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Carrie Warner
Grand Valley State University

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Analysis of Racial/Ethnic Disparities and Language Barriers in Radiation Therapy

Carrie Warner

Grand Valley State University

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Abstract

It is important for every patient within healthcare to have access to and receive quality care no matter their race, ethnicity, and/or primary language. Focusing on cancer care in the United States, there are racial and ethnic disparities as well as language barriers, both within the English language itself and with foreign languages, that prevent patients from receiving high quality care. This meta-analysis provides evidence of current disparities within healthcare that can be applied to the radiation oncology department and reveals suggestions for advancements including the use of language-concordant physicians and medical interpreters. Some of the policies, plans, and resources published to combat disparities of race, ethnicity, and language within healthcare have been discussed as their impact is crucial to providing more access to healthcare and encouraging higher quality of care to all individuals.

Keywords: Cancer, radiation therapy, race, ethnicity, language, healthcare

Analysis of Racial/Ethnic Disparities and Language Barriers in Radiation Therapy

The United States healthcare system promotes physical health, mental health, and the well-being of individuals by continuously working to improve access to healthcare and the quality of patient care in every department. The radiation oncology department is focused on providing care primarily to patients who are diagnosed with cancer. Cancer is a common disease in the United States where the lifetime risk of all invasive cancers for men in the United States is estimated to be 42.05% and 37.58% for women (Grunau, Gueron, Pornov, & Linn, 2018). Barriers to receiving cancer care are often socioeconomic factors, such as income and education, but are commonly heightened by racial/ethnic disparities and language barriers” (Social Disparities in Radiation Therapy, 2019). Encompassed within these barriers include limited understanding about treatment, medication, and side effects; inability to ask questions and communicate with health care professionals to make informed decisions; inability to understand patient resources; and not knowing what to expect during their cancer treatment (Chou, Kuang, Lee, Yoo, & Fung, 2016). In order to improve quality and access of care to cancer patients, we must focus on reducing racial/ethnic disparities and language barriers in which communication gaps often occur.

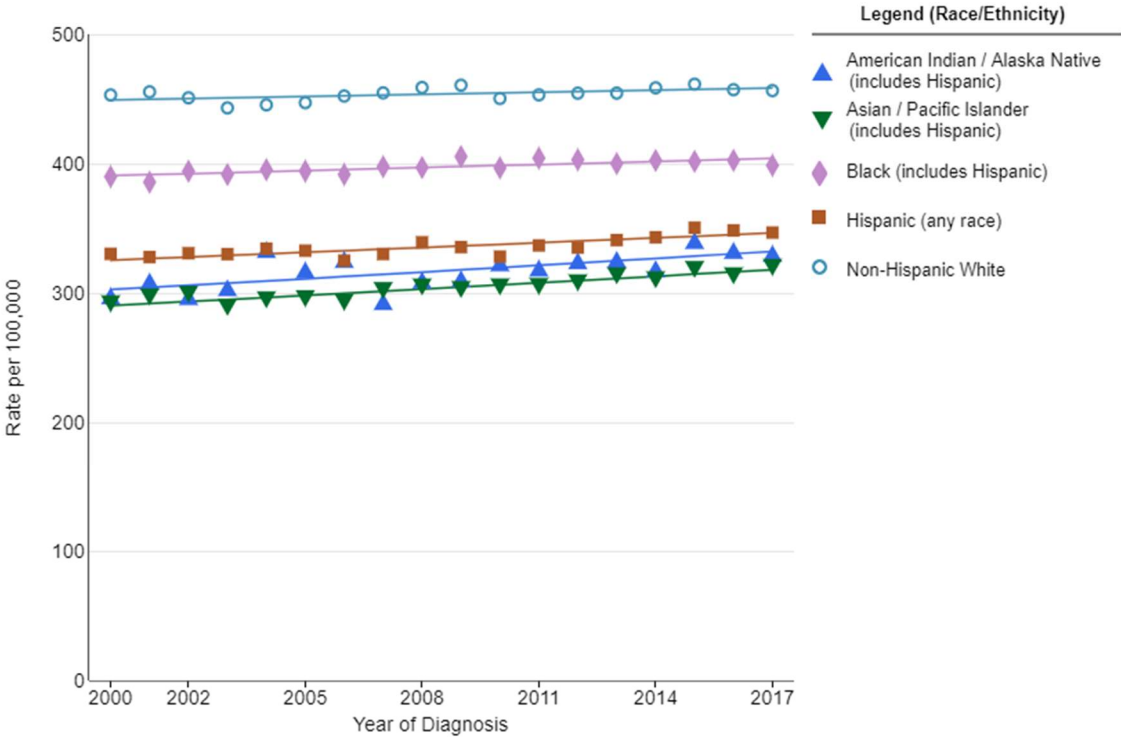
Part 1.) Racial and Ethnic Disparities in Cancer

General cancer statistics show disparities between race and ethnicity with incidence and mortality rate. SEER (Surveillance, Epidemiology, and End Results) is a program associated with the National Cancer Institute that collects statistics on incidence and survival rates in the United States. The National Center for Health Statistics (NCHS) is a federal agency within the Center for Disease Control (CDC) that collects data from the US Mortality Files to analyze trends on mortality rates. The statistics shown in figures 1 and 2 below use data from SEER and

the US Mortality Files to compare incidence rates and mortality rates in the United States by race/ethnicity. Note that these statistics are not based as a percentage of the population. “For most cancers, African Americans have both the highest death rate and shortest survival of any racial/ethnic group in the United States, with an overall cancer death rate 24% higher in African American men and 14% higher in African American women compared with their Caucasian counterparts” (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Since radiation therapy (RT) is often the standard of care for cancer patients, “disparities in access to RT may contribute to the disparate mortality statistics among African Americans” (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017).

