

Revisiting Cancer Care in Eastern North Carolina: 2023 Update

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Since 2002, when Dr. William Bobzien first provided insight into the challenges of providing oncology care in Eastern North Carolina, we have made significant improvements. However, we still face challenges, many of which are related to the ongoing socioeconomic issues of the citizens of our region.

Introduction

Eastern North Carolina (ENC) is a large catchment area of 29 rural counties that extends from the Virginia border to the South Carolina border and from Interstate 95 in the West to the barrier island of Hatteras in the East. The vastness of this rural area, along with the low socioeconomic status of many of our citizens, makes health care—particularly cancer care in ENC—extremely challenging. In a *NCMJ* editorial in 2002, Dr. William Bobzien described the early challenges faced by Drs. Spencer and Mary Raab and Athanasius Anagnostou in organizing state-of-the-art cancer care in the region with the initiation of the ECU School of Medicine 30 years ago [1]. Despite a number of successes since that time, numerous challenges still exist. Roads have improved but transportation to clinics remains an issue for many. Recruiting providers to live in a rural area continues to be difficult, as there are many competitive employment opportunities in urban centers. Late presentations of cancer are still common.

Challenges

The Hematology Oncology Division at ECU has met the challenges of providing cancer care to this region by creating smaller regional outpatient clinics that link to the main ECU Health Medical Center, a “hub and spoke” model of care. In addition, several private oncology practices have been established throughout the region. Despite this network, only slightly more than one-third of ENC counties have oncology care accessible within their borders. The high number of patients who are uninsured or underinsured puts care out of reach in oncology private practices. It is estimated that of the 600,000 individuals who will benefit from Medicaid expansion, 100,000 live in our region [2]. The lack of insurance and other resources among these individuals is further stressed by the need to travel long distances in ENC to obtain appropriate cancer care.

In ENC, cancer care occurs within a complex network of private and academic practice partners. The region is home to a tertiary academic medical center and health care system, as well as several regional medical centers and clinics. Many complex oncology patients’ needs surpass availability of resources or specialty services available at rural medical centers, necessitating transfers of care or the implementation of a shared care plan between oncology providers. Care coordination is complex, consisting of multimodal specialty services and the need for consideration of patients’ barriers to care. Some regional clinics have radiation oncology facilities for treatment while others do not. Often, specialty services are not situated in the same location. Patients must travel to ECU Health Medical Center for thoracic surgery for lung cancer, diagnostic interventional bronchoscopy biopsies by pulmonary medicine specialists, ENT specialists, and CT-guided tissue biopsies, as well as advanced therapeutic procedures conducted by interventional radiologists. In ENC, care coordination occurs tirelessly through teams that include oncology nurse and social work navigators. Overall, the top barriers to care—financial, transportation, and distance traveled for care—require time-intensive care coordination.

Workforce Considerations

Throughout the last 45 years, difficulties with recruitment and retention of adequate numbers of medical, surgical, and radiation oncologists have further complicated the provision of cancer care in ENC. This trend continues at a time when ECU Health Cancer Center has seen a 7% increase in total visits for patients in the ambulatory cancer clinics from 2021 to the present. Furthermore, the number of patients who are classified as “new” to our center has increased by over 25% in the previous two fiscal years, demonstrating a substantial increase in the need for providers and cancer care resources (internal data, ECU Health Cancer Center). Cancer is becoming more prevalent as our population ages and we see growth in retirement communities in the coastal

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areas of our region. In addition, once diagnosed, cancer patients are surviving longer. The shortage of providers for this growing population is not only limited to physicians and advanced practice providers (APPs). The nursing shortage is not new, but has come into the spotlight since the COVID-19 pandemic [3]. The prevalence of travel nurses and the phenomenon of organizations vying for nurses by offering increased wages and incentives has increased exponentially [3], creating a vicious cycle between the availability and affordability of nursing staff by organizations.

In 2019, COVID-19 further stressed the cancer care network in ENC, and the need to reimagine care for outpatient clinics has extended beyond the pandemic. Telemedicine was used to provide local and regional care to areas with vacancies and areas where COVID-19 closures threatened cancer care. A hybrid model was created, where a provider will work a few days in the region and then the remaining days at the medical center. More candidates have applied for these positions than when a single-location position has been posted. A Service Line APP model was also developed to assist at the medical center and then deploy to regional sites to cover provider vacations, sickness, conferences, and emergencies.

While telehealth does not replace in-person cancer care, it proved to be an option for a population that also experienced issues with transportation. Unfortunately, for some people technology proved to be as much of a barrier to care as distance had been previously.

