
Inequities in Care and Treatment for Triple Negative Breast Cancer Patients

By Kirsten Axelsen, Rajini Jayasuriya, and Clara Zacharko (CRA)

Krissa Smith, Molly Guthrie, Omatola Gordon-Rose, Susan Brown, and Erica Kuhn (Susan G. Komen)

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Foreword

The “Inequities in Care and Treatment for Triple Negative Breast Cancer Patients” paper, co-authored by Charles River Associates and the Susan G. Komen organization, was made possible through funding provided by Gilead Sciences, Inc. (Gilead). As a leading biopharmaceutical company, Gilead recognizes the importance of supporting efforts that eliminate health care inequities and promote social justice. Since triple negative breast cancer (TNBC) disproportionately affects people from racial and ethnic minority groups and is diagnosed more frequently in younger women and women of color, Gilead believes it is critically important to understand and then work to address barriers to care and treatment faced by women with TNBC.

Executive summary

In this report Charles River Associates (CRA) and Susan G. Komen (Komen) examine the extent to which policies associated with triple negative breast cancer (TNBC) treatment and care can exacerbate or ameliorate inequities in TNBC health outcomes among at risk, under-resourced populations in the United States (U.S.). In particular, the objective was to:

- Describe evidence of the inequitable access to care and treatment and the resulting disparities on TNBC patients’ outcomes, including survival, and
- Highlight how health policies in the U.S. can address the drivers of inequitable resources and support patient access to timely treatment and care.

To do this, CRA conducted a comprehensive literature review of the TNBC policy landscape, which was enhanced by integrating insights from the patient advocacy group, Komen, to capture the real-world patient perspective and experience. Together, CRA and Komen evaluated potential policies and programs for TNBC treatment and care that could support the needs of at risk, under-resourced populations and reduce health inequities that lead to disparities in outcomes. The report was conducted for, and funded by, Gilead Sciences, Inc. (Gilead).

We focused on federal, state, and community-level policies and programs. The analysis references six states: California (CA), Georgia (GA), Louisiana (LA), Massachusetts (MA), Michigan (MI), and Pennsylvania (PA) and included additional states with constructive policy examples. The states of focus were selected based on their high level of breast cancer incidence among Black women and to ensure regional representation across the U.S.

Findings

Breast cancer is the most common cancer in the U.S. and the most frequent cancer among women. Of these diagnoses, approximately 10%–20% of breast cancers are diagnosed as the triple negative subtype.¹ The majority of TNBC cases occur in younger women under the age of 60. The relative incidence of the TNBC subtype is higher among certain racial groups, particularly Black women. In addition, these groups are diagnosed at later stages of the disease more often than white women. The difference in the relative incidence of the TNBC subtype may be partly attributable to biological factors resulting from racial differences, such as tumor heterogeneity and gene expression. However, the inequitable distribution of resources and social determinants of health can lead to differences in health outcomes, such as greater likelihood of chronic disease or comorbidities, which, alone and in

¹ Breastcancer.org. (2021, August). Triple-negative breast cancer. Retrieved from <https://www.breastcancer.org/symptoms/types/triple-negative>. Accessed 28 February 2022.

interaction with biological risk factors, may also affect the prevalence and trajectory of TNBC in Black, Hispanic, and low-income women.²

Ensuring coordinated and patient-centric care delivery

Based on our literature review, we find evidence that non-white and low-income patients face several barriers when understanding and navigating the health system following a cancer diagnosis:

- Community health centers and oncology clinics provide under-resourced communities with a high level of care coordination but often encounter financial struggles.^{3,4,5}
- The time requirements of multidisciplinary team (MDT) care, an approach that improves treatment outcomes, can be burdensome for low-income populations.^{6,7}
- Within the health care workforce, and especially across oncology specialties, Black and Hispanic Americans are underrepresented.⁸ Improving diversity in the health care workforce and investing in training of health care providers (HCPs) has been identified as important in building trust with, improve access for, and appropriately meet the (often currently unmet) needs of people of color.^{9,10,11}
- Negative past and present experiences for non-white patients within the health care system create medical mistrust, reduce treatment adherence, and lead to worse treatment outcomes.¹²

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- 2 Axelsen, K., Jayasuriya, R., Zacharko, C., Karmo, M. (2021, October). Disparities in screening and diagnosis for triple negative breast cancer. *Charles River Associates*. Retrieved from <https://media.crai.com/wp-content/uploads/2021/10/04132314/CRA-Gilead-Disparities-in-Screening-and-Diagnosis-TNBC.pdf>. Accessed February 2022.
 - 3 Henderson, V., Tossas-Milligan, K., Martinez, E., Williams, B., Torres, P., Mannan, N., ... & Watson, K. S. (2020). Implementation of an integrated framework for a breast cancer screening and navigation program for women from underresourced communities. *Cancer, 126 Suppl 10*, 2481–2493. <https://doi.org/10.1002/cncr.32843>.
 - 4 Heath, S. (2017, August 21). How Community Health Centers Support Patient-Centered Care. Patient Engagement HIT. Retrieved from <https://patientengagementhit.com/news/how-community-health-centers-support-patient-centered-care>. Accessed 22 February 2022.
 - 5 Community Oncology Alliance. (2020, April 24). 2020 Community Oncology Alliance Practice Impact Report. Retrieved from <https://communityoncology.org/study/2020-community-oncology-alliance-practice-impact-report/>. Accessed 22 February 2022.
 - 6 Stringer, E.M., Elkhanany, A. Khoury, K., Simon, M.A., Newman, L.A. (2021). Disparities in Breast Cancer Associated With African American Identity. *American Society of Clinical Oncology Educational Book, 41*. e29-e46. DOI: 10.1200/EDBK_319929.
 - 7 Osarogiagbon, R.U., Sineshaw, H.M., Unger, J.M., Acuña-Villaorduña, A., Goel, S. (2021). Immune-Based Cancer Treatment: Addressing Disparities in Access and Outcomes. *American Society of Clinical Oncology Educational Book, 41* 66-78. DOI: 10.1200/EDBK_323523.
 - 8 Agency for Healthcare Research and Quality (AHRQ). (2020, December). 2019 National Healthcare Quality & Disparities Report. Retrieved from <https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqdr/2019qdr.pdf>. Accessed 28 February 2022.
 - 9 Snyder, C. R., Frogner, B. K., & Skillman, S. M. (2018). Facilitating Racial and Ethnic Diversity in the Health Workforce. *Journal of allied health, 47*(1), 58–65. <https://www.asahp.org/journal-of-allied-health>.
 - 10 Agency for Healthcare Research and Quality (AHRQ). (2020, December). 2019 National Healthcare Quality & Disparities Report. Retrieved from <https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqdr/2019qdr.pdf>. Accessed 28 February 2022.
 - 11 American Society of Clinical Oncology (ASCO). (2020, January 1). Snapshot: State of the Oncology Workforce in America. *JCO Oncology Practice 17*, no. 1. DOI: 10.1200/OP.20.00577.
 - 12 Hostetter, M., Klein, S. (2021, January 14). Understanding and Ameliorating Medical Mistrust Among Black Americans. *The Commonwealth Fund*. Retrieved from <https://www.commonwealthfund.org/publications/newsletter-article/2021/jan/medical-mistrust-among-black-americans#:~:text=Medical%20Mistrust%20and%20Its%20Impacts&text=Mistrust%20may%20prevent%20people%20from,report%20being%20in%20poor%20health>. Accessed 28 February 2022.

- Oncologists can have a racial bias when treating patients from a different racial or ethnic background, which leads to poor quality care for non-white patients compared to white patients.¹³
- Black and low-income patients can face HCP discrimination and Black patients often experience interactions with HCPs that are disempowering and fail to provide them with sufficient education around treatment choice.^{14,15}
- Patient navigation programs lack standardized guidelines, reimbursement, and integration into the health delivery system to effectively support all patients, particularly those from under-resourced communities.¹⁶

To address the drivers of inequitable care we identified potential policy levers which are summarized in Summary Table 1.

Summary Table 1: Potential policy levers to address barriers to equitable care coordination and delivery

Level	Policy levers to enhance coverage of patient-centric care approaches such as patient navigation services and shared decision-making tools
State	Encourage Medicaid providers to engage in shared decision-making (following the example of Washington legislation). ¹⁷
	Implement demonstration or pilot projects authorized under Section 1115 waivers to promote patient-centric care and which optimize multidisciplinary care for under-resourced TNBC patients. For example, Washington’s Section 1115 Medicaid Transformation Project implements a performance-based incentives system to deliver multi-disciplinary care by aligning entities across the health system, including hospitals, social services, and community-based organizations. ¹⁸ Waivers could support the identification and enrollment of TNBC patient groups that may be susceptible to the burden of multidisciplinary care.

13 National Comprehensive Cancer Network. (2021, February 22). Elevating Cancer Equity: Recommendations to Reduce Racial Disparities in Guideline Adherent Cancer Care. Retrieved from https://www.nccn.org/docs/default-source/oncology-policy-program/2021_elevating_cancer_equity_webinar_slides.pdf?sfvrsn=e11f66e4_2. Accessed 28 February 2022.

14 Anderson, J. N., Graff, J. C., Krukowski, R. A., Schwartzberg, L., Vidal, G. A., Waters, T. M., ... & Graetz, I. (2021). "Nobody Will Tell You. You've Got to Ask!": An Examination of Patient-Provider Communication Needs and Preferences among Black and White Women with Early-Stage Breast Cancer. *Health communication*, 36(11), 1331–1342. <https://doi.org/10.1080/10410236.2020.1751383>.

15 Mead, E. L., Doorenbos, A. Z., Javid, S. H., Haozous, E. A., Alvord, L. A., Flum, D. R., & Morris, A. M. (2013). Shared decision-making for cancer care among racial and ethnic minorities: a systematic review. *American journal of public health*, 103(12), e15–e29. <https://doi.org/10.2105/AJPH.2013.301631>.

16 Freund, K. M., Haas, J. S., Lemon, S. C., Burns White, K., Casanova, N., Dominici, L. S., Erban, J. K., Freedman, R. A., James, T. A., Ko, N. Y., LeClair, A. M., Moy, B., Parsons, S. K., & Battaglia, T. A. (2019). Standardized activities for lay patient navigators in breast cancer care: Recommendations from a citywide implementation study. *Cancer*, 125(24), 4532–4540. <https://doi.org/10.1002/cncr.32432>.

17 Shared decision-making demonstration project—Preference-sensitive care. Wash. Rev. Code § 41.05.033 (2007). <https://app.leg.wa.gov/rcw/default.aspx?cite=41.05.033>.

18 Hinton, E., Stolyar, L. (2021) Medicaid Authorities and Options to Address Social Determinants of Health (SDOH). Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/report-section/medicaid-authorities-and-options-to-address-social-determinants-of-health-sdoh-issue-brief/>. Accessed 12 February 2022.

National	Congress could allocate funds to TNBC community-based organizations to provide services which support patient navigation of treatment and care.
	The Centers for Medicare & Medicaid Services (CMS) could reform the Oncology Care Model (OCM) to improve integration of patient navigators into TNBC multidisciplinary care and address patient unmet needs. For example, screenings for patients’ social determinants of health and linking to community-based organizations can align care delivery incentives to address inequities. ¹⁹

Source: CRA analysis of multiple sources

Supporting access to treatments for TNBC

Based on our literature review, we find evidence of several inequities that affect timely and appropriate patient access to TNBC treatments and that these issues exacerbate health disparities in TNBC treatment:

- Patients that are non-Hispanic Black, Hispanic, and from a lower socioeconomic status are less likely to receive guideline adherent care.²⁰
- Black women are less likely to receive surgery and systemic treatments that are available for TNBC.²¹
- Black women often face treatment initiation delays and prolonged treatment duration which leads to worse survival outcomes.^{22,23,24}
- Access to investigational treatments is worse for women of color and Black and Hispanic women face several structural, attitudinal, socioeconomic, and demographic barriers that lead to poor representation in clinical trials.^{25,26,27}

19 Rawal, P., Cloke, A., Zawistowich, L. (2021, August 13). Making Alternative Payment Models Work For Patients. *Health Affairs Blog*. DOI: 10.1377/hblog20210805.193727.

20 Ubbaonu C., Chang, J., Ziogas, A., Clair, K., Tanjasiri, S.P., Bristow, R.E., ... & Zell, J.A. (2020). Disparities in the receipt of National Comprehensive Cancer Network (NCCN) guideline adherent care in triple-negative breast cancer (TNBC) by race/ethnicity, socioeconomic status, and insurance type. *J Clin Oncol.* ;38(suppl 15): abstract 1080. <https://img.medsci.cn/asc/ASCO2020.pdf>. Accessed March 8, 2022.

21 Cho, B., Han, Y., Lian, M., Colditz, G. A., Weber, J. D., Ma, C., & Liu, Y. (2021). Evaluation of Racial/Ethnic Differences in Treatment and Mortality Among Women With Triple-Negative Breast Cancer. *JAMA oncology*, 7(7), 1016–1023. <https://doi.org/10.1001/jamaoncol.2021.1254>.

22 Wheeler, S. B., Reeder-Hayes, K. E. & Carey, L. A. (2013). Disparities in breast cancer treatment and outcomes: biological, social, and health system determinants and opportunities for research. *Oncologist* 18, 986–993 <https://doi.org/10.1634/theoncologist.2013-0243>.

23 Emerson, M. A., Golightly, Y. M., Aiello, A. E., Reeder-Hayes, K. E., Tan, X., Maduekwe, U., Johnson-Thompson, M., Olshan, A. F., & Troester, M. A. (2020). Breast cancer treatment delays by socioeconomic and health care access latent classes in Black and White women. *Cancer*, 126(22), 4957–4966. <https://doi.org/10.1002/cncr.33121>.

24 Li S, Ma D, Shi HH, Yu KD, Zhang Q. (2018) The effect of delayed adjuvant chemotherapy on relapse of triple-negative breast cancer. *J Thorac Dis* 10(5), 2837-2841. doi: 10.21037/jtd.2018.04.94.

25 Unger, J. M., Cook, E., Tai, E., & Bleyer, A. (2016). The Role of Clinical Trial Participation in Cancer Research: Barriers, Evidence, and Strategies. American Society of Clinical Oncology educational book. *American Society of Clinical Oncology. Annual Meeting*, 35, 185–198. https://doi.org/10.1200/EDBK_156686.

26 Awidi, M., Al Hadidi, S. (2021). Participation of Black Americans in Cancer Clinical Trials: Current Challenges and Proposed Solutions. *JCO Oncology Practice* 17, no. 5. 265-271. DOI: 10.1200/OP.21.00001.

27 Stringer-Reasor, E.M., Elkhanany, A., Khoury, K., Simon, M.A., Newman, L.A. (2021). *American Society of Clinical Oncology Educational Book*, 41, e29-e46, https://ascopubs.org/action/showCitFormats?doi=10.1200/EDBK_319929.

To address the drivers of inequitable treatment provision we identified potential policy levers which are summarized in Executive Summary Table 2.

Executive Summary Table 2: Potential policies to ensure equitable access to TNBC treatment

Level		Policy levers to ensure the provision of clinical guideline-concordant care and support treatment adherence
State		States could encourage the use of CMS’ Merit-based Incentive Payment Systems (MIPS) and Advanced Alternative Payment Models (APMs) to encourage provision of TNBC clinical guideline-adherent care to patients. ²⁸
National		Guidelines could support education of providers to become aware of implicit bias in treatment provision and to identify patients at risk from financial burden and stress to minimize possible treatment delays and maximize adherence to optimal cancer-directed therapy.
Level		Policy levers to address the time and financial cost barriers of accessing treatment, especially through clinical trials
State		Use Section 1115 waivers to provide coverage of ancillary services for patients based on criteria linked to the social determinants of health (following the example of North Carolina). ²⁹ Section 1115 waivers can also be used to incentivize use of patient navigation programs that help under-represented TNBC patients enroll in clinical trials and navigate the trial enrollment processes.
		Patient navigation programs have been found to increase and maintain clinical trial participation of under-resourced communities. ³⁰ Invest Medicaid funding in patient navigation programs that help under-represented patients enroll in clinical trials and navigate the trial enrollment processes.
National		Congress could enact the Cures 2.0 Act (H.R.6000) which includes several provisions to increase the diversity of clinical trials, in particular, to conduct awareness campaigns and increase understanding among typically under-presented populations. This could support TNBC patient access to investigational treatment.

28 U.S. Government Accountability Office (GAO). (2021) Provider Performance and Experiences under the Merit-based Incentive Payment System. Retrieved from: <https://www.gao.gov/assets/gao-22-104667-highlights.pdf>. Accessed 28 February, 2022.

29 Hinton, E., Artiga, S., Musumeci, M., Rudowitz, R. (2019). A First Look at North Carolina’s Section 1115 Medicaid Waiver’s Healthy Opportunities Pilots. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/medicaid/issue-brief/a-first-look-at-north-carolinas-section-1115-medicaid-waivers-healthy-opportunities-pilots/>. Accessed 23 February 2022.

30 Ghebre, R. G., Jones, L. A., Wenzel, J. A., Martin, M. Y., Durant, R. W., & Ford, J. G. (2014). State-of-the-science of patient navigation as a strategy for enhancing minority clinical trial accrual. *Cancer*, 120 Suppl 7(0 7), 1122–1130. <https://doi.org/10.1002/cncr.28570>.