Figure 1

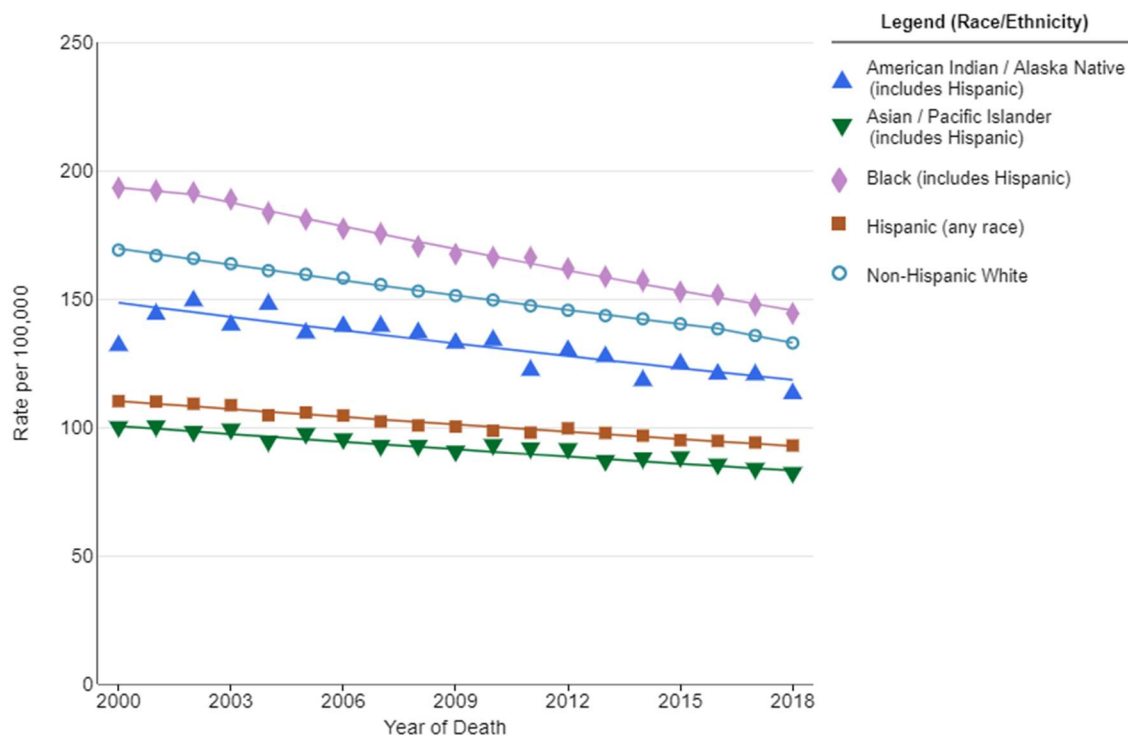
All Cancer Sites Combined
Recent Trends in SEER Age-Adjusted Incidence Rates, 2000-2017
By Race/Ethnicity, Female, All Ages, Delay-adjusted Rates



Note. This figure was created by <https://seer.cancer.gov/explorer/> on Sun. Oct. 18, 2020 to demonstrate incidence rates among five categories of race and ethnicity in the United States.

Figure 2

**All Cancer Sites Combined
Recent Trends in U.S. Age-Adjusted Mortality Rates, 2000-2018
By Race/Ethnicity, Female, All Ages**



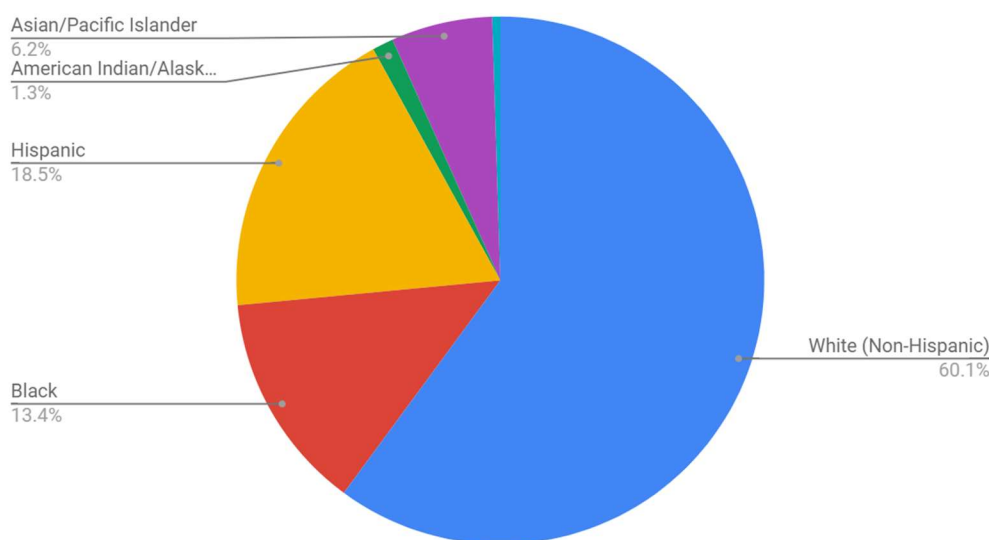
Note. This figure was created by <https://seer.cancer.gov/explorer/> on Sun. Oct. 18, 2020 to demonstrate mortality rates among five categories of race and ethnicity in the United States.

