

## Declining Cancer Rates, Inclining Local Expertise: We Are Pointed in the Right Direction but Work Remains

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Each year, the American Cancer Society estimates cancer incidence and death rates and compiles data on a number of relevant cancer statistics. The last report provides more than a ray of optimism. In 2016–2017, cancer death rates over the last measured period fell 2.2%. This represents the greatest decline in any one-year period since statistics have been kept. Today's good news is the result of decades, if not centuries, of basic research, clinical trials and preventive strategies. Skilled scientists, dedicated healthcare providers, public health workers, educators and policy makers (certainly not from a single political party) deserve credit here. Even diligent parents and grandparents who have implored their children and grandchildren not to smoke have made a contribution! Many years of innovation and comprehensive care throughout the country has led to a 27% decline in cancer mortality over nearly three decades. This translates into nearly 3 million lives saved – approximately the population of Chicago.

What is the data from Rhode Island (RI)? Cancer incidence rates in both RI men and women, as well as cancer mortality rates, exceed the national averages. Most striking is the higher cancer incidence in RI women compared to the national average, 458.1/100,000 age-adjusted population versus 419.3/100,000 age-adjusted population. In women, this represents the third highest cancer incidence. Some of this is attributable to RI women having the highest incidence of bladder cancer and third highest incidence of lung cancer in the United States. The difference in per capita mortality between the state and national average for both men and women is much less pronounced.

Manuscripts from the current edition of the *Rhode Island Medical Journal* (RIMJ) exhibit the expertise needed to make a difference in providing excellent life-saving care. These articles highlight the expertise of our Brown University/Lifespan colleagues as they address selected common and problematic oncologic and hematologic illnesses. We have also included a description of the newly established Sickle Cell Disease Center since many caregivers in the Lifespan Cancer Institute minister to patients with this challenging disease as well.

In their article, "Current Indications for Consideration of Evaluation for Hereditary Cancer Predisposition Syndromes and How They Can Change Management," **DR. LAUREN J. MASSINGHAM** and **DR. ANDRE DE SOUZA** review the dynamic evolution of hereditary cancer predisposition

syndromes. The authors estimate that 5–10% of cancers are due to hereditary predisposition with substantial association with the more common malignancies of breast, prostate, ovarian and colon cancers. These malignancies are commonly understood as "hereditary." Less known is the inter-relationship among the malignancies; for example, the increased risk in men to develop more virulent forms of prostate cancer if they carry a BRCA2 gene. This possibility may have been suggested by a family history of breast or ovarian cancer. In addition, the inclusion of pancreatic cancer, an often lethal cancer, as a malignancy within the hereditary predisposition syndromes is highlighted.

The authors point out that a number of institutions provide genetic counseling for patients and family members. But as the indications for genetic counseling and testing expand, will the RI medical community be able to meet the needs? Currently, RI does not license genetic counselors while 25 states do, including neighboring states of Connecticut and Massachusetts. Licensure ensures that the licensees have the minimal degree of competency necessary to ensure that public health, safety and/or welfare are protected. Also, licensing can influence reimbursement of services subsequently impacting availability. Bills have been introduced in the RI state legislature without passage. Given the increasing complexity of cancer genetics and the expanding indication for counseling, we urge our legislative bodies to reassess this issue.

**DR. ROBERT SOKOLIC**, in his article, "The Sickle Cell Disease Multidisciplinary Clinic (SCDMDC) at the Lifespan Cancer Institute," provides a detailed description of the mission of the clinic. Prior to the SCDMDC inception in late 2017, sickle cell patients transitioning into adulthood were faced with a loss of the comprehensive care as they moved from the Pediatric SCD program at Hasbro's Tomorrow Fund Clinic. While the estimated number of SCD patients in RI is comparatively low, (150–200), their medical needs are complex and "resource-intensive." Adding to the complexity are the social vulnerabilities of this group of patients. Dr. Sokolic describes three vital components of SCDMDC: patient-centered care, multidisciplinary delivery and high-touch frequency. While all valued aspects of care delivery, it is the high-touch care that has the potential to be most impactful. It is through frequent contact with caring personnel that relationships and trust are gained with the SCD

patient. This will encourage patients to participate in health maintenance strategies and interventions that will most significantly affect immediate and long-term health.