	<p>Congress could pass the DIVERSE Trials Act (S.2706) which promotes access to clinical trials by ensuring the coverage of ancillary costs associated with trial participation, providing patients with technology necessary to facilitate remote participation in clinical trials providing funding, and mandating the Food and Drug Administration (FDA) to develop guidance on decentralizing clinical trials.³¹</p> <p>Following the American Society of Clinical Oncology (ASCO) and Friends of Cancer Research recommendations, community-based organizations, national cancer associations, National Cancer Institute (NCI) and the FDA could consider removing clinical trial eligibility criteria which lead to bias.³² The National Institutes of Health (NIH) and the FDA could also pilot TNBC projects which encourage standardized data collection and reporting to increase accountability for increasing diversity in clinical trials. Congress could provide funding to hospital and community cancer centers to demonstrate equitable recruitment, access, participation, and retention in clinical trials within under-represented populations.</p>
<p>Reduce coverage barriers to genomic testing and foster targeted research</p>	
<p>National</p>	<p>CMS could issue updated guidance associated with the Next Generation Sequencing (NGS) National Coverage Determination (NCD) to address evidence of the inequitable provision of NGS, specifically in TNBC. The updated NCD could be issued alongside culturally sensitive education and awareness materials encouraging physicians to recognize and address any implicit bias. Disparities in NGS uptake across states highlight disparities in state Medicaid coverage policies. States could mandate plans to provide coverage aligned with the CMS NCD.</p> <p>Congress could allocate funding and mandate the NIH to conduct research into the biological and genetic mechanisms that underpin TNBC in high-risk communities.</p>

Source: CRA analysis of multiple sources

Providing coverage and affordability of TNBC treatment

Evidence suggests that breast cancer has the highest treatment costs of any cancer and can cause a high level of financial burden and stress—also referred to as “financial toxicity”—on patients.^{33,34} Based on our literature review we specifically find:

- 31 S.2706 - 117th Congress (2021-2022): DIVERSE Trials Act. (2021, August 10, 2021). Retrieved from <https://www.congress.gov/bill/117th-congress/senate-bill/2706>.
- 32 American Society of Clinical Oncology (ASCO). (2021, February 9). ASCO and Friends of Cancer Research Recommend Expanding Patient Access to Cancer Clinical Trials by Further Broadening Eligibility Criteria. Retrieved from <https://www.asco.org/practice-policy/policy-issues-statements/asco-in-action/asco-and-friends-cancer-research-recommend>. Accessed 22 February 2022..
- 33 Mariotto, A. B., Yabroff, K. R., Shao, Y., Feuer, E. J., & Brown, M. L. (2011). Projections of the cost of cancer care in the United States: 2010-2020. *Journal of the National Cancer Institute*, 103(2), 117–128. <https://doi.org/10.1093/jnci/djq495>.
- 34 National Cancer Institute. (2022, March 4). Financial Toxicity and Cancer Treatment (PDQ)—Health Professional Version. Retrieved from <https://www.cancer.gov/about-cancer/managing-care/track-care-costs/financial-toxicity-hp-pdq>. Accessed March 8, 2022.

- Black women and patients from under-resourced communities are disproportionately at high risk of “financial toxicity”.³⁵
- Out-of-pocket (OOP) costs leave patients with a significant financial burden and medical debt that is particularly onerous for low-income and non-white patients.³⁶
- Insurance design, such as employer-provided high-deductible health plans (HDHP), can contribute to delays in care for low-income women who wait to access care until they are above their annual deductible level to avoid paying high OOP costs.³⁷ Non-white patients are more likely to be uninsured, covered through public insurance plans, or reside in states that have not adopted the Medicaid Expansion and are at risk of falling into the Medicaid “coverage gap.”³⁸
- Medicaid plans are more likely to use prior authorization criteria for TNBC treatments. High rates of prior authorization approval in breast cancer indicate that this restriction places an unnecessary burden on community-based health centers and negatively impacts access, timely receipt, and adherence to treatment.^{39,40}

To address the drivers of inequitable access to TNBC treatment we identified potential policy levers which are summarized in Summary Table 3.

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- 35 Jagsi, R., Pottow, J. A., Griffith, K. A., Bradley, C., Hamilton, A. S., Graff, J., Katz, S. J., & Hawley, S. T. (2014). Long-term financial burden of breast cancer: experiences of a diverse cohort of survivors identified through population-based registries. *J. Clin. Oncol.* 32(12), 1269–1276. <https://doi.org/10.1200/JCO.2013.53.0956>.
- 36 Prakash, O., Hossain, F., Danos, D., Lassak, A., Scribner, R., & Miele, L. (2020). Racial Disparities in Triple Negative Breast Cancer: A Review of the Role of Biologic and Non-biologic Factors. *Frontiers in public health*, 8, 576964. <https://doi.org/10.3389/fpubh.2020.576964>.
- 37 Wharam, J. F., Zhang, F., Wallace, J., Lu, C., Earle, C., Soumerai, S. B., Nekhlyudov, L., & Ross-Degnan, D. (2019). Vulnerable And Less Vulnerable Women In High-Deductible Health Plans Experienced Delayed Breast Cancer Care. *Health affairs (Project Hope)*, 38(3), 408–415. <https://doi.org/10.1377/hlthaff.2018.05026>.
- 38 Artiga, S., Hill, L., Orgera, K., Damico, A. (2021). Health Coverage by Race and Ethnicity, 2010-2019. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/>. Accessed 8 March, 2022.
- 39 Agarwal, A., Freedman, R. A., Goicuria, F., Rhinehart, C., Murphy, K., Kelly, E., Mullaney, E., St Amand, M., Nguyen, P., & Lin, N. U. (2017). Prior Authorization for Medications in a Breast Oncology Practice: Navigation of a Complex Process. *Journal of oncology practice*, 13(4), e273–e282. <https://doi.org/10.1200/JOP.2016.017756>.
- 40 Collins, B.G. (2021, September 20). Improving Care for Underserved People With Cancer and Evaluating Delays in Receiving Cancer Medications: Research from the 2021 Quality Care Symposium. Retrieved from <https://www.cancer.net/blog/2021-09/improving-care-underserved-people-with-cancer-and-evaluating-delays-receiving-cancer-medications>. Accessed 22 February 2022.

Summary Table 3: Potential policies to address the drivers of inequitable coverage and affordability for TNBC treatments

Level		Reduce coverage barriers to TNBC treatment
State		Some states limit Medicaid Pharmacy utilization management, although few are specific to cancer medicines. ⁴¹ States could enact legislation to limit utilization management or pass laws to require at least one TNBC treatment is available without prior authorization based on clinical assessment.
		Affordable Care Act (ACA) and Medicaid expansion is associated with timely access to cancer treatment, particularly among typically under-resourced communities. ⁴² Based on this evidence, states which have not done so could expand Medicaid access. ⁴³
		Leverage Section 1115 and 1905(a) authorities to required federal matching funds to establish and promote Medicaid programs which test flexibilities in Medicaid eligibility, benefits and cost-sharing, and payment mechanisms. These can target TNBC patients from under-resourced communities.
		Identify and support patients at risk of financial toxicity burden
State		Leverage Medicaid Managed Care Organization (MCO) contracts to establish quality requirements which incentivize providers to identify and discuss TNBC patient financial and social needs and to assess patients for potential distress related treatment and financial toxicity. This may help to avoid delays in TNBC treatment initiation associated with apprehension of OOP costs.
		States could partner with and allocate funding to community-based organizations and agencies that are working to minimize potential financial toxicity.

Source: CRA analysis of multiple sources

Clearly the lists above are far-reaching and may include proposals that are infeasible in practice, or where the costs of implementing would be prohibitive. This study should be taken as a starting point for detailed examination of the policies to address health inequity for TNBC patients.

41 Kaiser Family Foundation. State Statutory Limits on Medicaid Pharmacy Utilization Controls 2019. [Data set] Retrieved from <https://www.kff.org/other/state-indicator/state-statutory-limits-on-medicaid-pharmacy-utilization-controls/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>. Accessed February 2, 2022.

42 Lam M.B., Phelan J., Orav E.J., Jha A.K., Keating N.L. (2020) Medicaid Expansion and Mortality Among Patients With Breast, Lung, and Colorectal Cancer. *JAMA Netw Open*, 3(11), doi:10.1001/jamanetworkopen.2020.24366.

43 Adamson, B.J.S., Cohen, A.B., Gross, C.P., Estevez, M., Magee, K., et al. (2021). ACA Medicaid Expansion Association With Racial Disparity Reductions in Timely Cancer Treatment. *Am J Manag Care*, 27(7):274-281. <https://doi.org/10.37765/ajmc.2021.88700>.

1. Introduction

In this study, Charles River Associates (CRA) and Susan G. Komen (Komen) examine the extent to which policies associated with the care and treatment of triple negative breast cancer (TNBC) patients affect the provision of resources for specific communities. The paper also investigates the extent to which policies can exacerbate or ameliorate inequities in TNBC health outcomes among at-risk populations in the United States (U.S.).

It is intended that the findings from this review will inform how tailored policies can support equitable access to care and improve outcomes for TNBC patients. Specifically, we focus on population groups that face barriers and are at risk of developing TNBC, namely women who are Black, Hispanic, young (less than 40 years old), low-income, or reside in areas that are rural, remote geographically, or medical deserts.⁴⁴

The report was conducted for, and funded by, Gilead Sciences (Gilead).

1.1. Background on TNBC in the U.S.

Breast cancer is the most common cancer in the U.S. among women, with approximately 287,850 cases expected to be diagnosed in 2022.⁴⁵ Of these diagnoses, approximately 10%–12% of breast cancers are diagnosed as TNBC, although some sources suggest an estimated 20% of breast cancers may be triple negative.⁴⁶

There are fewer treatment options available for TNBC compared to other types of breast cancer.⁴⁷ TNBC is particularly challenging to treat when it is diagnosed in later stages and women diagnosed with metastatic TNBC have a worse prognosis when compared to other forms of breast cancer.

Black and Hispanic women have a higher relative incidence (21% and 12%, respectively) of the TNBC subtype compared with non-Hispanic white women (10%).⁴⁸ For example, per 100,000 women, approximately 23 Black women were diagnosed with TNBC compared to 12 white women between 2014-18.⁴⁹ Black women are usually diagnosed at younger ages compared to white women (56.3 versus 59.7 years), although at a later stage in disease progression.⁵⁰ TNBC diagnosis of Black

44 *Medical deserts* indicate regions with inadequate access to healthcare services, which may exist in urban or rural areas and contribute to health disparities.

45 American Cancer Society. (2022). Breast cancer facts & figures 2022. Retrieved from <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2022/2022-cancer-facts-and-figures.pdf>. Accessed 28 February, 2022.

46 Breastcancer.org. (2021, August). Triple-negative breast cancer. Retrieved from <https://www.breastcancer.org/symptoms/types/triple-negative>. Accessed 22 February 2022.

47 Skinner, K. E., Haiderali, A., Huang, M., & Schwartzberg, L. S. (2021). Real-world effectiveness outcomes in patients diagnosed with metastatic triple-negative breast cancer. *Future oncology*, 17(8), 931–941. <https://doi.org/10.2217/fon-2020-1021>.

48 American Cancer Society. (2019). Breast cancer facts & figures 2019–2020. Retrieved from <https://www.cancer.org/content/dam/cancerorg/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2019-2020.pdf>. Accessed 22 February 2022.

49 Susan G. Komen. (2021, November). Triple Negative Breast Cancer. Retrieved from <https://www.komen.org/breast-cancer/diagnosis/triple-negative/#:~:text=For%20example%2C%20from%202014%2D2018,54%2C57%2D58%5D>. Accessed 22 February 2022.

50 Sternberg, A. (2021, May 23). *Outcome Data for Black Women With Early TNBC Suggest Research Needed to Combat Disparities*. Retrieved from the Cancer Network website: <https://www.cancernetwork.com/view/outcome-data-for-black-women-with-early-tnbc-suggest-research-needed-to-combat-disparities>. Accessed 28 February 2022.

women tends to occur at later stages of the disease, with larger and more aggressive tumors, positive lymph node tissue, and poor differentiation compared to white women.⁵¹ Research has found that residing in an economically disadvantaged neighborhood (while not impacting disparities in incidence) is significantly associated with receiving a TNBC diagnosis at a more advanced stage and poorer stage-specific survival outcomes.⁵² Furthermore, non-Hispanic Black women have been found to have lower 3-year survival rates than non-Hispanic white women (79.4% vs. 83.1%).⁵³

The social determinants of inequitable TNBC care

There are existing reports that set out the evidence of disparities in TNBC patient outcomes and how these can in part be explained by health inequities. Specifically, the inequitable distribution of resources which underpin the social determinants of health (healthy living support, access to care, social support, and insurance) can lead to disparities in health outcomes. For example, people of color are more likely to have a greater likelihood of chronic disease or comorbidities such as obesity and diabetes.⁵⁴ These alone, and in interaction with biological risk factors, may also affect the prevalence and trajectory of TNBC in Black, Hispanic, and low-income women.^{55,56}

Policy intervention to address the disparities in diagnosis are clearly important. For example, in a previous report CRA found that policies which target under-resourced communities with limited access to early detection resources such as MRI screening for those at high-risk and appropriate follow-up diagnostic care are critical to ensure timely diagnosis once an abnormality has been detected through initial screening.⁵⁷ Further, some communities already face poor TNBC prognosis due to greater, and increasing likelihood of late, distant-stage (the cancer has spread to “distant” parts of the body) diagnosis.

This report considers inequities in the care and treatment phases of the TNBC patient journey.

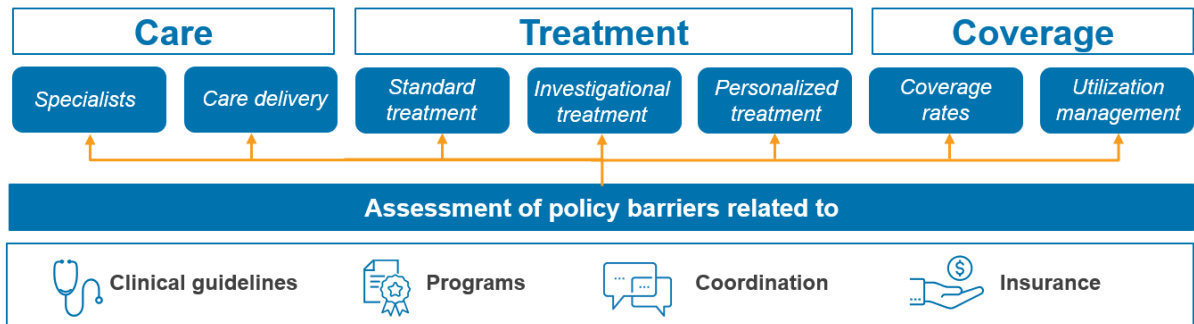
1.2. Our approach

For this policy analysis, we undertook a literature review focusing on official policy documents and academic research. Key policy components were identified and aligned to the TNBC patient journey.

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- 51 Sternberg, A. (2021, May 23). *Outcome Data for Black Women With Early TNBC Suggest Research Needed to Combat Disparities*. Retrieved from the Cancer Network website: <https://www.cancernetwork.com/view/outcome-data-for-black-women-with-early-tnbc-suggest-research-needed-to-combat-disparities>. Accessed 28 February 2022.
- 52 Hossain, F., Danos, D., Prakash, O., Gilliland, A., Ferguson, T. F., Simonsen, N., Leonardi, C., Yu, Q., Wu, X. C., Miele, L., & Scribner, R. (2019). Neighborhood Social Determinants of Triple Negative Breast Cancer. *Frontiers in public health*, 7(18), <https://doi.org/10.3389/fpubh.2019.00018>.
- 53 Fei Wang, Wei Zheng, Christina E. Bailey, Ingrid A. Mayer, Jennifer A. Pietenpol and Xiao-Ou Shu. (2021, February 15). Racial/Ethnic Disparities in All-Cause Mortality among Patients Diagnosed with Triple-Negative Breast Cancer. *Cancer Res.* (81) (4) 1163-1170, DOI: 10.1158/0008-5472.CAN-20-3094.
- 54 Thorpe, K.E., Chin, K.K., Cruz, Y., Innocent, M.A., Singh, L. (2017, August 17). "The United States Can Reduce Socioeconomic Disparities By Focusing On Chronic Diseases", *Health Affairs Blog*. Retrieved from <https://www.healthaffairs.org/doi/10.1377/forefront.20170817.061561/full/>. Accessed 28 February, 2022.
- 55 Prakash, O., Hossain, F., Danos, D., Lassak, A., Scribner, R., & Miele, L. (2020). Racial disparities in triple negative breast cancer: A review of the role of biologic and non-biologic factors. *Frontiers in Public Health*, 8, 576964. <https://doi.org/10.3389/fpubh.2020.576964>.
- 56 Rey-Vargas, L., Sanabria-Salas, C. M., Fejerman, L., & Serrano-Gómez, S. J. (2019). Risk factors for triple-negative breast cancer among Latina women. *Cancer Epidemiology, Biomarkers & Prevention*, 28(11) 1771–1783. <https://cebp.aacrjournals.org/content/28/11/1771>.
- 57 Axelsen, K., Jayasuriya, R., Zacharko, C., Karmo, M. (2021, October). Disparities in screening and diagnosis for triple negative breast cancer. *Charles River Associates*. Retrieved from <https://media.crai.com/wp-content/uploads/2021/10/04132314/CRA-Gilead-Disparities-in-Screening-and-Diagnosis-TNBC.pdf>. Accessed 28 February 2022.

We focused on the phases of the TNBC patient journey following patient diagnosis: care, treatment, and coverage (Figure 1).

Figure 1: Patient journey and access to TNBC treatment and care



Source: CRA analysis

We evaluate the extent to which care and treatment policies and programs for TNBC patients support the needs of women who are facing barriers and are at risk of TNBC (namely women who are Black, Hispanic, young (less than 40 years old), low-income, or who live in areas that are rural or remote geographically or medical deserts) and reduce health inequities that lead to health disparities. To do this we conducted a comprehensive search of academic literature, government reports, online newspaper articles, blogs, patient advocacy group websites, and medical association publications. Our search terms included “triple negative breast cancer,” “oncology,” “legislation,” “policy,” and “program.” To identify documents with details specific to each component of the treatment and care patient journey, we used additional relevant terms such as, “specialists,” “diversity,” “cultural competency,” “treatment,” “access,” “genomic testing,” “clinical trials,” “treatment awareness,” “shared decision-making,” “monitoring,” “navigation,” “cancer center,” “coverage,” “affordability,” and “cost-share.” Finally, to identify the extent to which policies affect health inequities and disparities, we combined the terms listed above with search terms such as “inequity,” “disparity,” “systemic racism,” and terms relevant to our key populations such as “Black” and “Hispanic.”

The review included approximately 200 academic studies, cancer organization whitepaper reports, state and federal government documents and media articles, and focused on examining research published in the last 10 years. To ensure that the policy landscape captured the real-world patient perspective, we integrated insights from Susan G. Komen, a patient advocacy organization with a mission to “save lives by meeting the most critical needs in our communities and investing in breakthrough research to prevent and cure breast cancer.”

