

The Cancer Care Workforce in Nebraska, 2008-2012^{Revised}

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SUMMARY

Although cancer is the leading cause of death in Nebraska, the adequacy of Nebraska's cancer care workforce to care for the cancer population is unknown. Therefore, we used workforce survey data for 2008-2012 from the Health Professions Tracking Service to analyze the cancer care workforce supply in Nebraska. We found that from 2008 to 2012, the cancer care workforce for adults outpaced cancer prevalence. We outline several policy options to improve Nebraska's cancer care workforce capacity, and we consider the effect the Affordable Care Act may have on Nebraska's cancer care workforce.

Introduction

Cancer is the most common cause of death in Nebraska, even surpassing heart disease.^{1,2} In 2012 in Nebraska, 36,858 persons were living with cancer, and 7,639 new cases of cancer were diagnosed.³ Nebraska's cancer incidence rate was 4.56 per 1,000 population in 2010.⁴ The economic burden of cancer for Nebraska is estimated at \$1.53 billion per year.⁵

The Affordable Care Act (ACA) provides enhanced access to care for cancer patients, which could potentially lead to an increased demand for services.⁶ We are not aware of any information on the current cancer care workforce supply in Nebraska. Therefore, this report analyzes the most recent 5-year trend (2008-2012) in Nebraska's cancer care workforce.

Data Sources

We used workforce survey data for 2008-2012 from the Health Professions Tracking Service (HPTS) at the University of Nebraska Medical Center. Annually, the HPTS surveys health professionals who have previously reported a practice location in Nebraska, who are newly licensed in Nebraska, or who have a Nebraska address but whose practice information is unknown.⁷ We defined the cancer care workforce as those physicians, nurse practitioners (NPs), and physician assistants (PAs) who reported their primary spe-

cialty or practice specialty as oncology, hematology, hematology/oncology, radiation oncology, pediatric hematology/oncology, surgical oncology, gynecological oncology, or musculoskeletal oncology. We also included practitioners who reported working in a cancer center or an oncology center, to ensure that our estimate of the cancer care workforce in Nebraska was accurate. Only those practitioners with a primary location in Nebraska were included in the total number of practitioners in Nebraska. Practitioners who were employed in a federal institution (such as the Veterans Administration) were excluded from the study. We used the USDA Business and Industry Loan Program definition of urban and rural counties, which classifies Douglas, Lancaster, and Sarpy Counties as urban counties and all other Nebraska counties as rural counties. Full-time equivalencies (FTEs) for the practitioners were calculated from the weekly working hours spent in clinical care at all practice locations of practitioners in Nebraska, which was obtained from the HPTS data and divided by 40 hours, the typical work week of a full-time employee. Moreover, the average weekly working hours for the practitioners was also calculated by dividing the total hours of all practitioners at all locations by the total number of practitioners. The time spent in administrative work and research was excluded from the FTE and average weekly hours calculations. Detailed data on the oncology physician workforce is available in the Appendix. Population data for Nebraska for 2008-2011 and a projected population estimate for 2012 was obtained

Contributing Organizations



College of Public Health

Health Professions
Tracking Service

College of Medicine

from the US Census Bureau.⁸ Cancer prevalence data was obtained from the Nebraska Cancer Registry at the Nebraska Department of Health and Human Services.³

Results

Demographic Trends in the Cancer Care Workforce

From 2008 to 2012, there was a 3.3% increase in the number of physicians, a 31.6% increase in the number of PAs, and a 37.0% increase in the number of NPs (Exhibit 1). Among physicians, 38.9% reported more than 40 hours of clinical time and thus accounted for more than 1 FTE. As a result, the numbers of physician FTEs are more than the total physician count. In addition, physicians worked on average more than 40 hours per week (42.3 hours), and PAs and NPs worked on average less than 40 hours per week (34.5 and 37.1 hours per week, respectively). There was an 11.1% increase in the number of physicians older than 60 years and a nearly 15% increase in physicians younger than 45 years. Most physicians, PAs, and NPs reported working in urban areas.