As shown in figure 3 below, the U.S. population estimates by race/ethnicity from the U.S. Census Bureau as of July 2019 show 60.1% White non-Hispanic, 18.5% Hispanic, and 13.4% Black so it is expected to see higher incidences and mortality among these populations (*U.S. Census Bureau QuickFacts: United States*). According to the Indian Health Service, there are only approximately 5.2 million American Indians and Alaska Natives living in the United States from 566 federally recognized tribes so it is expected that there would be low rates of incidence

and mortality (McClelland, Leberknight, Guadagnolo, Coleman, & Petereit, 2017). Statistics show that is not the case as they have the fourth highest incidence rates seen in figure 1 and the third highest mortality rates in figure 2 above. Out of any racial/ethnic group in the U.S., African-American patients have the highest overall cancer mortality rates, but the American Indian population has the worst cancer-specific survival rates of any racial/ethnic group because they present with more advanced-stage cancers (McClelland, Leberknight, Guadagnolo, Coleman, & Petereit, 2017). This data shows that racial/ethnic disparities do exist in the realm of cancer diagnoses.

Figure 3

U.S. Population by Race/Ethnicity



Note. Using data from the US Census Bureau, this figure shows the United States population estimates for 2019 of the five race/ethnicity groupings listed in the previous SEER figure.

Information retrieved Sun. Oct. 18, 2020 from

<https://www.census.gov/quickfacts/fact/table/US/PST045219>.

Part 2.) Limited English Proficiency

The U.S. Department of Justice defines limited English proficiency (LEP) as individuals who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English (Commonly Asked Questions and Answers Regarding Limited English Proficient (LEP) Individuals, 2011). This creates a problem in healthcare in the United States because it can affect the patient throughout their whole medical journey, such as the patient's ability to become educated on their health status, fill out important medical documentation, communication and ask questions with healthcare professionals, and comply with drug prescription instructions. It is difficult to estimate how many Americans are considered to have LEP unless involved with a study. A telephone survey of 1,200 residents of California found that 592 (49%) of the respondents were considered to have limited English proficiency and were more likely to be elderly, female, less educated, low income, uninsured or publicly insured, living in the U.S. for a short period of time, and have a physician that speaks their preferred language (Wilson, Chen, Grumbach, Wang, & Fernandez., 2005). Another consideration besides what were mentioned in the study are those with communication disorders, such as impaired hearing or eyesight, aphasia, or autism, that may also face health literacy challenges. Reading, writing, speaking, hearing, and understanding English can make receiving healthcare in the United States easier and with high quality of care as compared to those who cannot.

Reading and Writing

Limited English proficiency in reading and writing can affect one's ability to properly read patient education resources and fill out essential medical documents. In the United States, the American Medical Association (AMA) and the National Institute of Health (NIH) suggest the average reading level of U.S. adults is at the eighth-grade level. To evaluate the complexity of

medical texts, the Flesch-Kincaid Grade Level (FKGL) is a test used to predict the grade level of a text based on the average sentence length and the average word length. Metrics like the FKGL rely on the assumption that the longer the words and the sentences are, the more difficult the text is. A study to evaluate the reading level of patient education resources specifically in oncology claims “one hundred and nine of the 135 articles (80.7%) required a high school graduate’s comprehension level (12th grade level or higher) and only 1 of the 135 articles (0.74%) met AMA and NIH recommendations for patient education resources to be written between the third and seventh grade levels” (Prabhu, Hansberry, Agarwal, Clump, & Heron, 2016).

Increased electronic health record (EHR) access and usage enable patients to electronically view, download, and transmit their health information but its effectiveness is dependent on the patient’s ability to read that information. “In 2015, 95% of hospitals provided their patients with the ability to view their information” (Zheng & Yu, 2018). The FKGL is not a good predictor of evaluating the text difficulty of electronic health records “as sentences are usually short and abbreviations are common” (Zheng & Yu, 2018).

Speech and Hearing

The inability to speak or hear can greatly reduce communication between the patient and staff. For example, patients receiving treatment to the head and neck may have had surgery to the tongue or larynx or side effects from radiation that reduce their ability to speak. Statistics on hearing loss from The National Institute on Deafness and Other Communication Disorders (NIDCD) found “approximately 15% of American adults (37.5 million) aged 18 and over report some trouble hearing” (Quick Statistics About Hearing, 2020). In cases like these where the patients are unable to rely on spoken communication, it is important for facilities to offer

effective alternatives to verbal communication which circles back to using literature and written communication.