1.3. Structure of the report

This remainder of the report is structured as follows:

- Section 2 examines the drivers of inequitable care coordination
- Section 3 evaluates the challenges to TNBC treatment access
- Section 4 reviews the impact of coverage barriers on the affordability of TNBC treatment
- Section 5 draws conclusions with our policy recommendations

2. Care coordination and delivery

Care coordination approaches are associated with improved cancer care outcomes, especially among under-resourced patient groups.⁵⁸ For TNBC, care coordination is challenging given the multi-disciplinary nature of clinical care provision involving specialist health care professionals (HCPs) including: surgical oncologists, medical oncologists, radiation oncologists, pathologists, plastic surgeons, fertility preservation specialists, pharmacists, pain management specialists, psychiatrists, genetic counseling specialists, and specialist breast care nurses.^{59,60} In this section, we discuss the barriers to effective care coordination for under-resourced TNBC patients.

2.1. Barriers to patient-centric TNBC care

The provision of patient-centric cancer care for under-resourced patients can be achieved through linkage to care and resources within their community, a multi-disciplinary team to coordinate their treatment, and HCPs that demonstrate cultural humility, build trust, and meet individual patient needs.^{61, 62} In this sub-section we discuss the challenges associated with equitable patient-centric care provision.

Access barriers to community providers

Many under-resourced populations receive their cancer care at community-based, federally qualified health centers (FQHCs).⁶³ Community-based programs and care have an important role in providing patient-centric care and improving health outcomes of cancer patients. Many community health centers are located in rural or low-income regions and provide under-resourced communities with a high level of care coordination.⁶⁴ However, evidence suggests that 66% of rural counties do not have an oncologist and a large proportion of specialty care is concentrated within certain geographies.⁶⁵ For example, 10% of oncologists in the U.S. reside in only three urban counties.^{66,67} The 2020

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- 58 McDowell, B. D., Klemp, J., Blaes, A., Cohee, A. A., Trentham-Dietz, A., Kamaraju, S., ... & Chrischilles, E. A. (2020). The association between cancer care coordination and quality of life is stronger for breast cancer patients with lower health literacy: A Greater Plains Collaborative study. *Supportive care in cancer: official journal of the Multinational Association of Supportive Care in Cancer*, 28(2), 887–895. <https://doi.org/10.1007/s00520-019-04894-y>.
- 59 Moffitt Cancer Center. (2018). *Your Triple Negative Breast Cancer Specialists*. Retrieved from <https://moffitt.org/cancers/triple-negative-breast-cancer/your-triple-negative-breast-cancer-specialists/>. Accessed 28 February 2022.
- 60 Brown T., Cruickshank S., Noblet M. (2021). Specialist breast care nurses for support of women with breast cancer. *Cochrane Database of Systematic Reviews 2021, Issue 1*. Art. No.: CD005634. DOI: 10.1002/14651858.CD005634.pub3.
- 61 Commission on Cancer, American College of Surgeons. (2016). Cancer Program Standards: Ensuring Patient-Centered Care. Retrieved from https://www.facs.org/~media/files/quality%20programs/cancer/coc/2016%20coc%20standards%20manual_interactive%20pdf.ashx. Accessed 28 February 2022..
- 62 Saha, S., Beach, M. C., & Cooper, L. A. (2008). Patient centeredness, cultural competence and healthcare quality. *Journal of the National Medical Association*, 100(11), 1275–1285. [https://doi.org/10.1016/s0027-9684\(15\)31505-4](https://doi.org/10.1016/s0027-9684(15)31505-4).
- 63 Henderson, V., Tossas-Milligan, K., Martinez, E., Williams, B., Torres, P., Mannan, N., ... & Watson, K. S. (2020). Implementation of an integrated framework for a breast cancer screening and navigation program for women from underresourced communities. *Cancer*, 126 Suppl 10, 2481–2493. <https://doi.org/10.1002/cncr.32843>.
- 64 Heath, S. (2017, August 21). How Community Health Centers Support Patient-Centered Care. *Patient Engagement HIT*. Retrieved from <https://patientengagementhit.com/news/how-community-health-centers-support-patient-centered-care>. Accessed 28 February 2022.
- 65 American Society of Clinical Oncology (ASCO). (2021, January 1). Snapshot: State of the Oncology Workforce in America. *JCO Oncology Practice* 17, no. 1. <https://doi.org/10.1200/OP.20.00577>.
- 66 ASCO. (2021, January 1). Snapshot: State of the Oncology Workforce in America. *JCO Oncology Practice* 17, no. 1. <https://doi.org/10.1200/OP.20.00577>.
- 67 *Urban counties*, also referred to as metropolitan counties, is defined as containing a core areas population of ≥ 50,000 residents, as per the US Department of Agriculture (USDA). USDA. (2020). Rural-Urban Continuum Codes. Retrieved from <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>. Accessed 28 February, 2022.

Community Oncology Practice Impact Report data reported that since 2008, 348 community oncology practices have reported financial struggles, 722 have been acquired by hospitals, 203 have undergone mergers or corporate acquisitions, and 435 have closed.⁶⁸ Policies for increased funding can help to ensure that community oncology practices are able to provide optimal care for the patients that rely on them for treatment.⁶⁹

Lack of multidisciplinary care tailored to patients' social needs

Multidisciplinary care aims to improve treatment quality and patient care through the cooperation of different specialized professionals involved in cancer care.⁷⁰ Clinical, evidence-based guidelines recommend a multi-disciplinary approach to cancer care to ensure relevant specialists work together to provide optimal disease management and improve patient outcomes.⁷¹ Guidance from ASCO strongly recommends the use of a multidisciplinary team (MDT) management approach when considering treatment for TNBC patients.⁷² MDT breast cancer care and coordination approaches can streamline patient referrals, treatment initiation, and participation in clinical trials to improve access to innovative therapies that may improve outcomes.⁷³ However, MDT care can also involve more frequent treatment visits that can increase non-medical financial burden related to transportation, childcare, and time away from work, which can disproportionately affect low-income patient groups.⁷⁴ To optimize the benefits of MDT and ensure they are provided equitably to TNBC patients, it is important for providers and health systems to identify and understand the patient groups that may be susceptible to the burden of MDT care through impactful patient data collection.

Limited HCP diversity

Research demonstrates that a diverse health care workforce is important to improve access to health care for people of color and appropriately meet their health needs.⁷⁵ This is true for race and ethnicity.⁷⁶ However, there remains a lack of representation within the health care workforce. For example, in 2018, only 6% of physicians were Black despite Black people making up 12% of the U.S. population. Similar

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- 68 Community Oncology Alliance (COA). (2020, April 24). 2020 Community Oncology Alliance Practice Impact Report. Retrieved from <https://communityoncology.org/study/2020-community-oncology-alliance-practice-impact-report/>. Accessed 28 February 2022.
- 69 Community Oncology Alliance (COA). (2020, April 24). 2020 Community Oncology Alliance Practice Impact Report. Retrieved from <https://communityoncology.org/study/2020-community-oncology-alliance-practice-impact-report/>. Accessed 28 February 2022.
- 70 Taberna, M., Gil Moncayo, F., Jané-Salas, E., Antonio, M., Arribas, L., Vilajosana, E., Peralvez Torres, E., & Mesía, R. (2020). The Multidisciplinary Team (MDT) Approach and Quality of Care. *Frontiers in oncology*, 10, 85. <https://doi.org/10.3389/fonc.2020.00085>.
- 71 Shao, J., Rodrigues, M., Corter, A. L., & Baxter, N. N. (2019). Multidisciplinary care of breast cancer patients: a scoping review of multidisciplinary styles, processes, and outcomes. *Current oncology (Toronto, Ont.)*, 26(3), e385–e397. <https://doi.org/10.3747/co.26.4713>.
- 72 Korde, L. A., Somerfield, M.R., Carey, L.A., et al. (2021). Neoadjuvant Chemotherapy, Endocrine Therapy, and Targeted Therapy for Breast Cancer: ASCO Guideline. *Journal of Clinical Oncology* 39, no. 13. 1485-1505. DOI: 10.1200/JCO.20.03399.
- 73 Osarogiagbon, R.U., Sineshaw, H.M., Unger, J.M., Acuña-Villaorduña, A., Goel, S. (2021). Immune-Based Cancer Treatment: Addressing Disparities in Access and Outcomes. *American Society of Clinical Oncology. Educational Book* 41. 66-78. DOI: 10.1200/EDBK_323523.
- 74 Stringer-Reasor, E. M., Elkhanany, A., Khoury, K., Simon, M.A., Newman, L.A. (2021). Disparities in Breast Cancer Associated With African American Identity. *American Society of Clinical Oncology Educational Book* 41. e29-e46. DOI: 10.1200/EDBK_319929.
- 75 Snyder, C. R., Frogner, B. K., & Skillman, S. M. (2018). Facilitating Racial and Ethnic Diversity in the Health Workforce. *Journal of allied health*, 47(1), 58–65. <https://pubmed.ncbi.nlm.nih.gov/29504021/>.
- 76 Agency for Healthcare Research and Quality (AHRQ). (2020, December). 2019 National Healthcare Quality and Disparities Report. Rockville, MD. *AHRQ Pub. No. 20(21)-0045-EF*. Retrieved from <https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqdr/2019qdr.pdf>. Accessed 28 February 2022.

inequities are true for Hispanic and Asian Americans.⁷⁷ Within oncology, the representation is even smaller, with 3% of the workforce being Black and 4.7% Hispanic.⁷⁸ At the NCI-designated cancer centers, 23 (over a third) “did not have a single Black or Hispanic member” on their leadership teams, and eight cancer centers had leadership teams that were entirely non-Hispanic white.⁷⁹ A national survey of 208 oncologists in December 2020 found that 40% of respondents believe it possible that they have unintentionally had racial bias in treating cancer patients of different racial or ethnic backgrounds. In addition, more than 60% of oncologists agree with the premise that non-white cancer patients are more likely to receive poor quality care than white cancer patients.⁸⁰

Policy efforts to increase workforce diversity to date are limited. The Health Workforce Diversity Act (H.R. 9005) was introduced in 2020 (but not passed) with the aim to award funding to Historically Black Colleges and Universities (HBCU) and other minority-serving institutions to support the engagement and increase of care services for under-resourced populations.⁸¹ Separately, spurred by the COVID-19 pandemic and unrelated to cancer, states such as NY have been implementing Section 1115 waivers to develop pilot programs which integrate implicit bias and cultural competency training.⁸²

2.2. Barriers preventing equitable provision of coordinated care

It is widely documented that care coordination is important to ensure that patient needs and preferences are known, communicated, and appropriately met throughout the delivery of their care.⁸³ Understanding patient needs is dependent on the strength of patient-provider relationships.⁸⁴ The delivery of optimal coordinated care is contingent on the ability of patients to navigate the health system with their diagnosis.⁸⁵ Furthermore, coordination programs are important to remove the burden of navigating the health system from the patient so that they can focus on their cancer treatment and health.⁸⁶ This sub-section considers the challenges associated with the equitable provision of coordinated care.

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- 77 Agency for Healthcare Research and Quality (AHRQ). (2020, December). 2019 National Healthcare Quality and Disparities Report. Rockville, MD. *AHRQ Pub. No. 20(21)-0045-EF*. Retrieved from <https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqdr/2019qdr.pdf>. Accessed 28 February 2022.
- 78 American Society of Clinical Oncology (ASCO). (2020, January 1). Snapshot: State of the Oncology Workforce in America. *JCO Oncology Practice* 17, no. 1. DOI: 10.1200/OP.20.00577.
- 79 Cancer Letter. (2021, June 25). Racial, ethnic minorities are systemically underrepresented in leadership teams across NCI cancer centers. Retrieved from https://cancerletter.com/conversation-with-the-cancer-letter/20210625_1/. Accessed 28 February, 2022.
- 80 National Comprehensive Cancer Network (NCCN). (2021, February 21). *Elevating Cancer Equity: Recommendations to Reduce Racial Disparities in Guideline Adherent Cancer Care*. Retrieved from https://www.nccn.org/docs/default-source/oncology-policy-program/2021_elevating_cancer_equity_webinar_slides.pdf?sfvrsn=e11f66e4_2. Accessed 28 February 2022.
- 81 H.R.9005 - 116th Congress (2019-2020): Health Workforce Diversity Act. (2020, December 17). Retrieved from <https://www.congress.gov/bill/116th-congress/house-bill/9005?s=1&r=63>.
- 82 New York State Department of Health. (2021, August). A Federal-State Partnership to Address Health Disparities Exacerbated by the COVID-19 Pandemic. Retrieved from <http://www.leadingagency.org/?LinkServID=6678B0F6-AD36-4E5D-50845834606E740E>. Accessed 28 February 2022. Retrieved from <http://www.leadingagency.org/?LinkServID=6678B0F6-AD36-4E5D-50845834606E740E>. Accessed 28 February, 2022.
- 83 Agency for Healthcare Research and Quality (AHRQ). (2018, August). Care Coordination. Retrieved from <https://www.ahrq.gov/ncepcr/care/coordination.html>. Accessed 28 February 2022.
- 84 Long, S., Bart, L., Hempstead, K. (2017, September 22). Patient-Centered Care Starts With Patient-Provider Communication. *Health Affairs Blog*. DOI: 10.1377/hblog20170922.062078.
- 85 Simon, M.A., Trosman, J.R., Rapkin, B., Rittner, S.S., Adetoro, E., Kirschner, M.C., ... & Weldon, C.B. (2020). Systematic Patient Navigation Strategies to Scale Breast Cancer Disparity Reduction by Improved Cancer Prevention and Care Delivery Processes. *JCO Oncology Practice* 16, no. 12. e1462-e1470. DOI: 10.1200/JOP.19.00314.
- 86 Interview with Susan G. Komen (2022, February 4).

Impact of medical mistrust on patient interaction with health care systems

Within TNBC care, the relationship between the health care system, the provider specialist, and the patient, can influence the quality of care received. Therefore, it is important that all patients have a strong and trusting relationship with their provider. Black breast cancer patients have been found to be less likely to have their informational needs met by providers, and more frequently report disempowering interactions.⁸⁷ Black patients also report higher levels of medical mistrust in both the trustee and health care organizations, which can prevent them from seeking care and treatment, leading to worse health outcomes.⁸⁸ Mistrust often results from both historical legacies and present-day experiences of discrimination within a health care setting, such as Black patients being undertreated for pain or facing greater difficulty obtaining care compared to their white counterparts.⁸⁹

There is evidence of several policy initiatives which aim to foster improved patient-provider relationships for people facing barriers, although they do not target under-resourced groups specifically. For example, the National Comprehensive Cancer Network (NCCN) guidelines for patients with metastatic breast cancer recommend shared decision-making, noting patients should be aware of their treatment options, benefits, risks, and relevance to their cancer.⁹⁰ The guidelines also list questions patients can refer to when engaging in shared decision-making with their health care provider (HCP).⁹¹ Shared decision-making is especially important as there are many treatment options available for TNBC, for example, “when deciding between a lumpectomy and mastectomy, it is important for women to get all the facts, weigh their options and ask questions in order to arrive at the best treatment option for them.”⁹² Other patient-specific traits may influence treatment decisions, including religious or spiritual beliefs, cost of treatment, or distance required for travel to treatment centers.⁹³ The NCCN guidelines for patients also have a list of questions patients can ask their doctor about diagnosis and prognosis, options, treatment, clinical trials, which can support shared decision-making conversations.⁹⁴

Further, there are policies at the state level. Since 2016, Washington (WA) state has implemented legislation which supports shared decision-making and certifies patient decision aids and tools to support

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- 87 Anderson, J.A., Graff, J.C., Krukowski, R.A., et al. (2021) “Nobody Will Tell You. You’ve Got to Ask!”: An Examination of Patient-Provider Communication Needs and Preferences among Black and White Women with Early-Stage Breast Cancer, *Health Communication*, 36:11, 1331-1342, DOI: 10.1080/10410236.2020.1751383.
- 88 Hostetter, M., Klein, S. (2021, January 14). The Commonwealth Fund. Understanding and Ameliorating Medical Mistrust Among Black Americans. Retrieved from <https://www.commonwealthfund.org/publications/newsletter-article/2021/jan/medical-mistrust-among-black-americans#:~:text=Medical%20Mistrust%20and%20Its%20Impacts&text=Mistrust%20may%20prevent%20people%20from,report%20being%20in%20poor%20health>. Accessed 28 February, 2022.
- 89 Hostetter, M., Klein, S. (2021, January 14). Understanding and Ameliorating Medical Mistrust Among Black Americans. *The Commonwealth Fund*. Retrieved from <https://www.commonwealthfund.org/publications/newsletter-article/2021/jan/medical-mistrust-among-black-americans#:~:text=Medical%20Mistrust%20and%20Its%20Impacts&text=Mistrust%20may%20prevent%20people%20from,report%20being%20in%20poor%20health>. Accessed 28 February, 2022.
- 90 National Comprehensive Cancer Network (NCCN). (2020). *NCCN Guidelines for Patients: Metastatic Breast Cancer*. Retrieved from https://www.nccn.org/patients/guidelines/content/PDF/stage_iv_breast-patient.pdf. Accessed 28 February.
- 91 National Comprehensive Cancer Network (NCCN). (2020). *NCCN Guidelines for Patients: Metastatic Breast Cancer*. Retrieved from https://www.nccn.org/patients/guidelines/content/PDF/stage_iv_breast-patient.pdf. Accessed 28 February., 2022.
- 92 Penn Medicine. (n.d.) Triple-Negative Breast Cancer Treatment. Retrieved from <https://www.pennmedicine.org/cancer/types-of-cancer/breast-cancer/triplegenegative-breast-cancer/triplegenegative-breast-cancer-treatment#tab-1>. Accessed 28 February.
- 93 National Comprehensive Cancer Network (NCCN). (2020). *NCCN Guidelines for Patients: Metastatic Breast Cancer*. Retrieved from https://www.nccn.org/patients/guidelines/content/PDF/stage_iv_breast-patient.pdf. Accessed 28 February.
- 94 National Comprehensive Cancer Network (NCCN). (2020). *NCCN Guidelines for Patients: Metastatic Breast Cancer*. Retrieved from https://www.nccn.org/patients/guidelines/content/PDF/stage_iv_breast-patient.pdf. Accessed 28 February.

physician-patient communication about care options.⁹⁵ This could address medical mistrust by increasing education around treatment choices, supporting acknowledgement of cultural beliefs, and sensitivity and emotional support during treatment and can improve treatment adherence and therefore outcomes.^{96,97,98} State legislation is significant given evidence that privately insured Black breast cancer patients are less likely to experience medical mistrust than those who are publicly insured through Medicaid.⁹⁹

