

Editorial

Impact of care disparities in radiation oncology

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Disparities have a multifaceted impact in the field of oncology with adverse differences in cancer outcomes, such as mortality, morbidity, and prevalence, that often translate into health inequities.¹ The contemporary understanding of disparities has expanded beyond describing racial differences and toward explaining inequities by sex, age, income, education level, geographic location, insurance coverage, lifestyle, and cultural differences. Nevertheless, even these categorizations are fluid, in that they can still be imprecise, overlapping, interrelated, and/or synergistic, representing complex relationships between sociological, biological, structural, and even policy concepts. Studies of patients with cancer highlight the associations between barriers to quality cancer care and adverse cancer outcomes, positing influences by patient, structural, socioeconomic, and healthcare access risk factors.^{2,3}

There is some evidence to suggest that disparities may have a unique impact in the field of radiation oncology, with differences in patient utilization of advanced radiation technologies and access to high-volume facilities.³⁻⁵ Distance from radiation facilities is a well-known risk factor for inadequate radiation oncology care.⁶⁻⁹ Disparities in radiation treatment delivery measures, including treatment delays, breaks, and incompleteness, have also been documented,^{10,11} along with the uptake of newer, benchmarked practices, such as hypofractionation in early stage breast cancer.

The risk factors, mechanisms, and outcomes of disparities in radiation oncology still require additional

investigations to prompt continuous improvements in multidisciplinary cancer care infrastructure and outcomes in the United States and beyond. We seek to highlight this topic with an ongoing series of articles on the impact of disparities on delivery and outcomes of radiation therapy as well as participation in research.

References

1. Steinberg ML. Inequity in cancer care: Explanations and solutions for disparity. *Semin Radiat Oncol.* 2008;18:161-167.
2. Polite BN, Adams-Campbell LL, Brawley OW, et al. Charting the future of cancer health disparities research: A position statement from the American Association for Cancer Research, the American Cancer Society, the American Society of Clinical Oncology, and the National Cancer Institute. *J Clin Oncol.* 2017;35:3075-3082.
3. Ayanian JZ, Guadagnoli E. Variations in breast cancer treatment by patient and provider characteristics. *Br Cancer Res Treat.* 1996;40:65-74.
4. Grant SR, Walker GV, Koshy M, et al. Impact of insurance status on radiation treatment modality selection among potential candidates for prostate, breast, or gynecologic brachytherapy. *Int J Radiat Oncol Biol Phys.* 2015;93:968-975.
5. Gillespie EF, Matsuno RK, Xu B, et al. Geographic disparity in the use of hypofractionated radiation therapy among elderly women undergoing breast conservation for invasive breast cancer. *Int J Radiat Oncol Biol Phys.* 2016;96:251-258.
6. Wang EH, Rutter CE, Corso CD, et al. Patients selected for definitive concurrent chemoradiation at high-volume facilities achieve improved survival in stage III non-small-cell lung cancer. *J Thorac Oncol.* 2015;10:937-943.
7. Chen AB, D'amico AV, Neville BA, Steyerberg EW, Earle CC. Provider case volume and outcomes following prostate brachytherapy. *J Urol.* 2009;181:113-118.
8. Chen YW, Mahal BA, Muralidhar V, et al. Association between treatment at a high-volume facility and improved survival for radiation-treated men with high-risk prostate cancer. *Int J Radiat Oncol Biol Phys.* 2016;94:683-690.

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9. Lin JF, Berger JL, Krivak TC, et al. Impact of facility volume on therapy and survival for locally advanced cervical cancer. *Gynecol Oncol.* 2014;132:416-422.
10. Park HS, Decker RH. Disparities in radiation therapy delivery: Current evidence and future directions in head and neck cancer. *Cancer Head Neck.* 2016;1:5.
11. Ferdaus R, Kim MS, Larson JS. Health disparity: Time delay in the treatment of breast cancer in Louisiana. *J Health Hum Serv Adm.* 2011;34:302-324.