Understanding

Health literacy is an overarching term that describes the ability to obtain, process, and understand healthcare information in order to make appropriate healthcare decisions and follow given instructions for treatment. A common issue in understanding health information is that physicians and other health professionals believe they are communicating accurately and patients may believe they have understood directions but may be embarrassed to ask questions to confirm their understanding (Health Literacy, 2020). Another issue is that with the initial shock of finding out you have cancer, it can reduce your focus when listening to a doctor or medical professional and can continue throughout the course of treatment because everyone is at risk for misunderstanding health information if the topic is fairly emotional (Health Literacy, 2020).

Healthcare professionals encourage patients to become educated about their diagnosis and options for care, but it is difficult for people to distinguish evidence-based information from misleading ads and gimmicks (Health Literacy, 2020). Also, when searching for education about your cancer, your mind can selectively choose information that you want to hear to bring yourself hope. Besides the Internet, many Americans gain education on health from television news. One study of television health coverage found that health stories have a median airtime of 33 seconds and “only 18 percent [of reporters] had specialized training in health reporting and 50 percent were not familiar with health literacy” (National Action Plan to Improve Health Literacy, 2010). Often these claims made by the reporters were not supported by the data, disregard the uncertainty of clinical trials, and were single-source stories.

Part 3.) Limited English Proficiency with Foreign Language

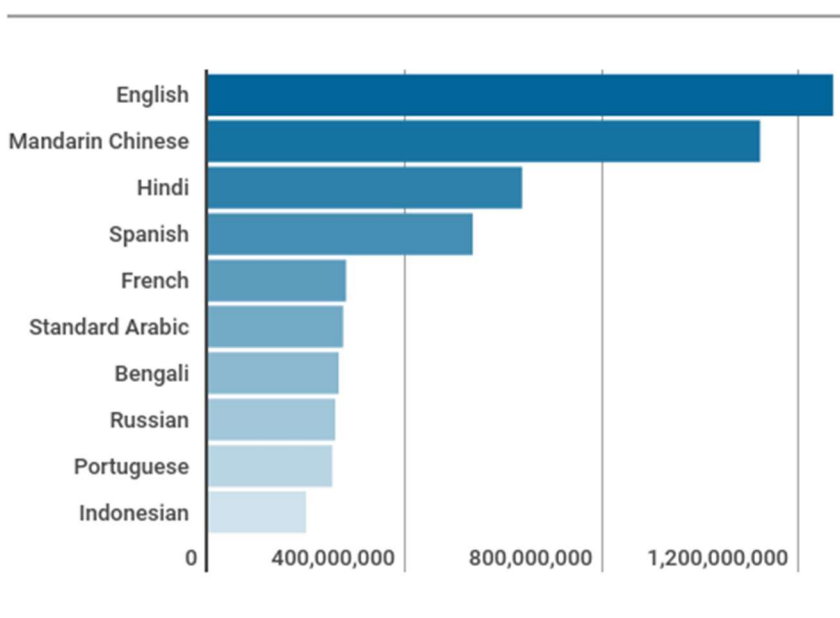
Language barriers in healthcare have been discussed in a multitude of studies suggesting it greatly reduces the quality of patient care. While many studies focus on the patients feeling like they are unable to communicate effectively with the health-care providers, one study also reported that health-care providers themselves feel like they provide less patient-centered care due to language barriers (Chou, Kuang, Lee, Yoo, & Fung, 2016). To improve quality patient care and reduce the language barriers, the healthcare system “should target increasing the number of language-concordant physicians, enhancing use of professional interpreters in linguistic-discordant encounters, and facilitating the linguistic competence of the health care system as a whole” (Wilson, Chen, Grumbach, Wang, & Fernandez., 2005).

Language-Concordant Physicians

Language-concordant physicians are doctors who are highly proficient in the patient’s preferred language. Limited English proficiency patients who do not have language-concordant physicians have a high risk for problems with medications and understanding medical situations (Wilson, Chen, Grumbach, Wang, & Fernandez., 2005). When given access to language-concordant physicians, it has been shown to be effective in reducing reports of adverse effects and confusion with medication instructions as well as an improvement in understanding of complex treatments (Wilson, Chen, Grumbach, Wang, & Fernandez., 2005; Qureshi et al., 2014). Although there are clear benefits to having a language-concordant physician, limiting LEP patients to a physician in their own language may lead to more segregation of the healthcare system.

According to the ethnologue published by SIL International, there are currently 7,117 languages in use throughout the entire world but only 23 of those account for more than half the

world's population (Eberhard, Simons, & Fennig, 2020). The Ethnologue 200 was created as a more precise list of the top 200 languages spoken in the world where 88 percent of the world's population speaks one of the 200 as their native language and many others speak one of the 200 as their second language (Eberhard, Simons, & Fennig, 2020). In the United States there are approximately 5,000 registered oncologists with the American Society of Radiation Oncology (ASTRO). If you were to equally divide those 5,000 oncologists into the 50 states, there would only be 100 oncologists per state. To get a general idea of the ratio of oncologists in the world with their preferred language, I used the statistics from only the top 10 world languages shown in figure 4 below. Out of 100 oncologists there would be approximately 25 English speakers, 24 Mandarin Chinese, 12 Hind, 10 Spanish, 5 French, 5 standard Arabic, 5 Bengali, 5 Russian, 5 Portuguese, and 4 Indonesian speakers. Cancer centers, dependent on their size, typically have only around 2 oncologists and are geographically spread out among the population. In order for a patient to receive a language-concordant physician, they may need to be willing to travel long distances since oncologists speaking certain languages will be limited.