However, clinical guidelines and state legislation to support shared decision-making are only as useful as patients feel comfortable raising such questions, and often patients report feeling overwhelmed with the information they are receiving. Research suggests that women of color undergoing breast cancer treatment are significantly less satisfied with the decision-making process than white women.¹⁰⁰ When patients feel disempowered and excluded from the decision-making process, they tend to adhere poorly to treatment, as a study of Black women with breast cancer found.¹⁰¹ Indeed, research has found that there are inequities in the implementation of shared decision-making and that patients with low socio-economic status or past negative health care experiences are less likely to be engaged in this process.¹⁰²

Underfunded patient navigation programs

The literature emphasizes the challenges of navigating the health care system. Patient navigation is an intervention to reduce barriers to timely cancer care, specifically aimed at patients of color and patients facing barriers due to geographical location or income and thereby reducing health inequities.^{103,104} Research shows that Hispanic survivors of breast (and other) cancers who were provided patient navigation services had improved quality of life and treatment adherence compared to patients who did not receive such services.¹⁰⁵ In under-resourced health settings, patient navigators

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- 95 Washington State Healthcare Authority. (n.d.) Patient decision aids (PDAs). Retrieved from <https://www.hca.wa.gov/about-hca/making-informed-health-care-decisions/patient-decision-aids-pdas>. Accessed 28 February 2022.
- 96 Sheppard, V. B., Adams, I. F., Lamdan, R., & Taylor, K. L. (2011). The role of patient-provider communication for black women making decisions about breast cancer treatment. *Psycho-oncology*, *20*(12), 1309–1316. <https://doi.org/10.1002/pon.1852>.
- 97 Mott-Coles, S. (2014). Patients' Cultural Beliefs in Patient-Provider Communication With African American Women and Latinas Diagnosed With Breast Cancer. *CJON*, *18*(4), 443–448 DOI: 10.1188/14.CJON.443-448.
- 98 Anderson, J.A., Graff, J.C., Krukowski, R.A., et al. (2021) "Nobody Will Tell You. You've Got to Ask!": An Examination of Patient-Provider Communication Needs and Preferences among Black and White Women with Early-Stage Breast Cancer, *Health Communication*, *36*:11, 1331-1342, DOI: 10.1080/10410236.2020.1751383.
- 99 Sutton, A. L., He, J., Edmonds, M. C., & Sheppard, V. B. (2019). Medical Mistrust in Black Breast Cancer Patients: Acknowledging the Roles of the Trustor and the Trustee. *Journal of cancer education: the official journal of the American Association for Cancer Education*, *34*(3), 600–607. <https://doi.org/10.1007/s13187-018-1347-3>.
- 100 Mead, E. L., Doorenbos, A. Z., Javid, S. H., Haozous, E. A., Alvord, L. A., Flum, D. R., & Morris, A. M. (2013). Shared decision-making for cancer care among racial and ethnic minorities: a systematic review. *American journal of public health*, *103*(12), e15–e29. <https://doi.org/10.2105/AJPH.2013.301631>.
- 101 Nápoles-Springer, A. M., Livaudais, J. C., Bloom, J., Hwang, S., & Kaplan, C. P. (2007). Information exchange and decision making in the treatment of Latina and white women with ductal carcinoma in situ. *Journal of psychosocial oncology*, *25*(4), 19–36. https://doi.org/10.1300/J077v25n04_02.
- 102 Waddell, A., Lennox, A., Spassova, G., & Bragge, P. (2021). Barriers and facilitators to shared decision-making in hospitals from policy to practice: a systematic review. *Implementation science: IS*, *16*(1), 74. <https://doi.org/10.1186/s13012-021-01142-y>.
- 103 Simon, M.A., Trosman, J.R., Rapkin, B., Rittner, S.S., Adetoro, E., Kirschner, M.C., ... & Weldon, C.B. (2020). Systematic Patient Navigation Strategies to Scale Breast Cancer Disparity Reduction by Improved Cancer Prevention and Care Delivery Processes. *Oncology Practice* *16*, no. 12. e1462-e1470. DOI: 10.1200/JOP.19.00314 JCO.
- 104 Riley, S., Riley, C. (2016). The Role of Patient Navigation in Improving the Value of Oncology Care. *Journal of Clinical Pathways*. Retrieved from <https://www.hmpgloballearningnetwork.com/site/jcp/article/role-patient-navigation-improving-value-oncology-care>. Accessed 28 February, 2022
- 105 Ramirez, A. G., Gallion, K. J., Perez, A., Munoz, E., Long Parma, D., Moreno, P. I., & Penedo, F. J. (2019). Improving quality of life among latino cancer survivors: Design of a randomized trial of patient navigation. *Contemporary clinical trials*, *76*, 41–48. <https://doi.org/10.1016/j.cct.2018.11.002>.

have demonstrated capacity to address patients' barriers to care, especially those linked to geographic distance, language or cultural barriers, racial bias, and poor provider-patient relationships.^{106,107} For example, patient navigators can support optimal care coordination by helping patients to:

- Understand their diagnosis and treatment recommendations, which is critical to supporting the shared decision-making processes and improving treatment adherence.¹⁰⁸
- Understand financial concerns and mental health challenges.¹⁰⁹
- Link to social support or transportation.¹¹⁰
- Reduce time to treatment and improve treatment adherence for low-income patients and people of color.¹¹¹

Given the multi-step process of treating TNBC, a patient navigator is helpful to provide individualized assistance and guide a patient throughout their care continuum. However, evidence of TNBC care disparities indicates opportunities for patient navigator programs reform. Variability in how patient navigation programs is implemented could be one reason for the sub-optimal impact on reducing disparities and advancing health outcomes.¹¹² Lay navigators, while culturally and linguistically aligned with the patients they serve, can often have specific yet varied roles and responsibilities, due to the lack of integration and standardization in clinical programs. Some effort towards navigator standards and guidelines has been established by clinical organizations to encourage the use of patient navigator programs, however these remain suggestions for best practice rather than requirements:

- The American College of Surgeons' (ACS) Commission on Cancer (CoC) requires cancer centers to have a patient navigation program to receive accreditation.¹¹³ Further, the CoC requires a center to conduct a Community Needs Assessment (CAN), which is repeated at least every three

106 Wells, K. J., Battaglia, T. A., Dudley, D. J., Garcia, R., Greene, A., Calhoun, E., ..., & Mandelblatt, J. S. Patient Navigation Research Program (2008). Patient navigation: state of the art or is it science? *Cancer*, *113*(8), 1999–2010. <https://doi.org/10.1002/cncr.23815>.

107 Henderson, V., Tossas-Milligan, K., Martinez, E., Williams, B., Torres, P., Mannan, N., ... & Watson, K. S. (2020). Implementation of an integrated framework for a breast cancer screening and navigation program for women from underresourced communities. *Cancer*, *126* Suppl 10, 2481–2493. <https://doi.org/10.1002/cncr.32843>.

108 Mascarenhas, D. (2020, September 12). Navigation Strategies for Patients With Breast Cancer. *Oncology Nurse Advisor*. Retrieved from <https://www.oncologynurseadvisor.com/home/headlines/conference-coverage/ona-navigation-summit-2020/navigation-strategies-for-patients-with-breast-cancer/>. Accessed 28 February, 2022.

109 Mascarenhas, D. (2020, September 12). Navigation Strategies for Patients With Breast Cancer. *Oncology Nurse Advisor*. Retrieved from <https://www.oncologynurseadvisor.com/home/headlines/conference-coverage/ona-navigation-summit-2020/navigation-strategies-for-patients-with-breast-cancer/>. Accessed 28 February, 2022.

110 Mascarenhas, D. (2020, September 12). Navigation Strategies for Patients With Breast Cancer. *Oncology Nurse Advisor*. Retrieved from <https://www.oncologynurseadvisor.com/home/headlines/conference-coverage/ona-navigation-summit-2020/navigation-strategies-for-patients-with-breast-cancer/>. Accessed 28 February, 2022.

111 Castaldi, M., Safadjou, S., Elrafei, T., & McNelis, J. (2017). A Multidisciplinary Patient Navigation Program Improves Compliance With Adjuvant Breast Cancer Therapy in a Public Hospital. *American journal of medical quality*, *32*(4), 406–413. <https://doi.org/10.1177/1062860616656250>.

112 Freund, K. M., Haas, J. S., Lemon, S. C., Burns White, K., Casanova, N., Dominici, L. S., ... & Battaglia, T. A. (2019). Standardized activities for lay patient navigators in breast cancer care: Recommendations from a citywide implementation study. *Cancer*, *125*(24), 4532–4540. <https://doi.org/10.1002/cncr.32432>.

113 Commission on Cancer (CoC); American College of Surgeons (ACoS). (2016). *Cancer Program Standards: Ensuring Patient-Centered Care*. Retrieved from https://www.facs.org/~media/files/quality%20programs/cancer/coc/2016%20coc%20standards%20manual_interactive%20pdf.ashx. Accessed 28 February 2022.

years, in order to ensure that the navigation appropriately addresses barriers to cancer care and health care disparities.¹¹⁴

- In 2021, the National Minority Quality Forum’s (NMQF) Diverse Cancer Communities Working Group developed a framework to “Address Cancer Care Disparities in Medically Underserved Populations,” which prioritizes patient navigation. The framework aims to provide insight into strategies, approaches and policies that can be implemented to provide underserved populations with optimal care through the continuum.¹¹⁵

Separately, states such as California (CA) have used Section 1115 waivers to develop pilot programs which aim to increase patient navigation and community-based support. CA’s “Whole Person Care” pilot program aims to provide beneficiaries care coordination and navigation support for public health and social services.¹¹⁶ The pilot defines a target population to ensure the program addresses unmet needs.

At the national level, proposed models of cancer care through bundled programs have been recognized as a mechanism to provide sustainable funding for patient navigators and were included in the CMS’ Oncology Care Model (OCM) pilot.^{117,118} However, the OCM pilot is due to end in 2022 and the support for long-term funding of patient navigator programs remains uncertain.¹¹⁹

Overall, state reliance on Section 1115 waivers and CMS pilot programs indicate that patient navigator programs lack consistent reimbursement and depend too heavily on short-term funding and grants.^{120,121} There is evidence of cancer centers limiting or omitting patient navigator services due to the cost burden.¹²² While the 2005 Patient Navigator, Outreach and Chronic Disease Prevention Act provided funds to the Health Resources and Services Administration (HRSA) for the development and

114 Commission on Cancer (CoC); American College of Surgeons (ACoS). (2016). *Cancer Program Standards: Ensuring Patient-Centered Care*. Retrieved from https://www.facs.org/~media/files/quality%20programs/cancer/coc/2016%20coc%20standards%20manual_interactive%20pdf.ashx. Accessed 28 February 2022.

115 Winkfield, K. M., Regnante, J. M., Miller-Sonet, E., González, E. T., Freund, K. M., & Doykos, P. M. (2021). Development of an Actionable Framework to Address Cancer Care Disparities in Medically Underserved Populations in the United States: Expert Roundtable Recommendations. *JCO oncology practice*, 17(3), e278–e293. <https://doi.org/10.1200/OP.20.00630>.

116 California Association of Public Hospitals and Health Systems (CAPH). (2018). *Whole Person Care*. Retrieved from <https://caph.org/wp-content/uploads/2018/05/WPC-Brochure-7.20.2018.pdf>. Accessed 28 February 2022.

117 Kline, R., Adelson, K., Kirshner, J. J., Strawbridge, L. M., Devita, M., Sinanis, N., ... & Basch, E. (2017). The Oncology Care Model: Perspectives From the Centers for Medicare & Medicaid Services and Participating Oncology Practices in Academia and the Community. *American Society of Clinical Oncology educational book. American Society of Clinical Oncology. Annual Meeting*, 37, 460–466. https://doi.org/10.1200/EDBK_174909.

118 Abt Associates. (2021, January). *Evaluation of the Oncology Care Model: Performance Periods 1–5*. Retrieved from <https://innovation.cms.gov/data-and-reports/2021/ocm-evaluation-pp1-5>. Accessed 28 February 2022.

119 Osundina, F., Garfield K., & Downer, S. (n.d.) National Navigation Roundtable. Retrieved from http://navigationroundtable.org/wp-content/uploads/Patient-Navigation-in-Cancer-Care-Review-of-Payment-Models_FINAL.pdf. Accessed 28 February 2022. http://navigationroundtable.org/wp-content/uploads/Patient-Navigation-in-Cancer-Care-Review-of-Payment-Models_FINAL.pdf. Accessed 28 February, 2022.

120 Simon, M.A., Trosman, J.R., Rapkin, B. et al. (2020). Systematic Patient Navigation Strategies to Scale Breast Cancer Disparity Reduction by Improved Cancer Prevention and Care Delivery Processes. *JCO Oncology Practice* 16, no. 12. e1462-e1470. DOI: 10.1200/JOP.19.00314.

121 Osundina, F., Garfield K., Downer, S. (n.d.) National Navigation Roundtable. *American Cancer Society*. Retrieved from http://navigationroundtable.org/wp-content/uploads/Patient-Navigation-in-Cancer-Care-Review-of-Payment-Models_FINAL.pdf. Accessed 28 February 2022.

122 Kline, R. M., Rocque, G. B., Rohan, E. A., Blackley, K. A., Cantril, C. A., Pratt-Chapman, M. L., Burris, H. A., & Shulman, L. N. (2019). Patient Navigation in Cancer: The Business Case to Support Clinical Needs. *Journal of oncology practice*, 15(11), 585–590. <https://doi.org/10.1200/JOP.19.00230>.

operation of patient navigation services, how the funds are allocated and used is unclear.^{123,124} To ensure long-term sustainability, patient navigation services must ultimately be fully integrated into the health care delivery system and recognized as a covered service by both public and private health insurance payers.¹²⁵

2.3. Summary

The literature documents how it is critical that patients receive comprehensive care and that they feel informed and empowered as part of the treatment decision-making process. However, there remain several inequities within care coordination and delivery for TNBC, summarized in Table 1.

Table 1: Summary of inequities for TNBC care coordination and delivery

Key takeaways
1. Community health centers and community oncology clinics, which serve many patients from under-resourced communities, often report financial challenges. Furthermore, there is poor accessibility to oncologists for patients that reside in rural areas.
2. Low-income populations can experience time burden from the time requirements of multidisciplinary team (MDT) care, despite it being an approach that improves cancer outcomes.
3. Black and Hispanic Americans are underrepresented in the health care workforce, especially within oncology, which perpetuates low levels of trust and unmet health needs of people of color.
4. There is evidence of racial bias leading to poorer quality care for non-white patients compared to white patients. Low-income patients encounter and perceive higher levels of HCP discrimination.
5. Black patients often experience disempowering interactions with HCPs and less effective education around treatment choice, which negatively impacts treatment adherence and outcomes.

¹²³ Patient Navigator Outreach and Chronic Disease Prevention Act of 2005, Pub. L. 109-18, 119 Stat. 340 (2005). <https://www.congress.gov/109/plaws/publ18/PLAW-109publ18.pdf>.

¹²⁴ This Act requires patient navigators to perform six duties: coordinate health services, facilitate the involvement of community organizations, notify patients of clinical trials, support patients in overcoming health system barriers, coordinate with insurance programs, and conduct ongoing outreach to underserved populations facing health disparities. The Act mandates the use of funds for cancer or other chronic disease patients with the purpose of improving outcomes among “health disparity populations, including the uninsured, rural populations, and other medically underserved populations.

¹²⁵ Osundina, F. Garfield K., Downer, S. (n.d.) National Navigation Roundtable. *American Cancer Society*. Retrieved from http://navigationroundtable.org/wp-content/uploads/Patient-Navigation-in-Cancer-Care-Review-of-Payment-Models_FINAL.pdf. Accessed 28 February, 2022.

6. Patient navigation programs can improve treatment initiation, experience, and adherence. However, these programs lack standardized guidelines, reimbursement, and integration into the health delivery system to effectively support all patients.

Source: CRA analysis of multiple sources

3. Equitable access to TNBC treatments

As set out in Section 1, certain patient groups, for example, Black women, experience worse outcomes for both progression free survival and overall survival rates.¹²⁶ Reasons for the inequity are multi-factorial, related to earlier onset of disease, more advanced stage at diagnosis, and tumor characteristics in Black women.¹²⁷ Although one concern is that this is related to inequities in access to treatment, our literature review highlighted that assessing inequities in treatment access is complex and the evidence is inconclusive.^{128,129} Many factors - including comorbidities, lack of insurance, and lack of referral to a medical oncologist - have been found to partly explain the under-provision of effective treatments, particularly for women of color.¹³⁰

We find that timely access to treatment is critical to a positive outcomes and patient survival:¹³¹ TNBC is both more aggressive and has fewer treatment options than other breast cancer (BC) types, as it is not treated with hormone therapy or HER2-targeted therapy since it lacks receptors for both.¹³² As Table 1 demonstrates, treatment for TNBC usually involves a combination of surgery to remove the tumor, radiation to kill any remaining cells, and chemotherapy and immunotherapy to ensure that cancer cells that may have spread to other parts of the body are also destroyed.¹³³ Further, as TNBC stage progresses, the typical treatments and goals of treatment evolve.^{134,135}

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- 126 Skinner, K. E., Haiderali, A., Huang, M., & Schwartzberg, L. S. (2021). Real-world effectiveness outcomes in patients diagnosed with metastatic triple-negative breast cancer. *Future oncology*, 17(8), 931–941. <https://doi.org/10.2217/fon-2020-1021>.
- 127 Siddharth, S., & Sharma, D. (2018). Racial Disparity and Triple-Negative Breast Cancer in African-American Women: A Multifaceted Affair between Obesity, Biology, and Socioeconomic Determinants. *Cancers*, 10(12), 514. <https://doi.org/10.3390/cancers10120514>.
- 128 Balasubramanian, B. A., Demissie, K., Crabtree, B. F., Ohman Strickland, P. A., Kohler, B., & Rhoads, G. G. (2010). Racial differences in adjuvant systemic therapy for early breast cancer among Medicaid beneficiaries. *The breast journal*, 16(2), 162–168. <https://doi.org/10.1111/j.1524-4741.2009.00877.x>.
- 129 Bickell, N. A., Wang, J. J., Oluwole, S., Schrag, D., Godfrey, H., Hiotis, K., ... & Guth, A. A. (2016). Missed Opportunities: Racial Disparities in Adjuvant Breast Cancer Treatment. *Journal of Clinical Oncology* 24, no. 9. 1357-1362. DOI: 10.1200/JCO.2005.04.5799.
- 130 Bickell, N. A., Wang, J. J., Oluwole, S., Schrag, D., Godfrey, H., Hiotis, K., ... & Guth, A. A. (2016). Missed Opportunities: Racial Disparities in Adjuvant Breast Cancer Treatment. *Journal of Clinical Oncology* 24, no. 9. 1357-1362. DOI: 10.1200/JCO.2005.04.5799.
- 131 Ho, P. J., Cook, A. R., Binte Mohamed Ri, N. K., Liu, J., Li, J., & Hartman, M. (2020). Impact of delayed treatment in women diagnosed with breast cancer: A population-based study. *Cancer medicine*, 9(7), 2435–2444. <https://doi.org/10.1002/cam4.2830>.
- 132 Breastcancer.org. (2021, August 28). Triple-Negative Breast Cancer. Retrieved from <https://www.breastcancer.org/symptoms/types/triple-negative>. Accessed 28 February 2022.
- 133 Centers for Disease Control and Prevention (CDC). *Triple-Negative Breast Cancer*. Retrieved from <https://www.cdc.gov/cancer/breast/triple-negative.htm>. Accessed 28 February 2022. Accessed 28 February, 2022.
- 134 American Cancer Society. (2021, October 27). *Treatment of Triple-negative Breast Cancer*. Retrieved from <https://www.cancer.org/cancer/breast-cancer/treatment/treatment-of-triple-negative.html>. Accessed 28 February 2022.
- 135 Penn Medicine (n.d.) Triple-Negative Breast Cancer Staging. Retrieved from: <https://www.pennmedicine.org/cancer/types-of-cancer/breast-cancer/types-of-breast-cancer/triplegenegative-breast-cancer/triplegenegative-breast-cancer-diagnosis/triplegenegative-breast-cancer-staging#:~:text=Stage%20%20means%20the%20cancer,lymph%20nodes%20or%20distant%20sites>. Accessed 28 February 2022.

