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UH Rural Health Research and Policy Center

The Impacts of Transportation and Travel Access on Rural Health in Hawai‘i

Part 4: The Impacts of Telehealth on Rural Maternal-Fetal Health in Hawai‘i

University of Hawai‘i (UH) Rural Health Research and Policy Center

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Project Overview

The University of Hawai‘i (UH) Rural Health Research and Policy Center (RHRPC) was established in 2022 to translate community health needs into policy solutions. Key partners in our work have included the Hawai‘i State Rural Health Association, Office of Primary Care and Rural Health at the Hawai‘i State Department of Health (DOH), the Hawai‘i/Pacific Basin Area Health Education Center, Provider Shortage Crisis Task Force, and the Pacific Basin Telehealth Resource Center. Some of the community health needs identified to date that have formed the basis for RHRPC's work include the appropriateness of federal formulas for Hawai‘i, such as in determining Medicare reimbursement rates and Health Professional Shortage Area (HPSA) designations and loan/scholarship awards, as well as the need for exemption of certain medical services from the state's General Excise Tax (GET).

Additionally, RHRPC has heard loudly and clearly from the community that transportation/travel access is one of the most important barriers to adequate health care, particularly in rural areas. Transportation is an important economic and social determinant of health (SDOH), impacting both individual and community health.[1] Upstream policy decisions in this area significantly impact downstream health outcomes.[2] For example, patients' access to reliable transportation can impact the ability to attend doctors' appointments or reach an emergency room, thereby impacting acute, primary/preventive, and specialty care. In a non-contiguous state such as Hawai‘i, where those on neighbor islands must often travel on airplanes across the ocean to access care, long travel times, airline unreliability, and travel/financial burdens challenge health care access and negatively impact health outcomes.

In 2024, RHRPC embarked on a multi-part project to study these issues through conducting a literature review; hearing directly from stakeholders about how transportation challenges impact rural health in Hawai‘i; and then leveraging these insights to develop policy options to address the challenges. The completion of this project, entitled "The Impacts of Transportation and Travel Access on Rural Health in Hawai‘i," is presented in four parts. Part 1 is a literature review regarding the impacts of travel and transportation access on rural health, both nationally and in Hawai‘i. Part 2 is a report of our stakeholder insights from 40 interviewees in such fields as health care, transportation services, and insurance. Part 3 is a compilation of policy options to address transportation and travel access barriers and improve rural health in Hawai‘i. Finally, Part 4 is a sub-report outlining specific issues and policy options regarding maternal-fetal telehealth.

[1] Lane, Leigh, Brandy Huston, and Chris Danley. *Connecting Transportation and Health: A Guide to Communication and Collaboration.* National Cooperative Highway Research Program, April 2019. https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25Task105/NCHRP25-25Task105Guidebook.pdf.
[2] Ibid.

Executive Summary

Geographic isolation, workforce shortages, and limited access to high-level Maternal-Fetal (MF) care pose serious challenges for pregnant women and their babies in rural and neighbor island communities across Hawai‘i. Telehealth has emerged nationally as a vital tool for prenatal and postpartum care, particularly in rural areas where physical access to specialists is limited. It enables real-time video consultations and remote monitoring—such as blood pressure and fetal heart rate tracking—often with health outcomes comparable to in-person visits. In Hawai‘i, telehealth use expanded rapidly during the COVID-19 pandemic, bolstered by state laws mandating payment parity. However, adoption remains uneven, particularly for inpatient services and video-based visits. Many appointments are still conducted by phone, especially among lower-income patients and those with limited digital literacy.

This report—Part 4 of a four-part series examining the impacts of transportation and travel access on rural health in Hawai‘i by RHRPC—explores how telehealth can help address these systemic barriers in MF healthcare. The report has three sections - a literature review on MF health nationally and in Hawaii, and the opportunities and challenges of telehealth; a sub-report of Part 2: Stakeholder Insights to focus on stakeholders' views of telehealth for MF care; and policy options to address challenges and expand opportunities to improve telehealth for MF care.

Maternal healthcare in Hawai‘i is uniquely strained by the state's geography. Only one Level 3 maternity hospital, located on O‘ahu, provides care for high-risk pregnancies, forcing thousands of rural residents to travel long distances—sometimes relocating for weeks—to receive critical care. These travel demands create significant financial and emotional burdens and exacerbate existing health disparities. Stakeholder interviews explored both the promise and limitations of telehealth. Providers reported success with hybrid models, such as local clinicians assisting with tele-consultations, and emphasized the need for ongoing funding for equipment and broadband improvements. However, interviewees shared that challenges remain: rural areas often lack sufficient connectivity, digital tools, and trained personnel to support comprehensive telehealth care. Interoperability barriers, siloed health systems, and a lack of incentives for inter-island provider collaboration further hinder effective implementation.

To address these challenges, the report proposes policy options in three key areas. First, it recommends investing in telehealth infrastructure through grants for clinics and rural hospitals, training initiatives, and the development of a statewide maternal telehealth network. Second, it calls for expanding Medicaid coverage for remote monitoring tools for high-risk pregnancies and ensuring providers are supported in data interpretation and coordination. Finally, it outlines strategies to close the digital divide, including broadband infrastructure expansion, distribution of telehealth-compatible devices, and community-based digital literacy programs tailored to maternal health needs.

Taken together, these recommendations provide a roadmap for building a more equitable and resilient maternal healthcare system in Hawai‘i. Telehealth is not a panacea, but with

strategic investment and policy support, it can significantly reduce travel burdens, improve access to timely care, and enhance health outcomes for pregnant women across the state.