Figure 4*Top 10 most spoken languages, 2020*

Note. Retrieved Mon. Nov. 02, 2020, from <http://www.ethnologue.com/>.

Medical interpreters

If language-concordant physicians are unavailable, medical translators fill that role to provide language translations for the patient. Medical interpreters are bilingual or multilingual trained professionals in translating spoken words from one language to another more specifically to include medical terminology to increase effective communication between patients, medical professionals, and their families. To become a medical interpreter, one needs to first pass the prerequisite bilingual test given through Language Testing International, be at least 18 years of age, and have at least a high school diploma or equivalent before being able to continue into training. Medical interpreter education involves a minimum of an accredited 40 hour medical interpreting certificate course but many employers are now requesting a minimum of 160 hours. These hours

may include specialized training for departments such as oncology, neonatal, and mental health to learn complex terminology and skills for patients in every circumstance. Once education is completed, it is required to take a written and oral exam by the National Board of Certification for Medical Interpreters (NBCMI) to receive a medical interpreter certification. Every 5 years, medical interpreters will need to recertify by completing 30 contact hours of approved continuing education units to ensure quality care for patients.

Clinically, there are pros and cons to using medical interpreters. Medical interpreters provide the patient with informative care by directly translating what the healthcare professional wants to say to the patient and they can also provide the patient direction when the healthcare professional needs them to follow a certain task such as laying on the treatment table. In a study on language barriers in breast cancer care, using medical interpreters resulted in 53% lower odds of less-patient-centered treatment discussions meaning that there is greater patient communication with medical interpreters than if there were none (Karliner, Hwang, Nickleach, & Kaplan, 2011). Many facilities that are unable to provide quality medical interpretation or simply use the convenience of bilingual staff or family members to communicate in the patient's language often result in decreased accuracy and disruption workflow which can reduce the patient's quality of care (Jacobs, Ryan, Henrichs, & Weiss, 2018; Chan, Bola, Campbell, Cumal, & Erler, 2020). Some facilities are able to use over-the-phone interpreters if they do not have medical interpreters available at their location. In one study, staff interview results showed that over-the-phone interpreter services were used only 8% of time with eligible patients and the main reasons why they were not used were due to lack of convenience and time constraints (Chan, Bola, Campbell, Cumal, & Erler, 2020). Medical interpreters should only be used to translate orally, not for sight translation. Sight translation refers to interpreting text from one

language and translating it verbally in another. One may assume that medical interpreters can translate medical text from important documents, such as a consent form or patient education brochures, but “sight translation is a different task than interpretation and requires a high level of mastery and thorough knowledge of subject matter to achieve an accurate and understandable rendition of a text document into another language” (Donelan, Hobrecker, Schapira, Mailhot, Goulart, & Chabner, 2009). Current standards of medical interpreter practice encourage interpreters “to refrain from performing tasks for which they do not have the skills, including sight translation” (Donelan et al., 2009). Use of medical interpreters has increased access and quality of patient care for those with language barriers, but there are still many areas in which medical translation can improve.

For medical translators to be more effective, it will be necessary to have a strong partnership with the medical professionals. A study evaluating Arab migrant cancer survivors and their experience with U.S. healthcare says “our findings reinforce the need for health care professionals to take into consideration the countries of origin and dialectical differences of Arab cancer survivors when arranging for a professional interpreter to ensure both cultural and linguistic congruence” (Alanzeh, Ramjan, Kwok, Levesque, & Everett, 2018). Another study suggested five ways medical professionals and medical translators could have more effective collaboration and therefore better education for LEP patients. (Donelan et al., 2009)

“1) Clinicians can ease communication and understanding by addressing patients in plain language, avoiding jargon, acronyms, editorializing, and technical terms. Using plain language, physicians can likely improve the interpreters' understanding of the material and may thereby also positively impact the quality of interpretation.

- 2) Clinicians should encourage patients and interpreters to interrupt when lack of knowledge or poor understanding of terms and explanations is impeding accurate interpretation and effective communication. Medical interpreters are instructed by their Standards of practice to promote direct communication between physician and patients, to disclose skill limitations, cultural and linguistic constraints, and to seek clarification as necessary to preserve accuracy. Ultimately, it is the clinician who should tailor the explanation to the patient's understanding, taking responsibility for “breaking down” concepts, “simplifying” technical terms and substituting word pictures or descriptions.
- 3) Clinicians should recognize that if experienced, professional interpreters often lack basic knowledge in cancer and clinical trials, then untrained volunteers, staff in dual roles (employed in another capacity but called on to interpret as needed), family members, and others may be even less well informed. Furthermore, clinicians should recognize that untrained individuals engaged to interpret ad hoc would likely not be acquainted with the ethical principles and standards of interpreting practice. Asking adult family members to step in to interpret should be a last resort, done only when appropriate professional interpretation services cannot be obtained. Of course, minors should not, under any circumstances, be asked to interpret.
- 4) Clinicians should recognize the role of the medical interpreter and refrain from asking interpreters to perform tasks that have the potential for confusing patients about the respective roles of interpreters and clinicians. Asking interpreters to independently explain documents, treatments or procedures or asking them to accompany or contact patients outside of the clinical encounter, without a provider present can impede professionalism in the delivery of interpreter services. Maintaining role boundaries with appropriate empathy and professional distance is important to avoid conflicts of interest, to protect patient and interpreter privacy and, ultimately, to support the goal of having each party's intended message conveyed accurately and completely by the interpreter.
- 5) Clinicians should recognize that sight translation of written materials, such as consent forms, protocols or disease information requires a different order of skills and should not be routinely expected of interpreters. This applies especially to lengthy and complex documents like clinical trial consent forms. Investigators must make arrangements for two services: 1) medical interpreters for interpretation of the clinician's oral presentation of clinical study information and of patient's questions and responses and for 2) advance preparation of written translation by a team of professional translators of the full consent form or of the approved short form.” (Donelan et al., 2009)