Figure 2: Types of TNBC treatments by stage

	Description	TNBC-specific considerations
Surgery	<p>Surgery performed depends on the size, location, and stage of the tumor at diagnosis and may involve removal of nearby lymph node tissue to determine if the cancer has spread.¹³⁶</p> <ul style="list-style-type: none"> • Lumpectomy (removes the cancerous lump) or • Mastectomy (removes the breast) 	<p>A bilateral mastectomy may be performed for patients with a breast cancer gene (“BRCA”) mutation or high risk of recurrence.¹³⁷</p>
Radiation / Radiotherapy	<p>The more breast tissue preserved through surgery the greater the need for radiation therapy after surgery.¹³⁸</p>	<p>Research suggests that TNBC may be less sensitive to radiotherapy than other breast cancer subtypes.¹³⁹</p>
Chemotherapy / systemic treatments	<p>The NCCN guidelines recommend chemotherapy treatment regimens for TNBC based on some combination of a taxane, anthracycline, cyclophosphamide, cisplatin, and fluorouracil.¹⁴⁰</p>	<p>Genetic subtypes of TNBC tumors can differentially respond to treatments. Multigene testing was added into updated NCCN guidelines for Breast Cancer in 2019 to support personalized systemic adjuvant therapy choices.^{141,142}</p> <p>To treat advanced TNBC, the 2021 and 2019 adaptations to the NCCN guidelines include new systemic therapy recommendations that replace the recommendation for multiple lines of chemotherapy.^{143,144}</p> <p><i>BRCA1/2 mutations:</i> talazoparib and olaparib</p> <p><i>TNBC expressing PD-L1:</i> durvalumab, pembrolizumab, atezolizumab.</p> <p><i>Previously treated and metastatic TNBC:</i> antibody-drug conjugate sacituzumab govitecan.</p>

Source: CRA analysis of multiple sources

136 Centers for Disease Control and Prevention (CDC). *Triple-Negative Breast Cancer*. Retrieved from <https://www.cdc.gov/cancer/breast/triple-negative.htm>. Accessed 28 February 2022.

137 Triple Negative Breast Cancer. State-of-the-Art Treatment for Triple Negative Breast Cancer: Talking With the Experts. Retrieved from: <https://tnbc-prd.s3.amazonaws.com/8b74dd9e-b689-4bc6-afd9-e0942752f89a/State-of-the-Art-Treatment-for-TNBC.pdf>. Accessed 28 February 2022.

138 Penn Medicine. (2021, September 20). *Triple-Negative Breast Cancer Treatment*. Retrieved from: <https://www.pennmedicine.org/cancer/types-of-cancer/breast-cancer/types-of-breast-cancer/triplegenegative-breast-cancer/triplegenegative-breast-cancer-treatment#tab-1>. Accessed 28 February 2022.

139 He, M. Y., Rancoule, C., Rehailla-Blanchard, A., Espenel, S., Trone, J. C., Bernichon, E., Guillaume, E., Vallard, A., & Magné, N. (2018). Radiotherapy in triple-negative breast cancer: Current situation and upcoming strategies. *Critical reviews in oncology/hematology*, 131, 96–101. <https://doi.org/10.1016/j.critrevonc.2018.09.004>.

140 Yin, L., Duan, JJ., Bian, XW. et al. (2020). Triple-negative breast cancer molecular subtyping and treatment progress. *Breast Cancer Res* 22, 61. <https://doi.org/10.1186/s13058-020-01296-5>.

141 Telli, M.L., Gradishar, W.J., Ward, J.H. (2019, May). NCCN Guidelines Updates: Breast Cancer. *Official Journal of the National Comprehensive Cancer Network. Volume 17: Issue 5.5*. <https://doi.org/10.6004/jnccn.2019.5006>.

142 Yin, L., Duan, JJ., Bian, XW. et al. (2020). Triple-negative breast cancer molecular subtyping and treatment progress. *Breast Cancer Res* 22, 61. <https://doi.org/10.1186/s13058-020-01296-5>.

143 Telli, M.L., Gradishar, W.J., Ward, J.H. (2019, May). NCCN Guidelines Updates: Breast Cancer. *Official Journal of the National Comprehensive Cancer Network. Volume 17: Issue 5.5*. <https://doi.org/10.6004/jnccn.2019.5006>.

144 Helwick, C., Goodman, A. (2021, May 25). NCCN Clinical Practice Guidelines in Oncology: 2021 Updates. *The ASCO Post*. Retrieved from <https://ascopost.com/issues/may-25-2021/nccn-clinical-practice-guidelines-in-oncology-2021-updates/>. Accessed 28 February, 2022.

As described above, evidence suggests conclusive data about the disparities in adjuvant treatment access is limited since utilization measurement is challenging.¹⁴⁵ However, in this section, we explore some of the factors driving inequities in access to care and the speed at which different patient groups receive treatment.

3.1. Barriers to guideline adherent care

NCCN clinical practice guidelines for TNBC highlight the importance for physicians to recognize “key patient factors” when selecting a treatment regimen.¹⁴⁶ However, this may leave room for implicit bias (unconscious associations that can lead to a negative evaluation of a person on the basis of irrelevant characteristics such as race or gender).¹⁴⁷ Evidence suggests that oncologist implicit bias is likely a source of inequitable treatment provision.¹⁴⁸ The impact of implicit bias on TNBC care can be seen through evidence of disparities in surgery, radiation and treatment access and initiation. It is indicative of treatment departures from evidence-based clinical recommendations and guidelines.¹⁴⁹ Recent studies supports this finding:

- A 2020 retrospective cohort study of 16,858 women with TNBC between 2004 and 2016 found non-Hispanic Black patients, Hispanic patients, and patients of lowest and lower-middle socioeconomic status were less likely to receive guideline-adherent care.¹⁵⁰ The study also found that non-adherent care was associated with increased risk of mortality compared with those who received NCCN-adherent treatment.¹⁵¹
- Research assessing a National Cancer Institute (NCI) database of over 23,000 women with TNBC between 2010 and 2015 suggests that Black patients being treated for breast cancer are 31% less likely to receive surgery and 11% less likely to receive chemotherapy compared to white patients.¹⁵² Black women are also less likely to receive radiotherapy compared to white women.¹⁵³

145 Bickell, N.A., Wang, J.J., Oluwole, S. et al. (2016). Missed Opportunities: Racial Disparities in Adjuvant Breast Cancer Treatment. *Journal of Clinical Oncology* 24, no. 9. 1357-1362. DOI: 10.1200/JCO.2005.04.5799.

146 NCCN. (n.d.) NCCN Guidelines Update: Triple Negative Breast Cancer. Retrieved from <https://education.nccn.org/node/90125>. Accessed 28 February, 2022.

147 FitzGerald, C., Hurst, S. (2017). Implicit bias in healthcare professionals: a systematic review. *BMC Med Ethics* 18, 19. <https://doi.org/10.1186/s12910-017-0179-8>.

148 Penner, L. A., Dovidio, J. F., Gonzalez, R., Albrecht, T. L., Chapman, R., Foster, T., ... & Egly, S. (2016). The Effects of Oncologist Implicit Racial Bias in Racially Discordant Oncology Interactions. *Journal of clinical oncology: official journal of the American Society of Clinical Oncology*, 34(24), 2874–2880. <https://doi.org/10.1200/JCO.2015.66.3658>.

149 Wheeler, S. B., Reeder-Hayes, K. E., & Carey, L. A. (2013). Disparities in breast cancer treatment and outcomes: biological, social, and health system determinants and opportunities for research. *The oncologist*, 18(9), 986–993. <https://doi.org/10.1634/theoncologist.2013-0243>.

150 Ubbaonu C., Chang, J., Ziogas, A., Clair, K., Tanjasiri, S.P., Bristow, R.E., ... & Zell, J.A. (2020). Disparities in the receipt of National Comprehensive Cancer Network (NCCN) guideline adherent care in triple-negative breast cancer (TNBC) by race/ethnicity, socioeconomic status, and insurance type. *J Clin Oncol.*, 38(suppl 15): abstract 1080. Accessed March 8, 2022. <https://img.medsci.cn/asc/ASCO2020.pdf>.

151 Tomblason, R. (2021). Impact of Emerging Clinical Trends on Overall Cost of Care and the Role of the Managed Care Pharmacist. *Am J Manag Care*. 27(suppl 5): S97-S103. <https://doi.org/10.37765/ajmc.2021.88627>.

152 Cho, B., Han, Y., Lian, M., Colditz, G. A., Weber, J. D., Ma, C., & Liu, Y. (2021). Evaluation of Racial/Ethnic Differences in Treatment and Mortality Among Women With Triple-Negative Breast Cancer. *JAMA oncology*, 7(7), 1016–1023. <https://doi.org/10.1001/jamaoncol.2021.1254>.

153 Foy, K.C., Fisher, J.L., Lustberg, M.B. et al. (2018) Disparities in breast cancer tumor characteristics, treatment, time to treatment, and survival probability among African American and white women. *npj Breast Cancer* 4,7. <https://doi.org/10.1038/s41523-018-0059-5>.

Evidence also suggests that Black women are more at risk of delays to treatment initiation after diagnosis than white women.^{154,155,156} Studies have tried to unpick the factors driving delays post diagnosis. More advanced cancer diagnosis in Black patient populations and the clinical complexity in characterizing later stages of disease has been attributed to issues related to socioeconomic status, delays to treatment initiation and discontinuation of care.^{157,158}

- Low socioeconomic status - low income, being uninsured or having public insurance, and having a low education level may act as barriers to optimal cancer care as patients are less able to effectively advocate for themselves and may not be able to afford the cost of treatment for optimal care.¹⁵⁹
- Specifically, Black women with breast cancer and those with lower socioeconomic status are more likely to experience treatment initiation delays and prolonged treatment duration compared with white women (30% vs 21%). Longer delays to accessing adjuvant chemotherapy were associated with worse survival in TNBC patients.¹⁶⁰
- Treatment cost is higher when diagnosis is delayed. Financial cost is associated with the complexity of care and multiple regimens required, which is compounded by later stage diagnosis of breast cancer and delays to care. The burden of receiving treatment on transportation, childcare, and loss of income from work, especially for hourly wage earners, is compounded by the side effects of treatment from both chemotherapy, which is immediate, and radiation, which gets worse overtime.¹⁶¹
- Type of treatment has been associated with experience of care delays and level of treatment continuity.¹⁶² Specifically, radiation therapy typically requires treatment for 5 days a week for several weeks, which may add complications such as travel distance and longer clinical visits add additional patient burdens.¹⁶³

154 Wheeler, S. B., Spencer, J. C., Pinheiro, L. C., Carey, L. A., Olshan, A. F., & Reeder-Hayes, K. E. (2018). Financial Impact of Breast Cancer in Black Versus White Women. *Journal of clinical oncology: official journal of the American Society of Clinical Oncology*, 36(17), 1695–1701. <https://doi.org/10.1200/JCO.2017.77.6310>.

155 Wheeler, S. B., Reeder-Hayes, K. E., & Carey, L. A. (2013). Disparities in breast cancer treatment and outcomes: biological, social, and health system determinants and opportunities for research. *The oncologist*, 18(9), 986–993. <https://doi.org/10.1634/theoncologist.2013-0243>.

156 Emerson, MA, Golightly, YM, Aiello, AE, Reeder-Hayes, KE, Tan, X, Maduekwe, U, ... & Troester, MA. (2020). Breast cancer treatment delays by socioeconomic and health care access latent classes in Black and White women. *Cancer*. <https://doi.org/10.1002/cncr.33121>.

157 Mougalian, S.S., Soulos, P.R., Killelea, B.K., Lannin, D.R., Abu-Khalaf, M.M., DiGiovanna, M.P., & Chagpar, A.B. (2015). Use of neoadjuvant chemotherapy for patients with stage I to III breast cancer in the United States. *Cancer*, 121, 2544–2552. <https://doi.org/10.1002/cncr.29348>.

158 Lipscomb, J., Gillespie, T.W., Goodman, M., Richardson, L.C., Pollack, L.A., Ryerson, A.B., Ward, K.C. (2012). Black–white differences in receipt and completion of adjuvant chemotherapy among breast cancer patients in a rural region of the US. *Breast Cancer Res Treat* 133, 285–296. <https://doi.org/10.1007/s10549-011-1916-1>.

159 Boyce-Fappiano, D., Bedrosian, I., Shen, Y. et al. (2021). Evaluation of overall survival and barriers to surgery for patients with breast cancer treated without surgery: a National Cancer Database analysis. *npj Breast Cancer* 7, 87. <https://doi.org/10.1038/s41523-021-00294-w>.

160 Li S, Ma D, Shi HH, Yu KD, Zhang Q. (2018) The effect of delayed adjuvant chemotherapy on relapse of triple-negative breast cancer. *J Thorac Dis* 10(5), 2837-2841. doi: 10.21037/jtd.2018.04.94.

161 Interview with Susan G. Komen (2022, February 4).

162 Emerson, MA, Golightly, YM, Aiello, AE, Reeder-Hayes, KE, Tan, X, Maduekwe, U, Johnson-Thompson, M, Olshan, AF, Troester, MA. (2020). Breast cancer treatment delays by socioeconomic and health care access latent classes in Black and White women. *Cancer*. <https://doi.org/10.1002/cncr.33121>.

163 American Cancer Society. (2021, October 27). Radiation for Breast Cancer. Retrieved from <https://www.cancer.org/cancer/breast-cancer/treatment/radiation-for-breast-cancer.html>. Accessed 28 February 2022.

Our assessment suggests the need for policy to incentivize adherence to evidence-based clinical guidelines and to reduce the chance of implicit bias to affect surgery and treatment provision.¹⁶⁴ State use of Section 1115 waivers and incentive payment programs through the CMS Innovation Center are currently being used to incentivize guideline adherence for cancer care provision.¹⁶⁵

3.2. Barriers to clinical trial participation

Regardless of the stage of cancer, the American Cancer Society (ACS) references participation in TNBC clinical trials as an option for patient care.¹⁶⁶ A small percentage (5%) of adult cancer patients participate in clinical trials; however, the majority of participants are white, and only 5% of all participants are Black or African American and 6% Hispanic (despite representing 13% and 18%, respectively, of the U.S. population).¹⁶⁷ Looking at breast cancer clinical trials specifically, only 2.1% of trial participants were Black for all breast cancer treatments that subsequently received FDA market authorizations from 2006 to 2021 and 5.6% of participants were Black for TNBC trials within the same time frame.¹⁶⁸ This lack of racial diversity and representation from Black women is especially problematic in the context of TNBC.

The lack of diversity in clinical trials has been linked to barriers to trial participation. Studies have identified barriers relating to structural (e.g. availability and accessibility of trials), clinical (e.g. eligibility) and attitudinal issues (on the physician and patient side), as well as socioeconomic and demographic hurdles.^{169,170,171} Specifically for Black breast cancer patients, there are several barriers that have been reported as barriers to treatment access through clinical trials. These barriers include lack of physician encouragement, inconvenience of trial participation (travel, cost, missing work and/or time with family), misinformation about placebos, misconceptions that trials are “last-ditch” efforts, and difficulty with meeting eligibility criteria for trial participation.¹⁷² Historical mistrust is also a key barrier to clinical trial participation and diversity and is discussed further in section 4.1.

There is some policy support intended to address the barriers to clinical trial participation. Since 2014, the Affordable Care Act (ACA) has required that Medicare and employer insurance plans cover some routine costs of cancer clinical trials (office visits, supportive care treatments, procedures, and

164 Tomblinson, R. (2021). Impact of Emerging Clinical Trends on Overall Cost of Care and the Role of the Managed Care Pharmacist. *Am J Manag Care*. 27(suppl 5): S97-S103. <https://doi.org/10.37765/ajmc.2021.88627>.

165 CMS. (2022). Oncology Care Model. Retrieved from <https://innovation.cms.gov/innovation-models/oncology-care>. Accessed 28 February, 2022.

166 American Cancer Society. (2021, October 27). Treatment of Triple-negative Breast Cancer. Retrieved from <https://www.cancer.org/cancer/breast-cancer/treatment/treatment-of-triple-negative.html>. Accessed 28 February, 2022.

167 US Census Bureau. (2021). Quick Facts – population. Retrieved from <https://www.census.gov/quickfacts/fact/table/US/PST045221>. Accessed 28 February, 2022.

168 Lythgoe, M.P., Krell, J., Khaki, A.R. (2021). 157P Racial diversity and reporting in FDA registration trials for breast cancer from 2006 to 2021. *Annals of Oncology, Volume 32, Supplement 2*, S88. <https://doi.org/10.1016/j.annonc.2021.03.171>.

