Providence Health Plan
P.O. Box 4327
Portland, OR 97208 – 4327
ProvidenceHealthPlan.com

Health Equity Coverage Recommendation Form

Title:	**Health Equity in Stroke**
Date of Last Review:	10/1/2026

Research Section

Background

A stroke is a disease that affects the arteries which lead to and are within the brain.[1] A stroke occurs when a blood vessel carrying oxygen and nutrients to the brain is either blocked by a clot or it bursts or ruptures. When this happens, part of the brain cannot get the blood and oxygen that it needs, so the brain cells in that area die. Stroke is the fifth leading cause of death and a leading cause of long-term disability in the United States.[2] During 1999–2019, non-Hispanic African American adults experienced consistently higher stroke death rates than did non-Hispanic white adults.

Inequities discussed on the Office of Minority Health Website[3]

Stroke and Black/African Americans:[4]

- In 2018, Black/African American adults were 43% more likely to have a stroke than U.S. adults overall.
- In 2022, Black/African Americans were 45% more likely than the overall U.S. population to die from cerebrovascular diseases.
- In 2022, Black/African American men had the greatest risk of dying from cerebrovascular diseases compared with men and women in all other racial and ethnic groups.

Stroke and Native Hawaiians/Pacific Islanders:[5]

In 2022, Native Hawaiians/Pacific Islanders (NHPI) were 33% more likely to die from cerebrovascular diseases than the overall U.S. population.

Review of current, peer-reviewed evidence from established sources

In 2020, Levine and colleagues published a report on intervention targeting racial/ethnic disparities in stroke prevention and treatment. They concluded, “Substantial racial/ethnic disparities in stroke health and health care persist in the United States. Interventions have aimed at reducing stroke risk factors among minorities and diverse racial/ethnic populations. Interventions to reduce blood pressure

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.

have been more successful for primary prevention than for secondary prevention. Interventions have been effective at improving glycemic control particularly in Black, Latino, and Asian individuals. Multiple interventions have increased awareness of stroke symptoms in minority populations, yet stroke awareness and timely stroke treatment remain sub-optimal. Interventions involving health insurance and copayment reductions have improved access to care for minority patients with or at risk for stroke. Still, the persistence of racial/ethnic disparities in stroke health care and health in the United States demands stronger, bolder action. To achieve the goal of equity in the care of patients with or at risk for stroke, we need to identify and disseminate additional cost-effective interventions to further reduce racial/ethnic disparities, improve the control of stroke risk factors, increase stroke awareness, and improve access and quality of stroke care. We also need to train and mentor a new generation of stroke disparities researchers who can perform implementation science. Achieving the goal of equity in the care of patients with or at risk for stroke warrants nothing less."[6]

In 2010, Meschia and colleagues published results from the REasons for Geographic and Racial Differences in Stroke (REGARDS) study, a national, population-based, longitudinal study of 30 239 Black and white individuals ≥45 years old with oversampling from Black groups and the southeastern stroke belt states. Participants were enrolled January 2003 to October 2007. The objective was to examine predictors of awareness of the diagnosis of atrial fibrillation (AF) and treatment with warfarin. From baseline electrocardiograms, 432 individuals (88 Black and 344 white) had AF. Of these, 88% (360 of 409) had at least 1 additional CHADS2 stroke risk factor and 60% (258 of 432) were aware of their AF. The odds of Black individuals being aware of their AF were one third that of white individuals (OR=0.32; 95% CI: 0.20 to 0.52). Among those aware, the odds of Black individuals being treated with warfarin were only one fourth as great as white individuals (OR=0.28; 0.13 to 0.60). The authors concluded that Black individuals were less likely than white individuals to be aware of having AF or to be treated with warfarin. Potential reasons for the racial disparity in warfarin treatment warrant further investigation.[7]