Trends in Adult and Pediatric Cancer Physicians per 1,000 Nebraskans with Cancer

From 2008 to 2012, the number of adult cancer physicians per 1,000 adult Nebraskans with cancer increased by 24.7%. However, the number of pediatric cancer physicians per 1,000 Nebraska children with cancer decreased by 1.2% (Exhibit 2).

Cancer Care Workforce Specialties

The self-reported cancer physician specialties in Nebraska in 2012 included hematology/oncology (41.2%), medical oncology (27.7%), radiation oncology (13.6%), surgical oncology (6.2%), pediatric hematology/oncology (5.7%), gynecological oncology (2.8%), pediatric oncology (2.3%), and musculoskeletal oncology (0.6%) (Exhibit 3).

The self-reported practice specialties of NPs in Nebraska in 2012 were oncology (88.9%) and pediatric oncology (11.1%) (Exhibit 4).

The self-reported practice specialties of PAs in Nebraska in 2012 were hematology/oncology (70.8%), oncology (25.0%), and radiation oncology (4.2%) (Exhibit 5).

Policy Implications

To effectively meet the needs of cancer patients, policymakers and legislators should consider a range of policies based on the goals of the state cancer plan developed by the Nebraska Cancer Coalition: emphasize prevention to reduce the risk and burden of cancer, address the public health requirements of cancer survivors, achieve health equity in cancer prevention and treatment, promote cancer screening and early detection programs, and increase access to cancer care.⁵ In addition to these goals, the following focus areas recommended by the American Society of Clinical Oncology should be considered.

Team-Based Cancer Care

High quality cancer care is achieved through the collaborative effort of a team of health care professionals.^{9,10} The team should include all clinicians involved in a patient's cancer treatment, along with professionals providing psychosocial support and pain management. To better enable team-based care, the reimbursement system should be transformed to encourage all members of the team to use their abilities to the full extent of their training. New models of payment such as bundled payments, accountable care organizations, and oncology patient-centered medical homes address the reimbursement obstacles involved in collaborative care. Many academic institutions offer interprofessional education that prepares health professionals for working in teams and interdisciplinary environments.¹⁰

Workforce Development

Oncology recruiting efforts should be increased. The National Cancer Institute (NCI) CURE (Continuing Umbrella of Research Experiences) Program exposes minority students to the profession of oncology.¹¹ Academic cancer centers could also engage in promotional activities by providing speakers for school children.

(continued on page 5)

Exhibit 1. Demographic Trends in the Cancer Care Workforce, Nebraska 2008-2012

Characteristic	Physicians		Physician Assistants		Nurse Practitioners		Total	
	2012	% change since 2008	2012	% change since 2008	2012	% change since 2008	2012	% change since 2008
Number of Active Clinicians								
Count (#)	126	+3.3	25	+31.6	37	+37.0	188	+11.9
Number of providers per 1,000 Nebraskans with cancer	3.4	+25.3	0.7	+58.1	1.0	+66.7	5.1	+35.6
Work Hours								
Total hours worked in an average week	5,329	+0.8	862	+7.2	1,373	+16.2	7,564	+3.8
Average hours worked per provider per week	42.3	-2.6	34.5	-18.5	37.1	-15.2	40.2	-7.2
Age Group (%)								
< 45 years	37	+14.6	76	+35.7	54	+17.7	46	+14.7
45–60 years	47	-6.4	20	0	32	+20.0	40	+1.3
60+ years	16	+11.1	4	*	14	*	14	+44.4
Rural-Urban Practice Location (%)								
Rural	27	+4.8	20	+400.0	19	+16.7	18	+21.4
Urban	83	+3.0	80	+11.1	81	+42.9	82	+10.0

Data Source: UNMC Health Professions Tracking Service, 2008-2012.