169 Unger, J. M., Cook, E., Tai, E., & Bleyer, A. (2016). The Role of Clinical Trial Participation in Cancer Research: Barriers, Evidence, and Strategies. *American Society of Clinical Oncology educational book. American Society of Clinical Oncology. Annual Meeting*, 35, 185–198. https://doi.org/10.1200/EDBK_156686.

170 Awidi, M. & Al Hadidi, S. (2021). Participation of Black Americans in Cancer Clinical Trials: Current Challenges and Proposed Solutions. *JCO Oncology Practice*. 17(5) 265-271. DOI: 10.1200/OP.21.00001.

171 Stringer, E.M., Elkhany, A. Khoury, K., Simon, M.A., & Newman, L.A. (2021). Disparities in Breast Cancer Associated With African American Identity. *American Society of Clinical Oncology Educational Book*. 41. e29-e46.

172 Institute of Medicine (US) Forum on Drug Discovery, Development, and Translation. Transforming Clinical Research in the United States: Challenges and Opportunities: Workshop Summary. Washington (DC): National Academies Press (US); 2010. 6, Clinical Trials in Cancer. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK50895/>.

services).¹⁷³ However, the ACA law does not require states to cover such costs through their Medicaid plans. To improve the implementation and effectiveness of the ACA law, the Clinical Treatment Act was passed in 2020 requiring that all state Medicaid programs cover routine costs for cancer clinical trial participants from January 2022.¹⁷⁴ The Act could address the implications of disparities in Medicaid coverage varies across states: Prior to the Clinical Treatment Act, evidence suggested that coverage of clinical trials was excluded from the scope of services of Medicaid in 39 states.¹⁷⁵ This led to evidence of continued insurance barriers to clinical trials faced by patients. A survey of 252 members of cancer research centers and community-based institutions found that almost two-thirds of respondents had experienced at least one denial of coverage or delays when seeking coverage of routine clinical trial costs.¹⁷⁶ This can place a particular burden on under-resourced populations. Notably, coverage of costs of participating in the trial such as for transport, overnight stay accommodation, missed time at work or childcare are not required by legislation and thus typically not provided by insurers.

Further, several recent policies have been implemented or are being considered with the aim to address the barriers to trial enrollment among under-resourced populations. For example:

- The FDA issued formal guidance to support diverse participation and trial enrollment.¹⁷⁷ In addition to the FDA's guidance, the American Society of Clinical Oncology, the National Cancer Institute, and Friends of Cancer Research published guidelines encouraging researchers to expand eligibility criteria.^{178,179}
- Starting in January 2022, the New England Journal of Medicine will require that the research studies it publishes include information describing the diversity of the people enrolled in the study compared to the broader patient population in terms of race, ethnicity, age, and gender.¹⁸⁰

At the provider level, a study of eight leading cancer centers across states including California, Georgia, Michigan, Pennsylvania (and states not prioritized in this review, South Carolina, South Dakota, Texas) have been found to implement innovative strategies to increase diverse communities' participation in cancer trials, including:¹⁸¹

- Strategic engagement with providers (quality and diversity hiring practices of investigators, training, and mentoring).

173 National Cancer Institute. (2020, February 6). *Insurance Coverage and Clinical Trials*. Retrieved from <https://www.cancer.gov/about-cancer/treatment/clinical-trials/paying/insurance>. Accessed 28 February, 2022.

174 American Society of Clinical Oncology (ASCO). *Insurance Coverage of Clinical Trials*. Retrieved from: <https://www.asco.org/research-data/clinical-trials/insurance-coverage-clinical-trials>. Accessed 28 February 2022.

175 Obeng-Gyasi, S., Kircher, S. M., Lipking, K. P., Keele, B. J., Benson, A. B., Wagner, L. I., & Carlos, R. C. (2019). Oncology clinical trials and insurance coverage: An update in a tenuous insurance landscape. *Cancer*, 125(20), 3488–3493. <https://doi.org/10.1002/cncr.32360>.

176 Mackay C.B, et al. (2017). Insurance denials for cancer clinical trial participation after the Affordable Care Act mandate. *Cancer*. 1;123(15):2893-2900. doi: 10.1002/cncr.30689.

177 FDA. (2020, November). *Enhancing the Diversity of Clinical Trial Populations — Eligibility Criteria, Enrollment Practices, and Trial Designs Guidance for Industry*. Retrieved from <https://www.fda.gov/media/127712/download>. Accessed 28 February 2022.

178 Ivy, P., Denicoff, A., Mishkin, G., Arnaldez, F. (2019, March 7). *Making Cancer Clinical Trials Available to More Patients*. Retrieved from the National Cancer Institute website: <https://www.cancer.gov/news-events/cancer-currents-blog/2019/expanding-clinical-trial-eligibility-criteria>. Accessed 28 February 2022.

179 Kim, E. S., et al. (2017). Broadening Eligibility Criteria to Make Clinical Trials More Representative: American Society of Clinical Oncology and Friends of Cancer Research Joint Research Statement. *Journal of clinical oncology: official journal of the American Society of Clinical Oncology*, 35(33), 3737–3744. <https://doi.org/10.1200/JCO.2017.73.7916>.

180 Sacks, C.A., Hardin, C.C., Sharon-Lise, N., Kadire, S., Takvorian, K., Galloway, N., Linga, R., Hannon, P., Drazen, J., Rubin, E. (2022). *N Engl J Med*; 386:182-183. DOI: 10.1056/NEJMe2118588.

181 Regnante, J.M. et al. (2019). US Cancer Centers of Excellence Strategies for Increased Inclusion of Racial and Ethnic Minorities in Clinical Trials. *Journal of Oncology Practice*. 15:4, e289-e299.

- Community engagement (cultural humility training, community advisory boards, and representatives).
- Patient engagement (seeking dedicated input into cancer clinical research programs, such as feasibility of implementation, patients, and caregivers from racial and ethnic communities).
- Leadership, commitment, and an allocation of resources to improving health disparities and increased dedication of research staff to racial and ethnic community engagement, linked to a corresponding development and education culture.

Despite the growing number of initiatives to support trial diversity, efforts are piecemeal across providers and attempts to scale are non-binding (e.g. guidelines). Information and patient navigation services to support clinical trial awareness, integration of trial participation into patient care, community programs and use of telehealth to overcome distance and cost barriers remain unmet needs among under-resourced populations.^{182, 183, 184} In addition, several studies have demonstrated that Black patients are no more likely than white patients to refuse participation in trials if eligible, suggesting the importance for policy to address physician implicit bias.¹⁸⁵ Furthermore, for oncology drugs approved in 2019 and 2020, Blacks were 4% and 5% respectively and Hispanics were 4% and 6% respectively of the pivotal trial enrollees, significantly short of their proportion of the population in the U.S. which is 13% Black and 19% Hispanic.^{186, 187, 188}

Ultimately, to address structural biases that affect access to new treatment through trial participation, a more inclusive research and treatment environment is needed. Lack of diversity and cultural competency among trial investigators has been identified as a barrier to clinical trial participation.¹⁸⁹ This has been recognized and in late 2021 four HBCU (Charles Drew Medical School, Howard University, Meharry Medical College, and Morehouse School of Medicine) along with the ACS launched the “Diversity in Cancer Research Program”, to improve diversity, equity, and inclusion in cancer research.¹⁹⁰

3.3. Barriers to emerging personalized treatment

Genomic analyses have revealed that TNBC comprises a heterogeneous group of cancers, with numerous diverse molecular idiosyncrasies, which researchers have identified and classified into several

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- 182 Breastcancer.org. (2021, November 17). *Special Report: Increasing Racial Diversity in Breast Cancer Clinical Trials*. Retrieved from https://www.breastcancer.org/treatment/clinical_trials/increasing-racial-diversity. Accessed 8 March 2022.
- 183 Ahluwalia, M. (2021, July 20). *Diversity In Clinical Trials: 10 Strategies To Increase Minority Enrollment In Oncology Trials*. Retrieved from the Clinical Leader website: <https://www.clinicalleader.com/doc/diversity-in-clinical-trials-strategies-to-increase-minority-enrollment-in-oncology-trials-0001>. Accessed 8 March, 2022.
- 184 Interview with Susan G. Komen (2022, February 4).
- 185 Unger JM, Hershman DL, Albain KS, et al. (2013). Patient income level and cancer clinical trial participation. *J Clin Oncol*. 31:536-542.
- 186 FDA. (2020, January). *2019 Drug Trials Snapshots Summary Report*. Retrieved from <https://www.fda.gov/media/135337/download>. Accessed 28 February 2022.
- 187 FDA. (2021, February). *2020 Drug Trials Snapshots Summary Report*. Retrieved from <https://www.fda.gov/media/145718/download>. Accessed 28 February 2022.
- 188 U.S. Census Bureau. (2020). *Race and Ethnicity*. [Data set] Retrieved from <https://data.census.gov/cedsci/profile?q=United%20States&g=0100000US>. Accessed 28 February 2022.
- 189 Clark LT, et al. (2019) Increasing Diversity in Clinical Trials: Overcoming Critical Barriers. *Curr Probl Cardiol*;44(5):148-172. doi: 10.1016/j.cpcardiol.2018.11.002.
- 190 The Journal of Blacks in Higher Education (JBHE). (2021, September 24). *The Four HBCU Medical Schools Look to Increase Diversity in Cancer Research*. Retrieved from <https://www.jbhe.com/2021/09/the-four-hbcu-medical-schools-look-to-increase-diversity-in-cancer-research/>. Accessed 28 February, 2022.

subtypes.¹⁹¹ Tumor profiling can offer insights into the risk-level, progression, and likelihood of recurrence and can inform optimal treatment regimens for TNBC patients.¹⁹² However, there are disparities in rates of genomic testing and limited samples of tumors from populations facing barriers. For example, expression profiling of TNBC tumor samples led to the classification of six different subtypes that are each more susceptible to different forms of treatments and also vary in both disease-free survival and disease-specific survival rates.¹⁹³ Evidence of genomic differences in TNBC are increasing in clarity: even when Black patients do receive chemotherapy, evidence suggests that its effectiveness is lower compared to white patients, suggesting that there may be biological or environmental differences between tumors in these patients, an area in which further research is still needed.¹⁹⁴

Looking ahead, TNBC care will be increasingly personalized to patient needs, highlighting the importance of developing biology-oriented comprehensive approaches to care.^{195,196} Racial representation of studies defining TNBC subtypes and assessing differences in clinical outcomes is needed to support the development of future treatment plans.¹⁹⁷ In addition, broad access to genomic testing is needed to inform access to personalized treatment. Patient cost-share for multi-gene testing is an additional burden and, as people of color continue to face barriers, multi-gene testing is likely to exacerbate disparities in treatment understanding and outcomes due to genetic differences by race.¹⁹⁸ This is a result of restrictions on Medicare coverage and limited state Medicaid providers covering genetic testing services.¹⁹⁹

Next-generation sequencing (NGS) enables biomarker testing and tumor profiling to understand specific gene mutations in a tumor cell. NCCN recommends biomarker testing for breast cancer.²⁰⁰ In 2018, the CMS issued a national coverage determination (NCD) for coverage of NGS testing for all solid tumors with a companion diagnostic claim.²⁰¹ However, despite the NCD, coverage of NGS has not increased equitably: a recent study found that after the implementation of the NCD, African

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- 191 Lehmann, B. D., Jovanović, B., Chen, X., Estrada, M. V., Johnson, K. N., Shyr, Y., ... & Pietenpol, J. A. (2016). Refinement of Triple-Negative Breast Cancer Molecular Subtypes: Implications for Neoadjuvant Chemotherapy Selection. *PLoS one*, *11*(6), e0157368. <https://doi.org/10.1371/journal.pone.0157368>.
- 192 Axelsen, K., Jayasuriya, R., Zacharko, C., & Karmo, M. (2021, October). Disparities in screening and diagnosis for triple negative breast cancer. *Charles River Associates*. Retrieved from <https://media.crai.com/wp-content/uploads/2021/10/04132314/CRA-Gilead-Disparities-in-Screening-and-Diagnosis-TNBC.pdf>. Accessed 28 February 2022.
- 193 Yin, L., Duan, JJ., Bian, XW. et al. (2020). Triple-negative breast cancer molecular subtyping and treatment progress. *Breast Cancer Res* *22*, 61. <https://doi.org/10.1186/s13058-020-01296-5>.
- 194 Strait, J.E. (2021, May 13). *Triple-negative breast cancer more deadly for African American women*. Retrieved from <https://medicine.wustl.edu/news/triple-negative-breast-cancer-more-deadly-for-african-american-women/>. Accessed 28 February, 2022.
- 195 Le Du, F., Eckhardt, B. L., Lim, B., Litton, J. K., Moulder, S., Meric-Bernstam, F., Gonzalez-Angulo, A. M., & Ueno, N. T. (2015). Is the future of personalized therapy in triple-negative breast cancer based on molecular subtype?. *Oncotarget*, *6*(15), 12890–12908. <https://doi.org/10.18632/oncotarget.3849>.
- 196 Azim, H.A., Ghosn, M., Oualla, K., Kassem, L. (2019). Personalized treatment in metastatic triple-negative breast cancer: The outlook in 2020. *Breast J.* *26*: 69– 80. <https://onlinelibrary.wiley.com/doi/abs/10.1111/tbj.13713>.
- 197 Yin, L., Duan, JJ., Bian, XW. et al. (2020). Triple-negative breast cancer molecular subtyping and treatment progress. *Breast Cancer Res.* *22* (61). <https://doi.org/10.1186/s13058-020-01296-5>.
- 198 Interview with Susan G. Komen (2022, February 4).
- 199 Centers for Medicare & Medicaid Services. *Next Generation Sequencing (NGS)*. Retrieved from: <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCDId=372&ncdver=1&bc=AAAAQAAAAAA&>. Accessed February 28, 2022.
- 200 National Comprehensive Cancer Network. *Breast cancer guidelines. NCCN guidelines, version 8.2021*. Retrieved from: <https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1419>. Accessed February 28, 2022.
- 201 Centers for Medicare & Medicaid Services. National coverage determination (NCD). *Next generation sequencing (NGS): 2020*. Retrieved from <https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=372>. Accessed February 28, 2022.

American and Hispanic/Latino patients who received NGS testing was lower than the percentage of White patients.²⁰² In addition, the share of NGS-tested patients in West and Southern states was lower than that of the Midwest states, and the percentage of NGS-tested Medicaid beneficiaries was lower compared to Medicare and commercially insured populations, indicating potential gaps in state Medicaid coverage policies.

3.4. Summary

Our literature review identifies a disconnect between evidence-based clinical guideline practice and patient access to treatment. Table 1 summarizes our findings.

Table 2: Summary of key takeaway for TNBC treatment inequities

Key takeaways
<p>1. There is evidence that non-Hispanic Black patients, Hispanic patients, and patients of lowest and lower-middle socioeconomic status are less likely to receive guideline-adherent care. There is evidence that Black women are also less likely to receive chemotherapy, surgery, and radiotherapy, in part due to physician implicit bias.</p>
<p>2. Black women often face treatment initiation delays after diagnosis and prolonged treatment duration which leads to worse survival outcomes.</p>
<p>3. Black and Hispanic patients face both cost and awareness barriers to trial participation which indicates inequitable access to new treatment.</p>
<p>4. There is heterogeneity within the TNBC subtype and limited understanding of tumor genetic profiles. Black women are less likely to effectively respond to chemotherapy (<i>although further research is needed</i>) and broad access to genomic testing is needed to inform future access to personalized treatment.</p>

Source: CRA analysis of multiple sources

202 Sheinson, D. M., Wong, W. B., Meyer, C. S., Stergiopoulos, S., Lofgren, K. T., Flores, C., Adams, D. V., & Fleury, M. E. (2021). Trends in Use of Next-Generation Sequencing in Patients With Solid Tumors by Race and Ethnicity After Implementation of the Medicare National Coverage Determination. *JAMA network open*, 4(12), e2138219. <https://doi.org/10.1001/jamanetworkopen.2021.38219>.

4. Coverage and affordability of TNBC treatments

Health outcomes for breast cancer patients have significantly improved, in part, due to the development of innovative medicines. However, breast cancer has been found to have the highest cost of cancer care in the U.S. and there remain significant differences in the degree to which patients have access to innovative medicines.²⁰³ In this section, we consider the extent to which inequitable health insurance coverage policies are a determinant of TNBC patient outcomes.

4.1. Barriers to coverage and patient access

Evidence suggests that TNBC patients from under-resourced communities are at disproportionately high risk of “financial toxicity”.²⁰⁴ “Financial toxicity” describes the negative impacts of the cost of care faced by cancer patients.²⁰⁵ Specifically, the term refers to the burden and source of distress caused by the financial costs related to cancer treatment and care (e.g. transport, accommodation near hospitals, medical and drug bills). It can lead to patients forgoing care and, in the case of cancer, this can contribute to the increased risk of cancer recurrence and worse health outcomes.

