registries, Black (2000 U.S. population) ................................................................ V-30
   Black, Males (2000 U.S. population) ................................................................................... V-31
   Black, Females (2000 U.S. population) ................................................................................ V-37
Map: Registries included in U.S. Combined Delay Adjusted Incidence for Asian/Pacific Islander V-43
Combined Registries, Asian/Pacific Islander (2000 U.S. population) ........................................ V-44
   Asian/Pacific Islander, Males (2000 U.S. population) ......................................................... V-45
   Asian/Pacific Islander, Females (2000 U.S. population) ...................................................... V-51
Map: Selected CHSDA Counties included in U.S. Combined Incidence for American Indian/Alaskan Native ................................................................. V-57
Combined Registries, American Indian/Alaskan Native (2000 U.S. population) ......................... V-58
   American Indian/Alaskan Native, Males (2000 U.S. population) by Region ......................... V-59
   American Indian/Alaskan Native, Females (2000 U.S. population) by Region ....................... V-60
Map: Registries included in U.S. Combined Delay Adjusted Incidence for Hispanic ................. V-61
Combined Registries, Hispanic (2000 U.S. population) ............................................................. V-62
   Hispanic, Males (2000 U.S. population) ............................................................................ V-63
   Hispanic, Females (2000 U.S. population) ......................................................................... V-69
Map: Registries included in U.S. Combined Delay Adjusted Incidence for Non-Hispanic White V-75
Combined Registries, Non-Hispanic White (2000 U.S. population) ............................................. V-76
   Non-Hispanic White, Males (2000 U.S. population) ............................................................. V-77
   Non-Hispanic White, Females (2000 U.S. population) ......................................................... V-83
Map: Registries included in U.S. Combined Delay Adjusted Incidence for Non-Hispanic Black V-89
Combined Registries, Non-Hispanic Black (2000 U.S. population) ........................................... V-90
   Non-Hispanic Black, Males (2000 U.S. population) ............................................................ V-91
   Non-Hispanic Black, Females (2000 U.S. population) ......................................................... V-97
Map: Registries included in Canadian Combined Delay Adjusted Incidence ......................... V-103
Combined Registries, All Races (2000 U.S. population) ............................................................. V-104
   All Races, Males (2000 U.S. population) ............................................................................. V-105
   All Races, Females (2000 U.S. population) ......................................................................... V-106
Map: Registries included in North American Combined Delay Adjusted Incidence ............. V-107
Combined Registries, All Races (2000 U.S. population) ............................................................ V-108

All Appendices are available on the NAACCR website:
https://www.naaccr.org/cancer-in-north-america-cina-volumes/#Appendices