In 2022, Ogasawara and colleagues published a retrospective chart review to characterize risk factors for ischemic stroke in Native Hawaiian and other pacific Islanders (NHOPI) compared to other ethnicities. Compared to Asian and Caucasian individuals, NHOPI patients were on average 11 years younger at the onset of stroke and more likely to be women. The NHOPI group also had the highest rates of diabetes and obesity. NHOPI average income was significantly lower compared to the Caucasian group. Hypertension and hyperlipidemia were found to be higher in the Asian population. Alcohol consumption was reported more frequently among Caucasian patients. The authors concluded: "These results better-characterized risk factors for ischemic stroke among NHOPI in Hawaii. The younger age of stroke onset in NHOPI patients is likely due to the higher burden of cardiovascular risk factors like obesity, smoking, and diabetes. Identifying such disparities in associated risk for NHOPI and other ethnicities can allow targeted stroke prevention and outpatient care in a multicultural setting."[8]

Review of clinical practices guidelines from professional associations and societies in regard to these findings

American Heart Association/American Stroke Association:

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.

In 2021, the AHA/ASA published guidelines for the secondary prevention of ischemic stroke and stated the following:[9]

- Because diabetes disproportionately affects Black and Hispanic communities, effective community-based research for diabetes prevention and management may yield interventions to reduce disparities in stroke risk and recovery.
- Several RCTs have tested secondary stroke prevention interventions in predominantly Black, Hispanic, and low-socioeconomic-status populations.
- The optimal approaches for reducing recurrent stroke risk in high-risk populations are unclear; however, key strategies include evaluating and addressing social determinants of health, implementing evidence-based protocols, monitoring adherence to evidence-based guidelines on a population level, enhancing health and stroke literacy and self-management skills, and using the Agency for Healthcare Research and Quality Universal Precautions Toolkit of Health Literacy.

American Stroke Association:

In 2021, the ASA published guidelines for the prevention of stroke in patients with stroke and transient ischemic attack. Authors stated the following:[10]

- Stroke survivors from historically under-resourced communities, including Black and Hispanic populations, may face social and economic difficulties, systemic racism and poor living conditions that contribute to ill health and make it difficult to make changes to prevent future strokes. Health care professionals should evaluate these factors when managing stroke risk to address gaps in care. Further research is needed to determine the best methods for reducing care gaps after stroke for vulnerable populations.

American Heart Association/American Stroke Association:

In 2014, the AHA/ASA published guidelines for the primary prevention of stroke, authors stated the following:[11]

- Black Americans and some Hispanic/Latino Americans have a higher incidence of all stroke types and higher mortality rates compared with white Americans. This is particularly true for young and middle-aged Black individuals, who have a substantially higher risk of subarachnoid hemorrhage (SAH) and ICH than white individuals of the same age.
- In the Atherosclerosis Risk in Communities (ARIC) study, Black individuals had an incidence of all stroke types that was 38% (95% confidence interval [CI], 1.01–1.89) higher than that of white individuals.
- American Indians have an incidence rate for stroke of 679 per 100000 person-years, which is high relative to non-Hispanic white Americans.
- It remains unclear whether these racial differences are genetic, environmental, or an interaction between the two. Possible reasons for the higher incidence and mortality rates of stroke in Black individuals include a higher prevalence of prehypertension, hypertension, obesity, and diabetes mellitus.

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.

- A higher prevalence of these risk factors, however, may not explain all of the excess risk. Several studies have suggested that race/ethnic differences may be the result of social determinants, including neighborhood characteristics, geography, language, access to and use of health care, and nativity.

Do any of these findings relate to any of our current policies?

None of the above findings are applicable to any of our current medical policies at this time.

Summary

Medical Policy:

Stroke disproportionately affects the Native Hawaiian/Pacific Islander population in the United States. Native Hawaiians/Pacific Islanders are almost four times more likely than non-Hispanic white adults to have a stroke. Despite these discrepancies, evidence-based clinical practice guidelines state that optimal approaches for reducing recurrent stroke risk in high-risk populations are unclear. Possible reasons for the higher incidence and mortality rates of stroke may include a higher prevalence of prehypertension, hypertension, obesity, and diabetes mellitus. Nonetheless, further research is required to determine the best methods for reducing care gaps for these populations. For this reason, there are no distinct utilization and medical necessity criteria for vulnerable populations regarding preventive and post-stroke care at this time.