Although economic hardship is prevalent among many cancer survivors, the burden associated with high out-of-pocket costs and medical debt has been found to be greater among patients with limited access to support and resources.^{206, 207, 208} Further, patients from communities of color have been found to be the most vulnerable to encountering financial decline following breast cancer diagnosis and treatment, even after other factors such as income, education, and employment are accounted for.²⁰⁹

Our literature review points to evidence that insurance design can affect patients’ timely access to treatment. For example, one study found that low-income women with breast cancer enrolled on employer-provided high-deductible health plans (HDHP) can experience a delay of 8.7 months to chemotherapy initiation, compared to 5.7 months of delay for high-income women.²¹⁰ In addition, the same study found delayed breast cancer care among HDHP enrollees living in non-metropolitan areas (1.6 to 10.0 months) compared to metropolitan countries (0.7 to 8.1 months)). One reason for this could be that patients avoid high OOP costs by delaying care until they are above their annual deductible level. The results of this study imply that socioeconomic factors in part might explain

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- 203 Mariotto, A. B., Yabroff, K. R., Shao, Y., Feuer, E. J., & Brown, M. L. (2011). Projections of the cost of cancer care in the United States: 2010-2020. *Journal of the National Cancer Institute*, *103*(2), 117–128. <https://doi.org/10.1093/jnci/djq495>.
- 204 Jagsi, R., Pottow, J. A., Griffith, K. A., Bradley, C., Hamilton, A. S., Graff, J., Katz, S. J., & Hawley, S. T. (2014). Long-term financial burden of breast cancer: experiences of a diverse cohort of survivors identified through population-based registries. *J. Clin. Oncol.* *32*(12), 1269–1276. <https://doi.org/10.1200/JCO.2013.53.0956>.
- 205 National Cancer Institute. (2022, March 4). Financial Toxicity and Cancer Treatment (PDQ)—Health Professional Version. Retrieved from <https://www.cancer.gov/about-cancer/managing-care/track-care-costs/financial-toxicity-hp-pdq>. Accessed March 8, 2022.
- 206 Skinner, K. E., Haiderali, A., Huang, M., & Schwartzberg, L. S. (2021). Assessing direct costs of treating metastatic triple-negative breast cancer in the USA. *Journal of comparative effectiveness research*, *10*(2), 109–118. <https://doi.org/10.2217/cer-2020-0213>.
- 207 Jagsi, R., Pottow, J. A., Griffith, K. A., Bradley, C., Hamilton, A. S., Graff, J., Katz, S. J., & Hawley, S. T. (2014). Long-term financial burden of breast cancer: experiences of a diverse cohort of survivors identified through population-based registries. *J. Clin. Oncol.* *32*(12), 1269–1276. <https://doi.org/10.1200/JCO.2013.53.0956>.
- 208 Pisu, M., Azuero, A., Meneses, K., Burkhardt, J., & McNeese, P. (2011). Out of pocket cost comparison between Caucasian and minority breast cancer survivors in the Breast Cancer Education Intervention (BCEI). *Breast cancer Research and Treatment*, *127*(2), 521–529. <https://doi.org/10.1007/s10549-010-1225-0>.
- 209 Jagsi, R., Pottow, J.A.E., Griffith, K.A., Bradley, C., Hamilton, A.S., Graff, J., Katz, S.J., Hawley, S.T. (2014). DOI: 10.1200/JCO.2013.53.0956 *Journal of Clinical Oncology* *32*, no. 12. 1269-1276. <https://ascopubs.org/doi/full/10.1200/JCO.2013.53.0956>.
- 210 Wharam, J. F., Zhang, F., Wallace, J., Lu, C., Earle, C., Soumerai, S. B., Nekhlyudov, L., & Ross-Degnan, D. (2019). Vulnerable And Less Vulnerable Women In High-Deductible Health Plans Experienced Delayed Breast Cancer Care. *Health affairs (Project Hope)*, *38*(3), 408–415. <https://doi.org/10.1377/hlthaff.2018.05026>.

differences in treatment access and cancer outcomes and highlight the importance of policy initiatives to support the financial burden of care. Restrictions to insurance coverage also contribute to financial toxicity during cancer care since the true cost of care will differ by type of health insurance and the extent of any coverage restrictions. For example, approximately 80% of Medicare Advantage enrollees are in plans which require prior authorization for some treatment or services.²¹¹ In contrast, Fee-for-Service (FFS) Medicare requires minimal prior authorization for physician administered drugs.²¹²

Box 1: Common definitions of coverage requirements or limits

Utilization management (UM): A cost-containment strategy used by private and public health insurance plans that employs methods to evaluate the medical necessity, appropriateness, and efficiency of the use of health care services.

Prior authorizations (PA): A form of UM applied to treatments or care services which require approval from the patient's health plan to cover the drug before a prescription is filled. PAs require varying degrees of documentation submitted from the patient's health care provider ranging from physician attestation to demonstration of lab results.

Quantity limits (QL): A form of UM that places a limit on the quantity of a treatment that can be dispensed and reimbursed within a given time frame.

Step therapy (ST): A form of UM that requires a specific sequence of treatment such that a patient must try and fail a first-line treatment before they receive coverage for a high cost, specialty, second-line treatment.

Limited distribution (LD): The treatment is only available through a small number of specialty pharmacies or wholesalers within a centralized distribution system preferred by the patient's health plan.

Furthermore, almost 9% of the U.S. population remains uninsured.²¹³ Figure 3 demonstrates the racial discrepancies in health insurance coverage among adults between the ages of 19-62. Specifically, Black, Hispanic, American Indian Alaska Native (AIAN), and Native Hawaiian Other Pacific Islander (NHOPI), are more likely to be publicly insured or uninsured compared to white

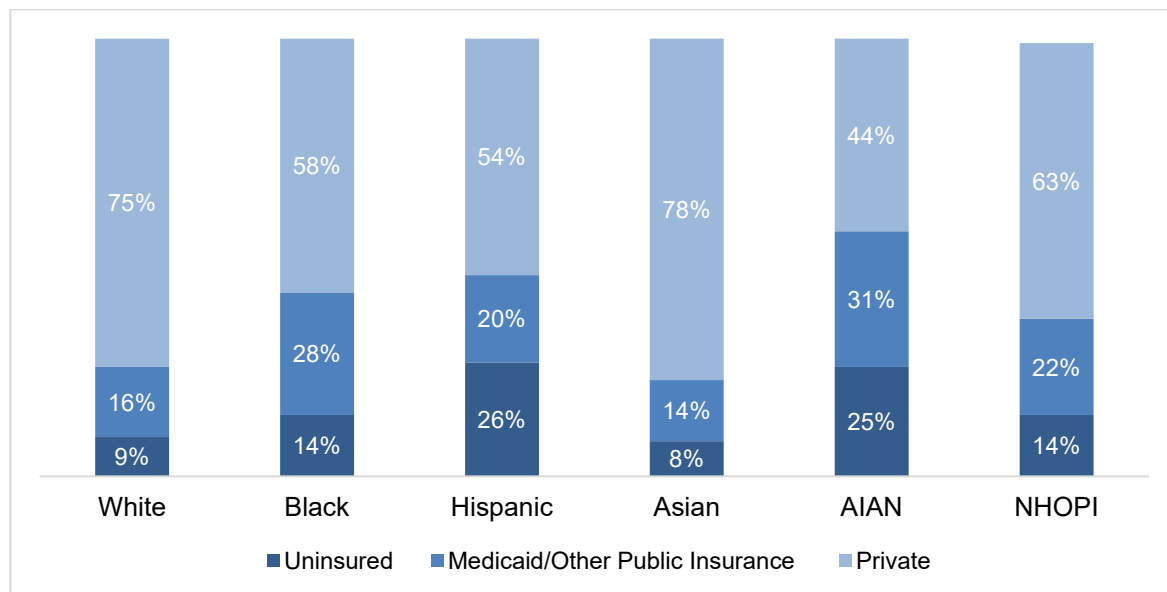
211 Jacobson, G., Neuman, T. (2018, October 24). *Prior Authorization in Medicare Advantage Plans: How Often Is It Used?* Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/medicare/issue-brief/prior-authorization-in-medicare-advantage-plans-how-often-is-it-used/>. Accessed 8 March 2022.

212 Schwartz A.L., Brennan T.A., Verbrugge D.J., Newhouse J.P. (2021). Measuring the Scope of Prior Authorization Policies: Applying Private Insurer Rules to Medicare Part B. *JAMA Health Forum*. 2(5):e210859. doi:10.1001/jamahealthforum.2021.0859.

213 Keisler-Starkey, K., & Bunch, L.N. (2021, September 14). *Health Insurance Coverage in the United States: 2020*. Retrieved from the U.S. Census Bureau website: <https://www.census.gov/library/publications/2021/demo/p60-274.html#:~:text=In%202020%2C%208.6%20percent%20of,part%20of%202020%20was%2091.4>. Accessed 8 March, 2022.

Americans.²¹⁴ In addition, as of 2022, there are 12 states that have not adopted the Medicaid expansion (Alabama, Florida, Georgia, Kansas, Mississippi, North Carolina, South Carolina, South Dakota, Tennessee, Texas, Wisconsin, Wyoming). Many uninsured residents live in states that did not expand Medicaid, which creates a coverage gap and barrier to access for patients whose income is too high to qualify for Medicaid but too low to make insurance from the marketplaces affordable.^{215, 216, 217} The importance of coverage to cancer outcomes is evidenced by research showing that the Affordable Care Act and Medicaid expansion are associated with increased rates of cancer diagnosis, enhanced access to cancer treatment, and decreased risk of mortality.^{218, 219}

Figure 3: Health coverage of non-elderly adults (19-64 years) by race and ethnicity



Source: KFF (2021), 2019 American Community Survey.

Note: American Indian Alaska Native (AIAN); Native Hawaiian Other Pacific Islander (NHOPI)

To better understand the variations in insurance type on access to treatment, an analysis of coverage of five different treatments indicated for TNBC was performed. These treatments consisted of a

214 Artiga, S., Hill, L., Orgera, K., Damico, A. (2021). *Health Coverage by Race and Ethnicity, 2010-2019*. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/>. Accessed 8 March, 2022.

215 Levit, L.A., Byatt, L., Lyss, A.P., et al. (2020). Closing the Rural Cancer Care Gap: Three Institutional Approaches. DOI: 10.1200/OP.20.00174 *JCO Oncology Practice*, 16(7), 422-430. Retrieved from <https://ascopubs.org/doi/10.1200/OP.20.00174>. Accessed 8 March, 2022.

216 Kaiser Family Foundation. (2022) Status of State Medicaid Expansion Decisions: Interactive Map. [Data set]. Retrieved from: <https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/>. Accessed 8 March 2022.

217 Artiga, S., Hill, L., Orgera, K., Damico, A. (2021). *Health Coverage by Race and Ethnicity, 2010-2019*. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/>. Accessed 8 March, 2022.

218 Eguia, E., Cobb, A. N., Kothari, A. N., Molefe, A., Afshar, M., Aranha, G. V., & Kuo, P. C. (2018). Impact of the Affordable Care Act (ACA) Medicaid Expansion on Cancer Admissions and Surgeries. *Annals of surgery*, 268(4), 584–590. <https://doi.org/10.1097/SLA.0000000000002952>.

219 Lam M.B., Phelan J., Orav E.J., Jha A.K., Keating N.L. (2020) Medicaid Expansion and Mortality Among Patients With Breast, Lung, and Colorectal Cancer. *JAMA Netw Open*, 3(11) doi:10.1001/jamanetworkopen.2020.24366.

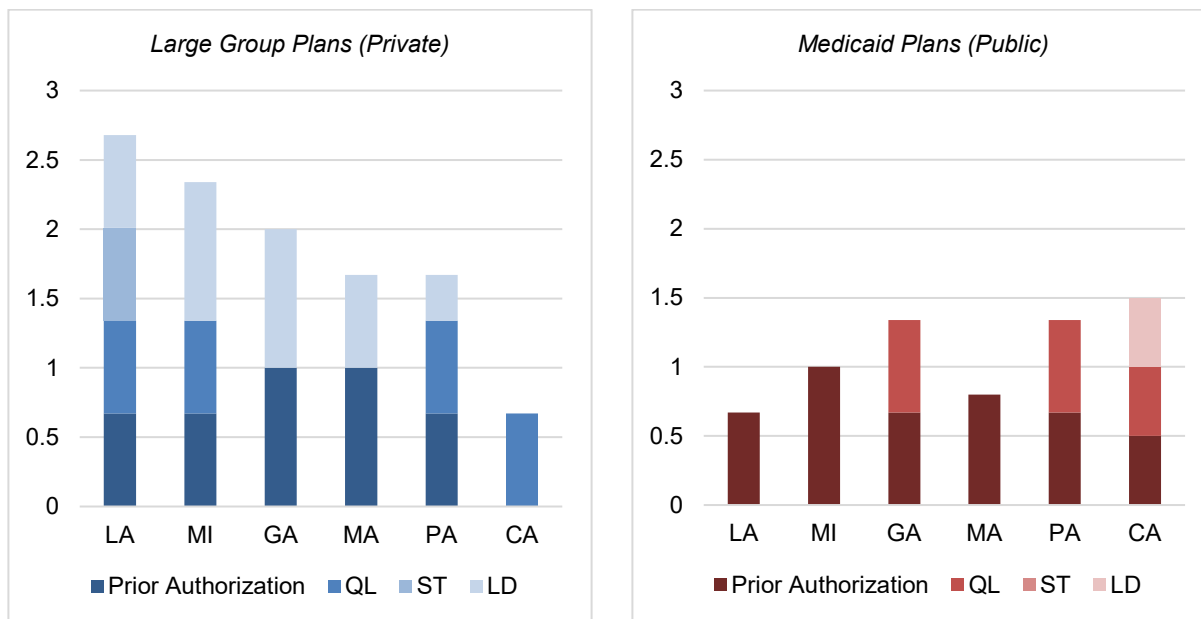
general metastatic breast cancer therapy (n=1), HER-2 negative, deleterious gBRCAm breast cancer therapies (n=2), and TNBC-specific therapies (n=2).²²⁰ We assessed the coverage of these treatments on the formularies of the largest group private health plans, Medicare Advantage and Medicaid health plans in each of the six states of focus: California (CA), Georgia (GA), Louisiana (LA), Massachusetts (MA), Pennsylvania (PA), and Michigan (MI).^{221,222,223,224}

Looking at Medicare, we find that two out of the five assessed treatments indicated for TNBC are covered under Medicare Advantage pharmacy benefit and are on the specialty tier, with restrictions such as prior authorizations, quantity limits and dispensing limits.²²⁵

Our assessment of Medicaid coverage is summarized in Figure 4, and demonstrates the likely differences in access to TNBC treatment across the U.S. The analysis demonstrates Medicaid plans have fewer restrictions per drug covered than large group plans, except for California. However, the type of restrictions varies between public Medicaid and private large group plans, with Medicaid plans being more likely to implement prior authorization criteria, which is seen as more restrictive than a quantity limit.

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- 220 Products assessed: Xeloda® (capecitabine) [package insert] Retrieved from the Food and Drug Administration website: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/020896s043lbl.pdf. Revised May 2021. Accessed January 10, 2022; Lynparza® (olaparib) [package insert]. Retrieved from the Food and Drug Administration website: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/208558s019s020lbl.pdf. Revised March 2021. Accessed January 10, 2022; Talzenna® (talazoparib) [package insert] Retrieved from the Food and Drug Administration website: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/211651s008lbl.pdf. Revised September 2021. Accessed January 10, 2022; Keytruda® (pembrolizumab) [package insert] Retrieved from the Food and Drug Administration website: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/125514s120lbl.pdf. Revised December 2021. Accessed January 10, 2022; Trodelvy® (sacituzumab govitecan-hziy) [package insert] Retrieved from the Food and Drug Administration website: https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/761115s009lbl.pdf. Revised April 2021. Accessed January 10, 2022.
- 221 Employer plans: Kaiser (CA) (2022); Anthem (GA) (2022); Blue Cross (MA) (2022); Blue Cross Blue Shield (BCBS) Michigan (MI) (2022); Highmark Group (PA); BCBS Louisiana (LA) (2022). Medicaid Plans: LA Care (CA) (2021); Preferred Drug List (PDL) (GA) (2022); PDL (MA) (2022); Meridian Health (MI) (2022); UPMC Health Plan (PA) (2022); PDL/Non-Preferred Drug List (LA) (2022).
- 222 Kaiser Family Foundation (2022). *Health Insurance & Managed Care Indicators: Insurance Market Competitiveness*. Retrieved from <https://www.kff.org/state-category/health-insurance-managed-care/insurance-market-competitiveness/>. Accessed 8 March, 2022.
- 223 Freed, M., Damico, A., & Neuman, T. (2021). *A Dozen Facts About Medicare Advantage in 2020*. Retrieved from the Kaiser Family Foundation: <https://www.kff.org/medicare/issue-brief/a-dozen-facts-about-medicare-advantage-in-2020/>. Accessed 8 March, 2022.
- 224 United Healthcare. (2022). *AARP Medicare Advantage Plan Formulary 2022*. Retrieved from: https://www.aarpmedicareplans.com/alphadog/AAEX22HM5014610_002. Accessed 8 March, 2022.
- 225 The remaining three products are covered under the Medicare medical benefit Part A.

Figure 4: Number of coverage restrictions per TNBC drug covered by restriction type²²⁶



Source: CRA Analysis

We also find that Louisiana, Michigan, Pennsylvania, and California Medicaid plans are all more or equally likely to implement prior authorization criteria per drug covered compared to private large group plans in the same state. Prior authorization criteria has been found to have negative implications on treatment access and adherence, and is particularly impactful at smaller, community-based health care organizations that may lack resources and staff to process, manage and execute Prior authorizations.²²⁷ Furthermore, studies have highlighted the time it takes to process and receive approval from a prior authorization often causes delays in care.²²⁸ Evidence suggests that most Prior authorizations are approved, which suggests that this restrictive process places an unnecessary burden on patients, delaying or preventing appropriate treatment access particularly for under-resourced populations who are more likely to visit community-based health centers.²²⁹

Figure 4 demonstrates that large group employer plans are more likely than Medicaid plans to implement restrictions beyond prior authorization, including QL, ST, and LD or specialty pharmacy requirements. Studies suggest that LD can be particularly burdensome if it requires patients to travel

²²⁶ Analysis only considers drugs covered on Plan Pharmacy Benefits and excludes Medical Benefit coverage. Two of the remaining drugs are physician administered and one is hospital administered and for some plans fall under coverage policies that are distinct from pharmacy drugs in Medicare.

²²⁷ Agarwal, A., Freedman, R. A., Goicuria, F., Rhinehart, C., Murphy, K., Kelly, E., Mullaney, E., St Amand, M., Nguyen, P., & Lin, N. U. (2017). Prior Authorization for Medications in a Breast Oncology Practice: Navigation of a Complex Process. *Journal of oncology practice*, 13(4), e273–e282. <https://doi.org/10.1200/JOP.2016.017756>.

²²⁸ Collins, B.G. (2021). *Improving Care for Underserved People With Cancer and Evaluating Delays in Receiving Cancer Medications: Research from the 2021 Quality Care Symposium*. Retrieved from Cancer.net: <https://www.cancer.net/blog/2021-09/improving-care-underserved-people-with-cancer-and-evaluating-delays-receiving-cancer-medications>. Accessed 8 March, 2022.