The future of medical interpretation should involve filling the knowledge gaps that exist with the complex terminology of cancer care and creating language access plans. Although medical interpretation has come a long way, a study evaluating its effectiveness found “53% of interpreters in cancer basics training sessions reported some level of discomfort with the technical terms used by health professionals during interpretation and 64% of interpreters in cancer basics said that they were uncomfortable with the patient's general understanding of

treatment and evaluation for cancer” (Donelan et al., 2009) New language access plans can provide tools for how medical interpreters can receive greater knowledge on cancer terminology, accomplish higher quality and ethical patient care, improve patient comfort and satisfaction, and reduce confusion between patients and clinicians (Jacobs, Ryan, Henrichs, & Weiss, 2018).

Part 4.) Policies, Plans, and Resources on Reducing the Communication Gap

To continue to combat racial/ethnic disparities and language barriers that exist in healthcare and improve the quality of communication in patient care, multiple plans have been put into place and executed since the Civil Rights Act in 1964. Some of these policies, plans, and resources are listed below.

TIMELINE

1964 - Title VI of Civil Rights Act
 1979 - Healthy People
 1987 - IMIA Code of Ethics
 1990 - Healthy People 2000
 2000 - Executive Order
 2000 - Healthy People 2010
 2001 - Center to Reduce Cancer Health Disparities
 2002 - Cancer Disparity Research Partnership (CDRP)
 2006 - IMIA Code of Ethics
 2010 - Healthy People 2020
 2010 - Affordable Care Act
 2017 - ASTRO journal series

Government Policies

Title VI of the Civil Rights Act of 1964 prohibits the exclusion of, denied benefits of, or discrimination of persons due to race, color, or national origin under any program or activity receiving Federal financial assistance. Since hospitals are federally funded, they need to constantly evaluate if patient care provided follows this law including providing a professional interpreter to any patient that needs one. In 2000, the President of the United States issued an Executive Order to improve access to people with limited English proficiency (LEP) by

requiring all federal agencies to evaluate its services. The Department of Justice issued a general guidance document (LEP Guidance) with the release of the Executive Order, which includes compliance standards that agencies must follow to ensure that the programs and activities they normally provide in English are also just as accessible to LEP persons. Three years later, the Department of Health and Human Services (HHS) published its own HHS LEP Guidance to provide access to federal healthcare programs which covers a vast array of services including language assistance. To abide by the HHS LEP Guidance, language assistance services must be free to patients, accurate and timely, protect patient confidentiality, and be provided by qualified interpreters.

Healthy People

Healthy People is a program that was created in 1979 by the Department of Health, Education, and Welfare and released a 10-year plan with goals of health-promotion and disease-prevention. These goals were updated in 1990 for Healthy People 2000 and have been updated with new ten-year goals ever since. In 2000, the United States Department of Health and Human Services began to manage Healthy People and to this date released Healthy People 2010 and Healthy People 2020.

As of November 2020, Healthy People 2020 is the most recent framework released which focus on four main goals to “attain high-quality, longer lives free of preventable disease, disability, injury, and premature death; achieve health equity, eliminate disparities, and improve the health of all groups; create social and physical environments that promote good health for all; and promote quality of life, healthy development, and healthy behaviors across all life stages” (Healthy People 2020 Framework). Healthcare organizations and their policies are vital in ensuring understanding in the health care setting (Health Literacy, 2020). Healthy People 2020

encourages any organizations, agencies, businesses, schools, or government entities to join the Healthy People Consortium and commit to implementing resources or policies that align with these goals. There are nearly 2,500 organizations in the United States that are a part of the Healthy People Consortium and are working towards reducing healthcare disparities (Healthy People 2020 Framework).

National Action Plan 2010

In order to achieve the goals set by Healthy People 2020, the U.S. Department of Health and Human Services released the National Action Plan to Improve Health Literacy in May 2010. This National Action Plan to Improve Health Literacy is based on the principles that (1) everyone has the right to health information that helps them make informed decisions and (2) health services are delivered in ways that are understandable and beneficial to health, longevity, and quality of life. This vision can be achieved by following these seven goals:

- “1. Develop and disseminate health and safety information that is accurate, accessible, and actionable
2. Promote changes in the healthcare system that improve health information, communication, informed decision making, and access to health services
3. Incorporate accurate, standards-based, and developmentally appropriate health and science information and curricula in child care and education through the university level
4. Support and expand local efforts to provide adult education, English language instruction, and culturally and linguistically appropriate health information services in the community
5. Build partnerships, develop guidance, and change policies
6. Increase basic research and the development, implementation, and evaluation of practices and interventions to improve health literacy
7. Increase the dissemination and use of evidence-based health literacy practices and interventions” (National Action Plan to Improve Health Literacy, 2010).

