**Introduction**

Cancer is the leading cause of disease-related death in the AYA population; among females, it is the most common disease-related cause of death, and among males it is second only to heart disease. In the AYA age group, only accidents, suicide, and homicide claim more lives than cancer.

Unlike improvements seen in younger and older age groups, survival rates for young people (AYAs) with some types of cancer have not improved in almost 30 years. Factors that may account for the lack of improved outcomes among AYAs include:

- Delayed diagnosis
- Limited understanding of the biology and etiology of the cancers in this population
- Low access to and participation in clinical trials
- Unique psychosocial and supportive care needs

**Purpose**

To examine cancer incidence patterns among adolescents and young adults (ages 15-39) in Massachusetts.

**Methods**

Cancer incidence data from the Massachusetts Cancer Registry for 2006-2010 were grouped into diagnostic categories using the AYA Site Recode ICD-03/WHCO Definition from the SEER website.

Percent distributions, age-specific rates and age-adjusted rates per 100,000 were calculated by cancer type, 5-year age groups, sex and race/ethnicity.

Massachusetts vs. national (SEER) rates were examined for major types of cancer.

Distributions by stage at diagnosis were examined for selected cancer types.

**Results**

In the period 2006-2010, a total of 8,261 cases of malignant cancer were diagnosed among adolescents and young adults aged 15-39 (3,076 males, 5,185 females). This means that an average of 5 adolescents and young adults were diagnosed with cancer each day in Massachusetts. Cancers in this age group represented 4.6% of all malignant cancers for all ages combined.

**Profile of Adolescents and Young Adults in Massachusetts**

In 2010, there were 2.2 million adolescents and young adults aged 15-39 in Massachusetts, representing approximately one-third (33.6%) of the total Massachusetts population. Females made up a slightly higher proportion of adolescents and young adults than males (50.4% compared with 49.6%) of the total AYA population.

**Average Annual Age-Adjusted Incidence Rates, Males Ages 15-39, 2006-2010**

**Summary**

- In Massachusetts, for the period 2006-2010, there were 8,261 cases of cancer diagnosed among AYAs aged 15-39, 5,185 (62.8%) among females, and 3,076 (37.2%) among males.
- Overall, age-adjusted rates are significantly higher for females than males (98.1 vs. 57.8 per 100,000), respectively.
- Top cancer types among males aged 15-39 were germ cell & trophoblastic (predominantly testicular), melanoma of skin, non-Hodgkin lymphoma, Hodgkin lymphoma, and thyroid.
- Top cancer types among females aged 15-49 were thyroid, invasive breast, melanoma of skin, cervix and uterus, and Hodgkin lymphoma.
- The distributions of cancer types change dramatically by 5-year age group and sex, reflecting the transition from pediatric to adult cancers. Among adolescents (15-19) the predominant types are lymphomas, germ cell tumors and leukemia, while young adults (ages 20-24) are increasingly diagnosed with carcinomas.
- Non-Hispanic whites have the highest risk of developing cancer during this phase of life.
- 63% of male and 60% of female colorectal cancers are diagnosed at late stages.
- Approximately 50% of female breast cancers are diagnosed at late stages.
- For all cancer types combined, incidence trends were stable for the period 2006-2010 for both males and females.

**Selected Resources For Young Adults with Cancer**

Young Adult Program at Jesse-Jordan Cancer Institute (YAP@DFCI) is part of an international initiative to recognize and address the unique circumstances related to lifestyle, work, school, family life and emotional development that young adults face when living with cancer.

Rahit R. Saxena MD, FACP, Tufts Medical Center, opened in January 2013, offers innovative services to meet the long-term follow up needs of AYA patients. Peer navigators provide resources to patients to tackle age-appropriate issues typically faced by all AYAs.

14-30 Connection www.14-30.org is a not-for-profit organization dedicated to motivating AYAs to take their health and mental health seriously, to take action when they notice changes in their health, and to be strong self-advocates when their instincts tell them something is wrong.

**References**

-National Cancer Institute, National Institutes of Health, A Guide to Adolescent and Young Adult Cancer. Last updated October 2013.