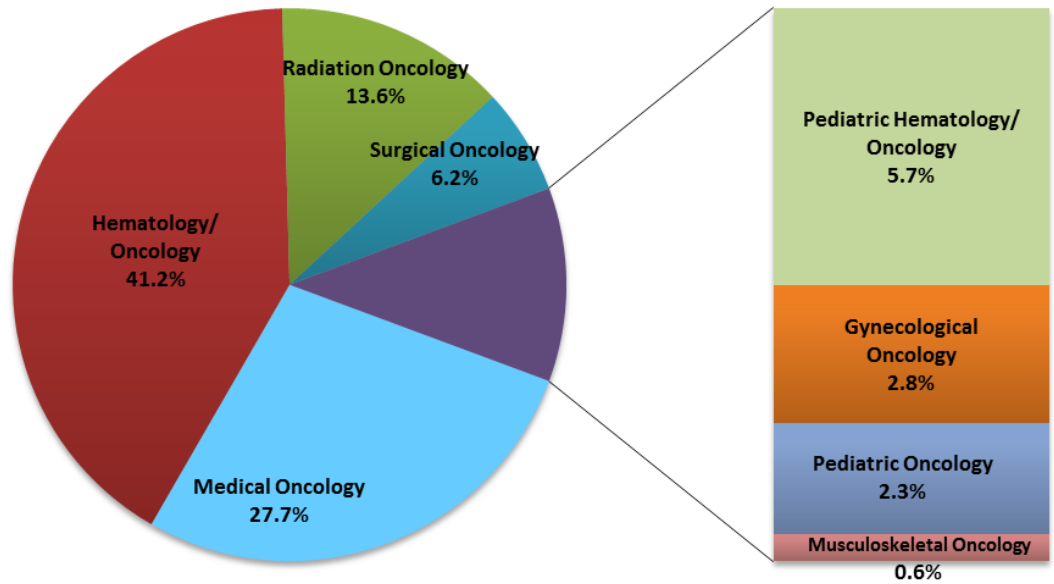
*In 2008, there were no providers aged 60+ years; therefore, we were unable to calculate the percent change.

Exhibit 2. Trends in the Number and Hours Worked of Adult and Pediatric Cancer Care Physicians, Nebraska 2008-2012

	Adult Cancer Care Physicians		Pediatric Cancer Care Physicians	
	2012	% change since 2008	2012	% change since 2008
Number of physicians	116	+2.7	10	+9.0
Number of physicians per 1,000 Nebraskans with cancer	3.2	+24.7	24.0	-1.2
Total hours worked by all cancer care physicians in an average week	4,970	+2.9	359	-23.6
Average hours worked per physician per week	42.8	+0.3	35.9	-31.3

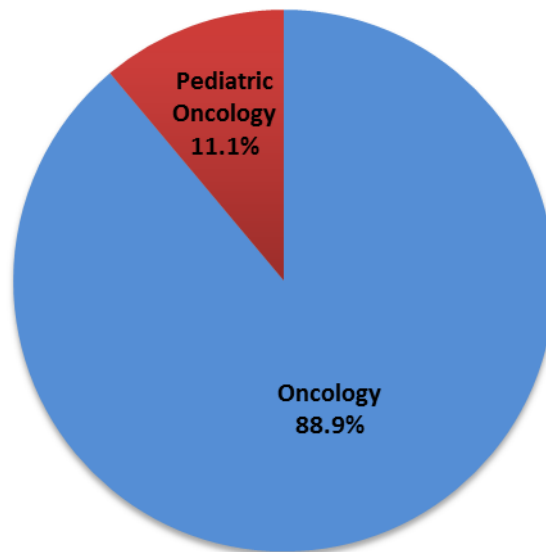
Data Source: UNMC Health Professions Tracking Service, 2008-2012.

Exhibit 3. Self-Reported Specialties of Physicians, Nebraska 2012



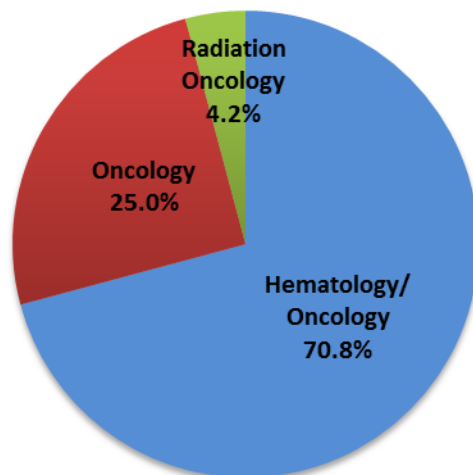
Data Source: UNMC Health Professions Tracking Service, 2012.