Any organization or department can adopt these goals to focus on improving the accessibility and quality of healthcare to all individuals, but the National Action Plan to Improve Health Literacy promotes taking action. For each goal within this plan, there are suggested

strategies for specific stakeholders, such as healthcare executives, health information and library professionals, educational administrators, nonprofit organizations, government agencies, public health professionals, advocacy groups, and more in which the goal may be the most helpful. Throughout the plan they also have “Strategies in Action” that give great examples of how a specific action can achieve that goal. The National Action Plan to Improve Health Literacy brings together organizations and people at all levels of society as an integrated framework to work towards improvement in the design and delivery of healthcare resources and services.

Affordable Care Act

The Affordable Care Act, also known as Obamacare, was enacted in 2010 and signed by President Barack Obama to make health insurance more affordable so more Americans can receive health insurance coverage. Health insurance agencies were to accept all applicants and not discriminate based on demographic status or preexisting medical conditions. By 2016, it is estimated that 20 to 24 million people received health insurance coverage reducing the uninsured population by about half (Health Insurance Coverage and the Affordable Care Act, 2010-2016, 2016). With more people insured, there will be higher rates of citizens receiving healthcare reducing some of the racial and ethnic disparities that exist.

Code of Ethics for Medical Interpreters

The International Medical Interpreters Association (IMIA) was founded in 1986 and in 1987 published the first Code of Ethics for medical interpreters. This created a standard for medical interpreters and promotes a more encompassing healthcare system. The revised IMIA Code of Ethics from 2006 is listed below.

- “1. Interpreters will maintain confidentiality of all assignment-related information.
2. Interpreters will select the language and mode of interpretation that most accurately conveys the content and spirit of the messages of their clients.

3. Interpreters will refrain from accepting assignments beyond their professional skills, language fluency, or level of training.
4. Interpreters will refrain from accepting an assignment when family or close personal relationships affect impartiality.
5. Interpreters will not interject personal opinions or counsel patients.
6. Interpreters will not engage in interpretations that relate to issues outside the provision of health care services unless qualified to do so.
7. Interpreters will engage in patient advocacy and in the intercultural mediation role of explaining cultural differences/practices to health care providers and patients only when appropriate and necessary for communication purposes, using professional judgment.
8. Interpreters will use skillful unobtrusive interventions so as not to interfere with the flow of communication in a triadic medical setting.
9. Interpreters will keep abreast of their evolving languages and medical terminology.
10. Interpreters will participate in continuing education programs as available.
11. Interpreters will seek to maintain ties with relevant professional organizations in order to be up-to-date with the latest professional standards and protocols.
12. Interpreters will refrain from using their position to gain favors from clients” (International Medical Interpreters Association, 2020).

By following these Code of Ethics, medical interpreters will not discriminate and will reduce the barriers both in culture and language.

National Cancer Institute

In 2001, the National Cancer Institute established the Center to Reduce Cancer Health Disparities in order to reduce the unequal burden of cancer in our society. Their mission is “CRCHD strengthens the NCI cancer research portfolio in basic, clinical, translational, and population-based research to address cancer health disparities through collaborations with NCI Divisions, Offices, and Centers; advises on strategic priorities, program direction, and scientific policy to strengthen cancer disparities research, diversity training, women’s health, and sexual and gender minority opportunities; and leads NCI’s efforts in workforce diversity through the training of students and investigators from diverse backgrounds” (Mission, 2017). In 2005, the CRCHD started the Community Networks Program to reduce cancer health disparities through community-based participatory education, training, and research among racial/ethnic minorities and underserved populations. They also plan to make efforts to encourage policy changes to

reduce cancer disparities by providing evidence-based information to local, state, and federal lawmakers.

In 2002, the National Cancer Institute (NCI)'s Division of Cancer Treatment and Diagnosis (DCTD) initiated a pilot program called the Cancer Disparities Research Partnership Program (CDRP). The focus of this program is to plan, develop and conduct research using radiation oncology clinical trials in hospitals serving high numbers of patients from populations affected by health disparities. Since 2002, this pilot program showed that reaching communities with health disparities who haven't been researched before can be done and the future challenge is to continue to provide access to more populations with high racial/ethnic disparities.

ASTRO

The American Society for Radiation Oncology (ASTRO) is the professional association that aims to improve patient care through professional education and training to a range of specialists in radiation oncology including radiation oncologists, radiation therapists, medical dosimetrists, medical physicists, and radiation oncology nurses. In 2017, ASTRO released a journal series to focus on "four of the United States populations most vulnerable to limited RT access," which are African-Americans, Native-Americans, Hispanic-Americans, and North Americans living in rural regions, with the goal of increasing awareness of these disparities to members of the radiation oncology team (Miller et al., 2017).