Pharmacy Policy:

To reduce the incidence of stroke among minority and diverse racial/ethnic populations, it is important to improve equity in primary and secondary preventive care. Managing contributing health conditions, such as hypertension, diabetes, atrial fibrillation, obesity, tobacco use, and hyperlipidemia are all major components of stroke prevention[12]. Of note, hypertension, diabetes, hyperlipidemia (heart disease), and obesity are reviewed in other Health Equity Core reviews. For secondary prevention of stroke, antiplatelet therapy is often added on[13]. While aspirin is only covered by our Medicaid plans due to its availability over-the-counter, ticagrelor, clopidogrel, and dipyridamole + aspirin are available for all lines of business without prior authorization. Additionally, dipyridamole without aspirin is on formulary without prior authorization for Commercial and Medicaid.

These therapies are generally available on low-cost generic tiers, with the exception of ticagrelor and dipyridamole + aspirin Medicare Part D. Warfarin is available on the lowest cost sharing tier, however the need for INR monitoring makes this therapy more challenging for these populations. We do have several direct oral anticoagulants on our formularies without prior authorization, including Eliquis, dabigatran, Savaysa (for Commercial and Medicaid), and Xarelto. Lastly are medications used for tobacco cessation. Varenicline and bupropion SR are available without prior authorization for all lines of business, with these agents being covered in full for many Commercial and all OHP members. Formulary tiering placement was reviewed for all relevant medications and no changes are warranted at this time.

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.

PHP offers preventive lists that are provided for PHP fully insured groups and offered as options for ASO and custom Large groups to opt in to. These lists include many first-line preventive therapies offered either at no-cost to the patient or else they pay only their coinsurance/copay regardless if they have met their deductible. Many commonly used medications for stroke prevention are on these lists, including many antihypertensive agents, some antiarrhythmics, antihyperlipidemic agents (ezetimibe, fibric acid derivatives and statins), diabetic agents, several antiplatelets, and diuretics. Another service PHP offers is mail-order, which helps to improve access and adherence to medications.

Recommendation:	No recommended health equity updates to policies at this time. We will continue to review data and professional organization recommendations for future health equity updates.

References

1. American Heart Association. About Stroke. https://www.stroke.org/en/about-stroke. Accessed 9/25/2024
2. Yang Q, Tong X, Schieb L, Coronado F, Merritt R. Stroke Mortality Among Black and White Adults Aged ≥35 Years Before and During the COVID-19 Pandemic — United States, 2015–2021. MMWR Morb Mortal Wkly Rep 2023;72:431–436. http://dx.doi.org/10.15585/mmwr.mm7216a4.
3. Health USDoHaHS-OoM. Minority Population Profiles. https://minorityhealth.hhs.gov/minority-population-profiles. Published 2024. Accessed 9/25/2024.
4. Health USDoHaHS-OoM. Stroke and Black/African Americans. https://minorityhealth.hhs.gov/stroke-and-blackafrican-americans. Published 2024. Accessed 9/25/2024.
5. Health USDoHaHS-OoM. Stroke and Native Hawaiians/Pacific Islanders. https://minorityhealth.hhs.gov/stroke-and-native-hawaiianspacific-islanders. Published 2024. Accessed 9/25/2024.
6. Levine, D. A., Duncan, P. W., Nguyen-Huynh, M. N., & Ogedegbe, O. G. (2020). Interventions Targeting Racial/Ethnic Disparities in Stroke Prevention and Treatment. *Stroke*, *51*(11), 3425–3432. https://doi.org/10.1161/STROKEAHA.120.030427
7. Meschia, J. F., Merrill, P., Soliman, E. Z., Howard, V. J., Barrett, K. M., Zakai, N. A., Kleindorfer, D., Safford, M., & Howard, G. (2010). Racial disparities in awareness and treatment of atrial fibrillation: the REasons for Geographic and Racial Differences in Stroke (REGARDS) study. *Stroke*, *41*(4), 581–587. https://doi.org/10.1161/STROKEAHA.109.573907
8. Ogasawara, R., Kang, E., Among, J., Oyadomari, K., Capitaine, J., Regaspi, N., Borman, P., Viereck, J., Carrazana, E., & Liow, K. K. (2022). Native Hawaiian and Other Pacific Islanders' Leading Risk Factors for Ischemic Stroke: A Comparative Ethnographic Study. *Journal of stroke and cerebrovascular diseases: the official journal of National Stroke Association*, *31*(6), 106433. https://doi.org/10.1016/j.jstrokecerebrovasdis.2022.106433