²²⁹ Agarwal, A., Freedman, R. A., Goicuria, F., Rhinehart, C., Murphy, K., Kelly, E., Mullaney, E., St Amand, M., Nguyen, P., & Lin, N. U. (2017). Prior Authorization for Medications in a Breast Oncology Practice: Navigation of a Complex Process. *Journal of oncology practice*, 13(4), e273–e282. <https://doi.org/10.1200/JOP.2016.017756>.

far to infusion centers for treatment, especially for those living in rural areas compared to urban centers.^{230,231} In addition, the cost burden of travel to treatment can be compounded by the growing practice of “white bagging” (insurer mandates that specialty pharmacies send a patient’s medication directly to the oncology practice instead of the patient; if the physician needs to adjust the dose, the drug must be shipped back to the pharmacy).²³² Evidence points to “white-bagging” and use of LD and dispensing limits potentially leading to delays in care or preventing patients from adhering to their medication, ultimately leading to treatment failure.^{233,234}

To limit coverage barriers, some states limit Medicaid Pharmacy utilization management, although few are specific to cancer medicines.²³⁵ At the federal level, some legislation has the potential to address financial toxicity associated with breast cancer diagnosis and treatment. For example:

- The Protecting Access to Lifesaving Screenings (PALS) Act ensures insurance coverage without cost-sharing fees for annual mammograms for women aged 40 years old and over.²³⁶
- The Metastatic Breast Cancer Access to Care Act eliminates the 24-month waiting period for Medicare and the 5-month waiting period for Social Security Disability Insurance benefits for eligible individuals with metastatic breast cancer.²³⁷
- The Access to Breast Cancer Diagnosis (ABCD) Act eliminates patient cost-sharing for medically necessary diagnostic imaging (diagnostic mammography, breast ultrasound and breast MRI) for necessary follow-up post screening mammography and for those high-risk individuals requiring diagnostic imaging.²³⁸
- The Lymphedema Treatment Act provides Medicare coverage for the medically necessary compression treatments which are often required by cancer patients.²³⁹

230 Zuckerman, A. D., Carver, A., Cooper, K., Markley, B., Mitchell, A., Reynolds, V. W., Sakhini, M., Wyatt, H., & Kelley, T. (2019). An Integrated Health-System Specialty Pharmacy Model for Coordinating Transitions of Care: Specialty Medication Challenges and Specialty Pharmacist Opportunities. *Pharmacy*, 7(4), 163. <https://doi.org/10.3390/pharmacy7040163>.

231 Ambroggi, M., Biasini, C., Del Giovane, C., Fornari, F., & Cavanna, L. (2015). Distance as a Barrier to Cancer Diagnosis and Treatment: Review of the Literature. *The Oncologist*, 20(12), 1378–1385. <https://doi.org/10.1634/theoncologist.2015-0110>.

232 American Hospital Association (AHA). (2021, March). *Health Insurer Specialty Pharmacy Policies Threaten Patient Quality of Care*. Retrieved from: <https://www.aha.org/system/files/media/file/2021/03/AOMarch8white-bagging-0221.pdf>. Accessed 2 March 2022.

233 American Hospital Association (AHA). (2021, March). *Health Insurer Specialty Pharmacy Policies Threaten Patient Quality of Care*. Retrieved from: <https://www.aha.org/system/files/media/file/2021/03/AOMarch8white-bagging-0221.pdf>. Accessed 2 March 2022.

234 Zuckerman, A. D., Carver, A., Cooper, K., Markley, B., Mitchell, A., Reynolds, V. W., Sakhini, M., Wyatt, H., & Kelley, T. (2019). An Integrated Health-System Specialty Pharmacy Model for Coordinating Transitions of Care: Specialty Medication Challenges and Specialty Pharmacist Opportunities. *Pharmacy*, 7(4), 163. <https://doi.org/10.3390/pharmacy7040163>.

235 Kaiser Family Foundation. State Statutory Limits on Medicaid Pharmacy Utilization Controls 2019. [Data set] Retrieved from <https://www.kff.org/other/state-indicator/state-statutory-limits-on-medicare-pharmacy-utilization-controls/?currentTimeframe=0&sortModel=%7B%22collid%22:%22Location%22,%22sort%22:%22asc%22%7D>. Accessed February 2, 2022.

236 S.1936 - 116th Congress (2019–2020): PALS Act. (2019, June 20). <https://www.congress.gov/bill/116th-congress/senate-bill/1936?s=1&r=2>.

237 S.1312 - 117th Congress (2021–2022): Metastatic Breast Cancer Access to Care Act. (2021, May 22). <https://www.congress.gov/bill/117th-congress/senate-bill/1312/text?r=57>.

238 H.R.2428 - 116th Congress (2019–2020): Access to Breast Cancer Diagnosis Act of 2019. (2019, January 5). <https://www.congress.gov/bill/116th-congress/house-bill/2428?q=%7B%22search%22%3A%5B%22S.+47%22%5D%7D&s=1&r=72>.

239 S.1315 - 117th Congress (2021–2022): All Information (Except Text) for Lymphedema Treatment Act. (2021, April 22). <https://www.congress.gov/bill/117th-congress/senate-bill/1315/all-info>.

- The Cancer Drug Parity Act creates cost-sharing requirements for oral anticancer drugs that are no less favorable than the cost-sharing for anticancer drugs administered intravenously.²⁴⁰
- The No Surprises Act (NSA) will take effect in 2022 and establishes new federal protections against surprise medical bills by requiring private health plans to cover out-of-network claims and apply in-network cost-sharing. The legislation covers non-emergency treatment, equipment and devices, telemedicine services, imaging and lab services, and preoperative and postoperative services.²⁴¹

4.2. Summary

Most insurance plans cover treatment for TNBC patients. However, there remain harmful coverage restrictions and treatment-associated costs that place a significant burden on patients, particularly those that are low-income, uninsured, or rely on public insurance. Table 3 provides a summary of the inequities patients face in coverage.

Table 3: Summary of inequities for coverage of TNBC treatments

Key takeaways
1. OOP costs leave patients with a significant financial burden and medical debt that is particularly onerous for low-income and non-white patients.
2. Insurance design, such as employer-provided high-deductible health plans (HDHP), can contribute to delays in care for low-income women who wait to access care until they are above their annual deductible level to avoid paying high OOP costs.
3. Non-white patients are more likely to be uninsured or covered through public insurance plans or reside in states that have not adopted the Medicaid Expansion and are at risk of falling into the Medicaid “coverage gap.”
4. An assessment of insurance plans indicates greater use of prior authorization criteria for TNBC treatments in Medicaid compared to commercial insurance coverage. High rates of Prior authorization approval in breast cancer indicates that this places an unnecessary burden on patients by delaying or preventing appropriate treatment access.
5. Research suggests that prior authorization criteria places a large burden on community-based health centers and negatively impacts access, timely receipt, and adherence to treatment.

Source: CRA analysis of multiple sources

²⁴⁰ H.R.1730 - 116th Congress (2019-2020): All Information (Except Text) for Cancer Drug Parity Act of 2019. (2019, March 13). <https://www.congress.gov/bill/116th-congress/house-bill/1730/all-info>.

²⁴¹ Pollitz, K. (2021). *No Surprises Act Implementation: What to Expect in 2022*. Retrieved from the Kaiser Family Foundation Website: <https://www.kff.org/health-reform/issue-brief/no-surprises-act-implementation-what-to-expect-in-2022/>. Accessed 12 February 2022.

5. Overcoming TNBC care inequities through policy action

In this section, we draw on the evidence presented in this study, including insights from a TNBC patient advocacy group, to identify potential policy changes that could improve the outcomes of TNBC patients. Our literature review indicates a range of potential policy actions to address the inequitable provision of resources for treatment, care coordination and coverage.

5.1. Achieving equitable TNBC care provision

There is a broad consensus in the literature regarding the importance of patient-centric care delivery to address TNBC care inequities. We identify several state policy levers that could be used more broadly and possible federal-level initiatives to support equitable care provision.

Enhance coverage of patient-centric care approaches such as patient navigation services and shared decision-making tools

- **State legislation**, such as that in Washington, has been used to mandate Medicaid providers to engage in shared decision-making.²⁴² This could be adopted by other states, with specific reference to TNBC providers.
- Similarly, states can use demonstration or pilot projects authorized under **Section 1115 waivers** to promote patient-centric care. For example, Washington's Section 1115 Medicaid Transformation Project implements a performance-based incentives system to deliver multidisciplinary care by aligning entities across the health system, including hospitals, social services and community-based organizations.²⁴³ However, states should ensure to optimize multidisciplinary care for under-resourced TNBC patients by incentivizing providers to identify and enroll the patient groups that may be susceptible to the burden of multidisciplinary care.

At a national level:

- CMS could reform the **Oncology Care Model (OCM)** to help to improve the integration of patient navigators into TNBC multidisciplinary care and address patient unmet needs. For example, screenings for patients' social determinants of health and linking to community-based organizations can align care delivery incentives to address inequities.²⁴⁴
- Congress could pass legislation to **allocate funds** to TNBC community-based organizations to provide services which support patient navigation of treatment and care.

5.2. Policies to address the drivers of inequitable TNBC treatment access

Our analysis suggests that overcoming the inequitable provision of treatment and care is particularly important for TNBC patients, given the disease's aggressive nature and the disproportionate impact on under-resourced communities. The analysis suggests several policy recommendations:

²⁴² Shared decision-making demonstration project—Preference-sensitive care. Wash. Rev. Code § 41.05.033 (2007). <https://app.leg.wa.gov/rcw/default.aspx?cite=41.05.033>.

²⁴³ Hinton, E., Stolyar, L. (2021) *Medicaid Authorities and Options to Address Social Determinants of Health (SDOH)*. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/report-section/medicaid-authorities-and-options-to-address-social-determinants-of-health-sdoh-issue-brief/>. Accessed 12 February 2022.

²⁴⁴ Rawal, R., Cloke, A., Zawistowich, L. (2021, August 13). Making Alternative Payment Models Work For Patients. [Blog post] *Health Affairs Blog*. Retrieved from <https://www.healthaffairs.org/doi/10.1377/forefront.20210805.193727>. Accessed 12 February 2022.

Ensure the provision of clinical guideline-concordant care and support treatment adherence

- **CMS' Merit-based Incentive Payment Systems (MIPS) and APMs** have been found to incentivize provider performance. More states could encourage the use of MIPS and APMs to support the provision of clinical guideline-adherent care to TNBC patients.²⁴⁵

At the national level:

- The ACS, NCCN and the National Minority Quality Forum recommend the CDC and national cancer associations to review **clinical practice guidelines** for implicit bias and disparity issues that could eliminate inequities.²⁴⁶ Similarly, TNBC clinical practice guidelines could be updated to recognize the existence of bias in care. Education and training support could be encouraged for providers to become aware of implicit bias in treatment provision and to identify patients at risk of financial toxicity to minimize possible treatment delays and maximize adherence to optimal cancer-directed therapy.

Address the time and financial cost barriers of accessing treatment, especially through clinical trials

- States such as North Carolina have used **Section 1115 waivers** to provide coverage for patients based on criteria linked to the social determinants of health.²⁴⁷ This could be adopted by other states. Section 1115 waivers can also be used to incentivize use of patient navigation programs that help under-represented TNBC patients enroll in clinical trials and navigate the trial enrollment processes.

At the national level,

- Congress could enact the **Cures 2.0 Act (H.R. 6000)** which includes several provisions to increase the diversity of clinical trials, in particular, to conduct awareness campaigns and increase understanding among typically under-presented populations.²⁴⁸ This could support TNBC patient access to investigational treatment.
- Congress could pass the **DIVERSE Trials Act (S.2706)** which promotes access to clinical trials by ensuring the coverage of ancillary costs associated with trial participation, providing patients with technology necessary to facilitate remote participation in clinical trials, providing funding, and mandating the FDA to develop guidance on decentralizing clinical trials.²⁴⁹

²⁴⁵ U.S. Government Accountability Office (GAO)(2021) *Provider Performance and Experiences under the Merit-based Incentive Payment System*. Retrieved from <https://www.gao.gov/assets/gao-22-104667-highlights.pdf>. Accessed 23 February 2022.

²⁴⁶ National Comprehensive Cancer Network. (2021) *Elevating Cancer Equity: Recommendations to Reduce Racial Disparities in Guideline Adherent Cancer Care*. Retrieved from https://www.nccn.org/docs/default-source/oncology-policy-program/2021_elevating_cancer_equity_webinar_slides.pdf?sfvrsn=e11f66e4_2. Accessed 23 February 2022.

²⁴⁷ Hinton, E., Artiga, S., Musumeci, M., Rudowitz, R. (2019). *A First Look at North Carolina's Section 1115 Medicaid Waiver's Healthy Opportunities Pilots*. Retrieved from the Kaiser Family Foundation website: <https://www.kff.org/medicaid/issue-brief/a-first-look-at-north-carolinas-section-1115-medicare-waivers-healthy-opportunities-pilots/>. Accessed 23 February 2022.

²⁴⁸ 21st Century Cures 2.0, Section-by-Section Summary. Retrieved from <https://degette.house.gov/sites/degette.house.gov/files/Cures%202.0%20Section%20by%20Section%20Summary.pdf>. Accessed 23 February 2022.

²⁴⁹ S.2706 - 117th Congress (2021-2022): DIVERSE Trials Act. (2021, August 10, 2021). <https://www.congress.gov/bill/117th-congress/senate-bill/2706>.

- ASCO and Friends of Cancer Research have recommended broadening cancer trial eligibility criteria to expand access.²⁵⁰ Specifically, community-based organizations, national cancer associations, NCI and the FDA could consider removing clinical trial eligibility criteria which leads to bias. The NIH and the FDA could pilot projects for TNBC which encourage standardized data collection and reporting to **increase accountability for increasing diversity in clinical trials**. Further, Congress could provide funding to hospital and community cancer centers to demonstrate equitable recruitment, access, participation, and retention in clinical trials within under-represented populations.

Reduce coverage barriers to genomic testing and foster targeted research

- CMS could issue updated **guidance associated with the NGS NCD** to address evidence of the inequitable provision of NGS, specifically in TNBC. The updated NCD could be issued alongside culturally sensitive education and awareness materials encouraging physicians to recognize and address any implicit bias. Disparities in NGS uptake across states highlight disparities in state Medicaid coverage policies. States could mandate plans to provide coverage aligned with the CMS NCD. In addition, state or federal legislation could support the opportunity for TNBC patients to hold employer-provided short-term insurance, which could reduce the financial barriers to genomic testing for non-Medicaid beneficiaries.²⁵¹
- Congress could **allocate funding and mandate the NIH** to conduct research into the biological and genetic mechanisms that underpin TNBC in high-risk communities. Data could inform further, targeted policy action to address inequities in care.

5.3. Address coverage barriers to affordable TNBC treatment

Policies to remove coverage barriers and address financial toxicity experienced by TNBC patients can ensure equitable and affordable access to TNBC treatment:

Reduce coverage barriers to TNBC treatment

- Many states regulate prior authorization in terms of response time, form, use of electronic submission and decision appeals process.²⁵² Further, some states limit Medicaid Pharmacy utilization management, although few are specific to cancer medicines.²⁵³ States could enact **legislation to limit utilization management** or pass laws to require at least one TNBC treatment is available without prior authorization based on clinical assessment.

²⁵⁰ “ASCO and Friends of Cancer Research Recommend Expanding Patient Access to Cancer Clinical Trials by Further Broadening Eligibility Criteria” ASCO Press Release, February 9, 2021. Retrieved from <https://www.asco.org/practice-policy/policy-issues-statements/asco-in-action/asco-and-friends-cancer-research-recommend>. Accessed 22 February 2022.

²⁵¹ Modell, S. M., Allen, C. G., Ponte, A., & Marcus, G. (2021). Cancer genetic testing in marginalized groups during an era of evolving healthcare reform. *Journal of Cancer Policy*; 28, 100275. <https://doi.org/10.1016/j.jcpo.2021.100275>.

²⁵² American Medical Association. *2021 Prior Authorization State Law Chart*. Retrieved from <https://www.ama-assn.org/media/22571/download>. Accessed February 23, 2022.

²⁵³ Kaiser Family Foundation. *State Statutory Limits on Medicaid Pharmacy Utilization Controls 2019*. [Data set] Retrieved from <https://www.kff.org/other/state-indicator/state-statutory-limits-on-medicaid-pharmacy-utilization-controls/?currentTimeframe=0&sortModel=%7B%22colld%22:%22Location%22,%22sort%22:%22asc%22%7D>. Accessed February 2, 2022.

- Recent research concludes that **ACA and Medicaid expansion** is associated with timely access to cancer treatment, particularly among typically under-resourced communities.²⁵⁴ Based on this evidence, states which have not done so could expand Medicaid access.²⁵⁵
- States could leverage **Section 1115 and 1905(a) authorities** to require federal matching funds to establish and promote pilots which test flexibilities in Medicaid eligibility, benefits and cost-sharing, and payment mechanisms. Pilots or APM can target specific populations (defined by clinical risk factors or geographic location) such as TNBC patients from under-resourced communities.

Identify and support patients at risk of financial toxicity burden

- To avoid delays in TNBC treatment initiation associated with financial toxicity and patients' hesitancy of accruing OOP costs, **states can leverage Medicaid managed care organization (MCO) contracts** to establish quality requirements which incentivize Medicaid managed care provider adherence to quality requirements. As is currently mandated for MCOs in California, states could incentivize providers to identify and discuss TNBC patient financial and social needs and to assess patients for potential distress related treatment and financial toxicity. States can use MCO contracts to incentivize providers by linking payments to the improved health outcomes from the quality requirements.
- States could partner with and **allocate funding** to community-based TNBC organizations that are working to minimize patients' potential financial toxicity, as evidence suggests that it is valuable to engage multiple stakeholders when addressing disparities associated with financial toxicity from breast cancer.²⁵⁶

Clearly the lists above are far-reaching and may include proposals that are infeasible in practice, or where the costs of implementing would be prohibitive. This study should be taken as a starting point for detailed examination of the policies to address health inequity for TNBC patients.

254 Lam M.B., Phelan J., Orav E.J., Jha A.K., Keating N.L. (2020) Medicaid Expansion and Mortality Among Patients With Breast, Lung, and Colorectal Cancer. *JAMA Netw Open*, 3(11) doi:10.1001/jamanetworkopen.2020.24366.

255 Adamson, J.S.B. et al. (2021) ACA Medicaid Expansion Association With Racial Disparity Reductions in Timely Cancer Treatment. *The American Journal of Managed Care*. 27(7):274-281. <https://doi.org/10.37765/ajmc.2021.88700>.

256 Chebli, P., Lemus, J., Avila, C., Peña, K., Mariscal, B., Merlos, S., Guitelman, J., & Molina, Y. (2020). Multilevel determinants of financial toxicity in breast cancer care: Perspectives of healthcare professionals and Latina survivors. *Supportive care in cancer: Official journal of the Multinational Association of Supportive Care in Cancer*, 28(7), 3179–3188. <https://doi.org/10.1007/s00520-019-05119-y>.