The first journal discusses the disparities of African American cancer patients. In an extensive literature search to find research about African-American access to radiation therapy, a total of 55 studies spanning 11 organ systems were found up to the date of April 10, 2017 (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Of the 55 articles found for different organ systems, 23 of them were breast cancer, 7 for prostate cancer, 5 for gynecologic

cancers, 5 for lymphoma, 3 for colorectal cancer, 3 for central nervous system cancers, 3 for sarcomas, two for pancreatic cancer, and only 1 for lung cancer, head and neck cancer, and esophageal cancer (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Limitations on African Americans access to radiation therapy include increased distance from facilities, decreased access to private vehicle transportation compared with Caucasians, decreased insurance coverage, and cultural bias (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Although costing lots of money, obvious solutions include more facilities to reduce the distance of travel, providing transportation to and from the facility, and increase insurance coverage. Cultural bias can be reduced through requiring health care providers to take a cultural competence training or unconscious bias training (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Another strategy is to increase the diversification of the workforce by increasing the amount of African American oncologists (McClelland, Page, Jaboin, Chapman, Deville, & Thomas, 2017). Similar to the idea of increased language concordant physicians helping patients understand their care, increasing cultural concordant physicians could also be effective. African Americans should receive high-quality care regardless of their racial/ethnic background and the racial/ethnic background of their providers.

The second journal article discusses limitations of American Indian (AI) and Alaska Natives (AN) in access to radiation therapy. In this literature search, only three studies were found all of which made references to the Walking Forward Program. Since cancer is the leading cause of death among AI/AN populations nationwide, the Walking Forward Program was created in 2002 to address the barriers leading to high mortality rates (specifically in South Dakota) including patient navigation, assessment of barriers to cancer detection for screen-detectable cancers, community education, and access to clinical trials (McClelland, Leberknight,

Guadagnolo, Coleman, & Petereit, 2017). More recently (2012-2016), the Walking Forward Program made efforts to prevent smoking induced cancers by implementing a smoking-cessation project using mHealth technology (McClelland, Leberknight, Guadagnolo, Coleman, & Petereit, 2017). By increasing access to early cancer detection in AI/AN populations, there is a much higher success rate with treatments resulting in less mortalities and less disparities between the AI/AN populations and other U.S. populations.

The third article discusses Hispanic-American access to radiation therapy. Like American Indians, cancer is the number one cause of death among Hispanic-Americans, but they have a lower mortality rate than AI/AN. The literature review found 34 studies spanning 10 organ systems: 15 for breast, 4 for prostate, 4 for head and neck, and 3 for gynecologic cancers. Those who are born outside of the U.S. and/or have limited English proficiency (LEP) are less likely to have access to and receive quality radiation therapy treatment (McClelland, & Perez, 2017). This article concludes that there needs to be future studies to address the impact of LEP of vulnerable populations in radiation therapy as well as increased government policies in radiation therapy to increase access to all patients (McClelland, & Perez, 2017).

Lastly, the fourth article discusses the limited access of radiation therapy to Appalachian patients. The Appalachian population accounts for greater than 8% of the U.S. population and are those who live in 1 of the 406 counties across the states of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia (McClelland, Kaleem, Bernard, Ahmed, Sio, & Miller, 2018). Statistically, these areas have high poverty levels and low education levels meaning that there will be a high level of people with limited English proficiency (McClelland, Kaleem, Bernard, Ahmed, Sio, & Miller, 2018). Limitations for this population include “lack of private

insurance, limited access to diagnostic and treatment services (ie, colonoscopy for colorectal cancer screening), paucities in both number and quality of radiation centers, decreased access to up-to-date treatment recommendations, and the geographic region of the United States” (McClelland, Kaleem, Bernard, Ahmed, Sio, & Miller, 2018). The Appalachian ethnicity is not often studied, but shows a lot of the same disparities of other races in the U.S., so similar actions need to be taken among all the vulnerable populations to provide greater access to and higher quality of healthcare.

These articles show similar themes of disparities related to race, ethnicity, and limited English proficiency and increasing awareness of these disparities to the radiation oncology team may inspire individuals to think about what they can do as healthcare professionals. This may even lead to policy changes within the department if necessary.

Summary of Research

With cancer incidence rates affecting roughly 1.8 million people in the U.S. per year, improvements in cancer care should decrease racial/ethnic disparities as well as decrease language barriers in order to increase access to and quality of healthcare of all individuals (Cancer Stat Facts: Common Cancer Sites, n.d.). Incidence and mortality rates for cancer diagnoses show evidence of disparities with high rates of mortality among African Americans and American Indians/Alaska Natives as compared with the population dominant Caucasians. Those with limited English proficiency (LEP) have difficulty understanding their health status from initial diagnosis, throughout their course of treatment, and to follow-up appointments, which often results in lower quality care. Special considerations need to be made to anyone that claims English as their primary language who may lack in any of the areas of reading, writing, speaking, hearing, and understanding healthcare terminology. Current solutions to foreign

language barriers include language-concordant physicians and medical interpreters. To this day, many policies, plans, and resources have been created to address racial/ethnic disparities and language barriers that propose goals and suggest actions to combat these issues in healthcare. More research and taking more action on that research will continue to be necessary for the improvement of all areas within healthcare to provide greater access to care and the highest quality care possible to every individual.

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