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.

9. Kleindorfer, D. O., Towfighi, A., Chaturvedi, S., Cockroft, K. M., Gutierrez, J., Lombardi-Hill, D., Kamel, H., Kernan, W. N., Kittner, S. J., Leira, E. C., Lennon, O., Meschia, J. F., Nguyen, T. N., Pollak, P. M., Santangeli, P., Sharrief, A. Z., Smith, S. C., Jr, Turan, T. N., & Williams, L. S. (2021). 2021 Guideline for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack: A Guideline From the American Heart Association/American Stroke Association. *Stroke*, *52*(7), e364–e467. https://doi.org/10.1161/STR.0000000000000375
10. American Stroke Association. 2021 Guideline for the Prevention of Stroke in Patients with Stroke and Transient Ischemic Attack. Top 10 Patient Messages. https://www.stroke.org/-/media/Stroke-Images/Infographics/PreventingAnotherStroke2021-Guidelines.pdf
11. Meschia, J. F., Bushnell, C., Boden-Albala, B., Braun, L. T., Bravata, D. M., Chaturvedi, S., Creager, M. A., Eckel, R. H., Elkind, M. S., Fornage, M., Goldstein, L. B., Greenberg, S. M., Horvath, S. E., Iadecola, C., Jauch, E. C., Moore, W. S., Wilson, J. A., American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, … Council on Hypertension (2014). Guidelines for the primary prevention of stroke: a statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, *45*(12), 3754–3832. https://doi.org/10.1161/STR.0000000000000046
12. Bushnell C, Kernan WN, Sharrief AZ, et al. 2024 Guideline for the Primary Prevention of Stroke: A Guideline From the American Heart Association/American Stroke Association. Stroke. 2024 Dec;55(12):e344-e424. doi: 10.1161/STR.0000000000000475. Epub 2024 Oct 21. Erratum in: Stroke. 2024 Dec;55(12):e439. doi: 10.1161/STR.0000000000000482. Erratum in: Stroke. 2025 Feb;56(2):e98. doi: 10.1161/STR.0000000000000486. PMID: 39429201.
13. Kleindorfer DO, Towfighi A, Chaturvedi S, et al. 2021 Guideline for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack: A Guideline From the American Heart Association/American Stroke Association. Stroke. 2021 Jul;52(7):e364-e467. doi: 10.1161/STR.0000000000000375. Epub 2021 May 24. Erratum in: Stroke. 2021 Jul;52(7):e483-e484. doi: 10.1161/STR.0000000000000383. PMID: 34024117.

CORE Revision History Section

DATE	SUMMARY OF CHANGES
08/23/2023	Initial review.
09/25/2024	Annual update. No changes.
9/23/2025	Annual update. No changes.
10/1/2026	Annual update. No changes

Disclaimer: Providence Health Plan (PHP) and Providence Health Assurance (PHA) CORE forms serve as guidance for the administration of plan benefits. CORE forms do not constitute medical advice nor a guarantee of coverage. PHP and PHA CORE Medical Policy forms are based upon CMS guidelines and published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last CORE update. PHP and PHA CORE Coding Policy forms are based on national coding standards and CMS guidelines. PHP and PHA reserve the right to determine the application of CORE forms and make revisions to its CORE forms at any time.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and PHP and PHA CORE forms will be resolved in favor of the coverage agreement.