Improvements in Care Delivery and Screenings

Cancer screening has always been a challenge in ENC, which has high rates of smoking related to the long economic history of tobacco throughout the region. Lung cancer screening rates, while robust, have historically not been proportional to the number of eligible smokers in ENC. During the COVID-19 pandemic, low-dose CT scans for lung cancer screening at ECU Health Medical Center and the regional affiliates went to zero. In 2023 they were slow to return to pre-pandemic rates (internal data, ECU Health Cancer Committee statistics).

Screenings, which are essential to identifying individuals with early-stage cancer and ensuring the best chance of cure in many cancers, were avoided by many during the pandemic. Because of this, it is anticipated that we will still see many patients present with advanced disease in the near future, leading to an increase in mortality until we reach and then surpass our pre-pandemic cancer screening efforts.

ECU Health has instituted several initiatives to improve cancer care delivery for our population, including a Symptom Management Clinic with a full-time APP at ECU Health Medical Center for patients experiencing complications, either from the malignancy itself or from the cancer treatment. Patients can be treated at the medical center to avoid having to seek care in the emergency department, reducing unnecessary inpatient admissions for issues that

could be effectively managed in the outpatient setting. Our regional clinics also see patients as walk-ins to achieve the same goals.

Cancer care delivery models have evolved over time and will continue to require changes in the post-pandemic era. Telehealth has supplemented on-site delivery of cancer care but has its limitations. In 2017, the cancer incidence rate for our 29-county service area averaged 467.5 per 100,000. During 2021, it decreased to 441.8 per 100,000, suggesting fewer diagnoses due to fewer screenings during the peak of COVID-19 when people were reluctant to seek out medical care [4]. Similarly, the reported cancer mortality rate for our service area in 2017 was 174.3 per 100,000. In 2021, that rate dropped to 165.72 per 100,000, indicating that those who were receiving treatment were experiencing better outcomes. Within the ECU Health network we have focused on trying to increase cancer screenings back to our pre-pandemic levels. Our mammography screening volumes increased by 31% in 2023. Approximately 6%-7% of all screening mammograms resulted in the need for additional imaging or follow-up (imaging, biopsy, or surgical consultation). The highest number of follow-ups was seen at ECU Health hospitals in the following counties: Halifax, Edgecombe, Hertford, Dare, and Lenoir. In 2023, the greatest number of mammograms were performed in the 50-59 and 60-65 age groups.

At ECU Health, outreach events resumed across the service line in 2022 and 2023, hosting events focusing on prevention, early detection, and screening. Events, which include cancer screenings (breast, prostate, skin, colon, and lung for uninsured populations) and awareness and prevention events rose from 186 in 2022 to 218 in 2023. People served were 9,577 in 2022 and 13,277 in 2023, a 39% increase. (All data internal to ECU Health.)

Concluding Comments

Cancer care will continue to require changes in delivery models as new advances in care occur with associated barriers to implementation of that care [5, 6]. Cancer will be more prevalent in rural areas with an aging population as continued retiree migration brings more risk factors and increased diagnosis of early cancers thanks to successful screening efforts. Despite the challenges we face here in ENC, we do see encouraging trends in improved overall survival and reduction in mortality.

Dr. Bobzien's 2002 article summary was prescient when he noted:

"In summary, cancer care in [E]astern North Carolina has made great strides over the last generation. Cancer care is about to become an even more exciting specialty holding greater promise for treatment of our patients. With effective input from government agencies, increased collegiality, attention to clinical trials and assuring ready access to quality care to all our fellow citizens, the person who writes in 2025 will be able to describe and celebrate the successes and progress to equal those of the last 25 years." NCMJ

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References

1. Bobzien WF. Cancer care in Eastern North Carolina, 1975-2000. *N C Med J*. 2001;62 (Suppl):S46-S50.
2. What Expanding Medicaid Would Mean for North Carolina. North Carolina Department of Health and Human Services. Published June 9, 2022. Accessed November 27, 2023. <https://www.ncdhhs.gov/blog/2022/06/09/what-expanding-medicaid-would-mean-north-carolina>
3. Yang, YT, Mason DM. COVID-19's Impact On Nursing Shortages, The Rise Of Travel Nurses, And Price Gouging. *Health Affairs*. Published January 28, 2022. Accessed November 27, 2023. <https://www.healthaffairs.org/content/forefront/covid-19-s-impact-nursing-shortages-rise-travel-nurses-and-price-gouging>
4. Cancer Incidence in North Carolina 2017. NC State Center for Health Statistics. NCDHHS Division of Public Health. Updated May 4, 2021. Accessed November 27, 2023. <https://schs.dph.ncdhhs.gov/data/cancer/incidence/2017.htm>
5. AACR Cancer Progress Report. American Association for Cancer Research. Accessed November 27, 2023. <https://www.cancerprogressreport.org/Pages/default.aspx>
6. *Rural-Urban Disparities in Cancer*. National Cancer Institute. Accessed November 27, 2023. <https://gis.cancer.gov/mapstory/rural-urban/index.html>