Exhibit 4. Self-Reported Specialties of Nurse Practitioners, Nebraska 2012



Data Source: UNMC Health Professions Tracking Service, 2012.

Exhibit 5. Self-Reported Specialties of Physician Assistants, Nebraska 2012



Data Source: UNMC Health Professions Tracking Service, 2012.

Policy Implications (cont.)

Workforce Development (cont.)

Increased education and training options and incentives for those who choose a career in oncology could be implemented.¹² Currently, the NCI provides up to \$70,000 in educational loans for physicians who pursue an oncology specialty. Retaining those already in the workforce through salary and other benefits is also an essential component of workforce development. Another solution through which patients could have easier access to care would be engaging a community oncologist who would be able to guide and refer patients to appropriate clinics or hospitals depending on the patient's condition and needs.¹¹

The Role of NPs and PAs

There are numerous areas of the state that are without a practicing oncologist. One solution may be to identify an NP or a PA who could provide routine supportive care to cancer patients after therapy was administered in a cancer center or oncology office in a nearby community. Increasing the use of NPs and PAs in managing routine problems, under the supervision of an oncologist, could also significantly reduce the burden on physicians.¹¹ NPs and PAs could be integrated into oncology services and offered more training specific to supportive cancer care.^{13,14} Studies have shown that physicians who use NPs and PAs as part of a collaborative cancer care team are able to care for more patients than those who do not.^{10,12}

Involving Primary Care Physicians

Primary care physicians (PCPs) could play a role in providing care and monitoring cancer survivors, thereby alleviating the burden on oncologists.^{9,12} Since PCPs are often a patient's first point of contact in the health care system, they play a pivotal role in cancer care as they diagnose cancer and provide appropriate referrals to oncologists. PCPs can be educated about different clinical trials and can support the recruitment of appropriate patients. PCPs also engage in health promotion, counseling, disease prevention, and education if the patient presents with multiple chronic conditions. A patient's PCP should be consulted during cancer treatment because ongoing treatment for other conditions may be affected by cancer treatment.¹⁰ One of the major constraints, however, in involving PCPs in the cancer care team is the ongoing shortage and increasing work burden of PCPs, which could limit their ability to participate in cancer care.^{9,12}

Use of Survivor Clinics, Palliative and Hospice Care, and the Medical Home Model

The needs of cancer patients and those of cancer survivors are complex and long term, sometimes lifelong.¹⁵ Academic cancer centers have established survivor clinics that are staffed by NPs and PAs, providing expert patient care and reducing the time and work demands on oncologists. Survivor clinics could also support family caregivers with medical advice to provide quality care.^{11,12}

Promoting and increasing the use of palliative and hospice care among terminally ill patients¹² and involving NPs in providing such care could reduce patient visits to oncologists and thereby reduce patient care burden on providers.¹⁴ In addition, the concept of a medical home has been explored as a model of care for patients with chronic diseases. In this model, care is provided by a team of providers who are reimbursed with an upfront fee and higher reimbursement for additional episodes of care. Such a model could also be tried in oncology care.^{9,11}

Psychosocial Support for Cancer Patients

Psychosocial support is an important part of high-quality cancer care. Caregivers such as social workers, psychologists, psychiatrists, and chaplains can be members of cancer care teams who provide psychosocial support that is well coordinated with medical care. Social workers help cancer patients to cope with their diagnosis, overcome their stress, make sound decisions for a treatment plan, and adapt to living daily life with cancer. They can also educate patients about palliative or hospice care and guide family members and caregivers on patient care. Psychologists can provide psychotherapy and use strategies such as behavior modification interventions to control the grief and depression arising from the disease. Psychiatrists can treat mental disorders arising due to the disease, and chaplains can meet the patients' spiritual needs. Studies have shown that patients whose cancer care team supports their spiritual needs have better quality of life than those whose teams do not.¹⁰