In their contribution, “Non-Small Cell Lung Cancer in the Era of Personalized Medicine: Molecular Tests that Matter,” **DR. CHRISTOPHER DEL PRETE** and **DR. CHRISTOPHER G. AZZOLI** discuss precision medicine influencing therapeutics in lung cancer, which continues to be the leading cause of cancer death in men and women. In 2003, gefitinib, an epidermal growth factor receptor tyrosine kinase inhibitor, became the first targeted therapy approved for the treatment of non-small cell lung cancer (NSCLCA). Since that time, more than 20 new agents, in the categories of targeted therapy and immunotherapy have gained approval for treatment of metastatic NSCLCA. The authors provide a roadmap to personalized management in order to select the best agent based on cancer cell characteristics of an individual’s lung malignancy. In spite of the therapeutic evolution leading to improved survival statistics in NSCLCA, an ounce of prevention should remain one of our priorities as we counsel our patients and children of the harm of tobacco use.

The Nobel Prize for Medicine or Physiology 2018 was awarded to James P. Allison of the University of Texas MD Anderson Cancer Center and Tasuku Honjo of Kyoto University for their discovery of therapies that inhibit negative immune regulation. The medications which were based upon this foundational research inhibit CTLA-4 and PD-1 checkpoint proteins, enabling T cells to target and attack cancerous cells. **DR. ANDREW HSU**, **DR. LAUREN MENDELSON**, and **DR. KHALDOUN ALMHANNA** in their article, “Immune Checkpoint Inhibitors in the Treatment of Gastrointestinal Malignancies: A Review of Current and Future Therapies,” remind us of incremental advancements of cancer therapy. While immunotherapy provides benefit to selected patients with gastrointestinal malignancies, the authors note its limited effectiveness, perhaps due to the immunosuppressive tumor cells microenvironment. They point out future directions of trials combining therapies to enhance the immune response. Trials like these often start as Phase I trials with some being offered locally via the planned Phase 1 therapy clinics soon to be established at The Miriam and Rhode Island Hospitals under the auspices of the Lifespan Cancer Institute.

Two contributions provide us with concise reviews of two common malignancies, acute myeloid leukemia (AML) and prostate cancer. **DR. ARI PELCOVITS** and **DR. RABIN NIROULA** in their contribution, “Acute Myeloid Leukemia: A Review,” provide insight into the complex heterogeneity of AML. No longer is diagnosis and treatment based solely on the appearance of myeloblasts in the microscopic assessment of the peripheral blood and bone marrow. Genomic signatures directing therapy require highly specialized care. At Rhode Island Hospital, leukemia patients are managed by hematology malignancy specialists. Inpatient care is on a dedicated leukemia service with care transitioned to a leukemia outpatient care team.

The annual RI incidence of prostate cancer is 104 per 100,000 men. In spite of fluctuations in PSA screening recommendations, prostate cancer remains the most common non-cutaneous malignancy in men. In “Prostate Cancer Therapeutics and Their Complications: A Primer for the Primary Care Provider,” **DR. ZACHARY BROWNLEE**, **DR. ANDRE DE SOUZA**, **DR. PAUL P. KOFFER**, **DR. THOMAS A. DIPETRILLO** and **DR. ANTHONY E. MEGA** point out the interplay between prostate cancer treatment and a multitude of general health issues such as osteoporosis, cardiovascular disease and diabetes. The team approach of care is adopted at the Genitourinary Cancer Multidisciplinary Clinic at Lifespan Cancer Institute. At this multidisciplinary clinic at The Miriam Hospital, prostate cancer patients meet a team of providers, including urology, radiation oncology, medical oncology, psychiatry, genetics, Phase I research team, sexual health experts combined with support from social work, nurse navigation, survivorship nursing, and nutrition. Care plans are developed and shared with the patient’s primary care provider to maintain health, wellness and quality of life for the patient.

In addition, **DR. RANI CHUDASAMA** and **DR. PETER BARTH**, in their contribution, “Risk Stratification of Precursors to Multiple Myeloma in 2020,” point out the significant advances in the management of plasma cell disorders, attributed primarily to novel myeloma-directed therapies as well as improved imaging techniques, analysis of the genetic evolution of plasma cell disorders (PCDs), and clinical trials exploring the treatment of pre-symptomatic stages of PCDs. In their article, they explore recent advances in the risk stratification of monoclonal gammopathy of undetermined significance (MGUS), smoldering multiple myeloma (SMM), and multiple myeloma.

The official state motto of Rhode Island is simply “Hope.” In our opinion, the authors of articles in this issue have provided us the rays of optimism that embody hope in the delivery of cancer care in our state. Of note, four of the authors are trainees from the Brown hematology/oncology fellowship program and one trainee is from the radiation oncology training program. Scholarly commitment from young professionals adds to the hope.

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