Use of Information Technology

Effective use of electronic health records (EHRs) may improve the efficiency of care provided, decrease the administrative burden in cancer centers, and expedite the process of care. Use of e-mail, online portals, and electronic treatment plans will streamline paperwork and reduce practitioner burden.^{11,12} EHR use also benefits practitioners

monetarily, because the Health Information Technology for Economic and Clinical Health Act allows practitioners who adopt and display meaningful use of EHRs in their practice to qualify for extra Medicare and Medicaid payments.¹⁶ Use of telemedicine should also be promoted, which would ensure access to cancer care for patients living in rural and underserved areas. However, there are barriers to using telemedicine. For example, Medicare and Medicaid both restrict reimbursement for telehealth services based on patient population, clinician, services provided, and site of care. Professional licensure may also present a barrier as clinicians must be licensed by the state in which they practice, limiting the delivery of telehealth services across state lines. These barriers will have to be addressed.¹⁰

Conclusion

The ACA impacts cancer patients and providers in Nebraska in a variety of ways. Provisions already in place have mandated that cancer screening services be provided without cost-sharing. Starting January 1, 2014, several health insurance reforms will be especially beneficial to cancer patients. Insurance companies will not be allowed to deny coverage based on health status or preexisting conditions (eg, cancer). The ACA also bans annual and lifetime caps on insurance coverage and includes a provision that cancer patients cannot be excluded from health insurance coverage if they were participating in a clinical trial.⁶ This enhanced access to care for cancer patients has the potential to impact the demand for cancer services and therefore increase the demand for health care workers specialized in cancer care.¹² The findings in this report may be subject to change based on the uptake of insurance in Nebraska. It is thus important to consider certain policy options to address the supply of cancer care workforce. The recommendations of this report could be implemented in full or in part to address the issue.

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Acknowledgements

We thank Nebraska Cancer Coalition members Sara Comstock and June Ryan for helpful comments, and we thank Sue Nardie for editing this report.

Funding Information

This policy brief was developed with support from the UNMC College of Public Health.

Suggested Citation

Chandak A, Loberiza FR, Deras M, Armitage JO, Vose JM, Stimpson JP. *The Cancer Care Workforce in Nebraska, 2008-2012*. Omaha, NE: UNMC Center for Health Policy; 2014.

Conflict of Interest

None.

Disclaimer

The views expressed herein are those of the authors and do not necessarily reflect the views of collaborating organizations or funders, or of the Regents of the University of Nebraska.

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Appendix. Detailed Data on Oncology Physicians

Table 1. Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	13		122
2009	9	10	119
2010	7	14	124
2011	6	9	126
2012		6	126

Table 2. Medical Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	2		14
2009	2	1	13
2010	1	0	11
2011	2	1	11
2012		1	10

Table 3. Hematology/Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	4		52
2009	4	4	52
2010	4	9	57
2011	5	5	58
2012		3	56

Table 4. Radiation Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	6		25
2009	1	2	21
2010	2	4	24
2011	1	1	23
2012		1	23

Table 5. Gynecological Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	2		5
2009	0	1	4
2010	0	0	4
2011	0	0	4
2012		1	5

Table 6. Pediatric Hematology/Oncology Physicians Who Left or Joined the Workforce, Nebraska 2008-2012

Year	Number Who Left the Workforce	Number Who Joined the Workforce	Total
2008	0		9
2009	1	0	9
2010	0	1	9
2011	0	1	10
2012		0	10

Table 7. Percentage Change in the Number of Oncology Physicians, by Age Distribution and by Rural-Urban Counties, Nebraska 2008-2012

Age Group	Urban		Rural	
	Total Number	Percentage Change 2008-2012	Total Number	Percentage Change 2008-2012
<45 Years	38	8.6	9	50.0
45-60 years	47	-7.8	12	0.0
60+ years	19	26.7	1	-66.7
All ages	104	3.0	22	4.8

Table 8. Number of Oncology Physicians Working More than 40 Hours per Week by Age Distribution, Nebraska 2008-2012

Age Group	Oncology Physicians Working More than 40 Hours per Week	
	Total Number	Percentage Change 2008-2012
<45 Years	21	50.0
45-60 years	22	-29.0
60+ years	6	0.0
All ages	49	-3.9