Introduction

Access to quality maternal-fetal (MF) healthcare in rural Hawai‘i is significantly limited by geographic isolation, transportation challenges, and a shortage of Obstetrician/Gynecologists (OBGYNs) and MF medicine specialists. This paper explores the role of telehealth in addressing these barriers for pregnant women in Hawai‘i’s rural and neighbor island communities. By examining the benefits, limitations, and policy considerations surrounding MF telehealth, this report aims to highlight opportunities for improving healthcare access through digital solutions.

This Part 4 of our series includes a literature review of relevant research and data related to MF telehealth. Findings from our literature review (Part 1) and Stakeholder Insights (Part 2) underscore the potential of telehealth to enhance prenatal and postpartum care, while also stressing critical challenges such as broadband access, digital literacy, and workforce shortages. The report concludes with policy options to strengthen telehealth infrastructure, expand remote monitoring, and address digital equity, ultimately working toward improved maternal and infant health outcomes in Hawai‘i.

Literature Review

Of the approximately four million births that occur each year in the United States, one in seven births occur in rural areas, where in-person care can be difficult to access.[3] In 2022, 36% of U.S. counties were designated as maternity care deserts (a geographic area with limited or no access to obstetric [OB] care services).[4] Maternity care deserts are defined as counties with no hospitals or birthing centers providing OB care, which are disproportionately located in rural communities.[5] As a result, rural areas are at greater risk of complications with pregnancy and delivery compared to urban areas.[6] These complications lead to increased costs for both mothers and babies, which are borne by consumers, providers, and insurers. On average, hospitalizations for preterm/low-birth weight infants cost approximately $15,000 per stay.[7]

[3] Sheffield, Emily C., Alyssa H. Fritz, Julia D. Interrante, Katy Backes Kozhimannil. “The Availability of Midwifery Care in Rural United States Communities.” *Journal of Midwifery & Women’s Health,* 69, no. 6 (July 2024): 929-936. https://doi.org/10.1111/jmwh.13676
[4] “Nowhere to Go: Maternity Care Deserts Across the U.S. (2022 Report).” March of Dimes, 2022. https://www.marchofdimes.org/maternity-care-deserts-report-2022
[5] Ibid.
[6] “Pregnancy Mortality Surveillance System.” U.S. Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/maternal-mortality/php/pregnancy-mortality-surveillance/#cdc_survey_profile_how_the_information_is_used-pregnancy-related-deaths-by-urban-rural-classifications
[7] Russell, Rebecca B., Nancy S. Green, Claudia A. Steiner, Susan Meikle, Jennifer L. Howse, Karalee Porschman, et al. “Cost of hospitalization for preterm and low birth weight infants in the United States.” *Pediatrics* 120, no. 1 (July 2007): e1-9. https://doi.org/10.1542/peds.2006-2386

Maternal Health in Hawai‘i

Population and Birth Statistics

Hawai‘i has a population of over 1.4 million people, according to the 2024 U.S. Census.[8] Across the state, there is only one Level 3 maternity hospital, Kapi‘olani Medical Center for Women and Children (KMCWC), located on O‘ahu, which provides subspecialty MF care and services for high-risk pregnancies. There are 17,000 births per year in Hawai‘i. While many pregnant women receive obstetric care on their home island, approximately 4,000 pregnant women must travel to KMCWC for essential prenatal care per year, including for ultrasound examinations and management of high-risk pregnancies.[9] High-risk pregnant patients on neighbor islands, and almost all pregnant patients on Moloka‘i and Lāna‘i, must relocate to O’ahu or Maui several weeks to months before delivery.[10]

Transportation and Financial Barriers

Due to the high number of pregnant women who must seek care off-island, transportation issues often rise to the top of concerns and challenges. Inter-island travel in Hawai‘i is primarily conducted by fixed-wing airplanes, with round-trip fares ranging from $100 to $300. Additional expenses include a round-trip taxi fare from the airport, which costs approximately $150, and any travel costs for a companion. Women traveling for care often face further financial burdens due to the cost of lodging, which can vary significantly (such as whether staying with relatives, at a hotel, Ronald McDonald House, or short-term rental). Depending on the insurance plan, these travel and accommodation costs may not be fully covered and can impose a substantial financial strain on families, exacerbating barriers to accessing necessary maternal health care. For instance, lodging during the weeks before childbirth is not a reimbursable expense covered by the Hawai‘i Medical Service Association (HMSA) Preferred Provider Organization (PPO) plan, which is the most popular plan on Lāna‘i.[11] Opportunity costs such as childcare, missing work, and leaving their families behind further contribute to the burden placed on pregnant women, making it a lonely and expensive trip to give birth.

Prenatal Care and Health Outcomes

Maternal access to prenatal care is one of the most important determinants of birth outcomes.[12] Adequate prenatal care includes patient education, fetal monitoring, screening for

[8] “2024 State Population Estimates.” Department of Business, Economic Development & Tourism, Dec 19 2024. https://census.hawaii.gov/main/2024-state-pe/
[9] Sullivan, Cathlyn, Marguerite Cazin, Christina Higa, Ivica Zalud, Men-Jean Lee. “Maternal telehealth: innovations and Hawai‘i perspectives.” *Journal of Perinatal Medicine* 51, no. 1 (November 2022). https://doi.org/10.1515/jpm-2022-0394
[10] Lyte, Brittany. “Giving Birth Is An Expensive And Lonely Trip For Some Rural Hawaii Women.” Honolulu Civil Beat, June 30, 2023. https://www.civilbeat.org/2023/06/for-some-rural-hawaii-women-giving-birth-is-an-expensive-and-lonely-trip/
[11] Ibid.
[12] Crear-Perry, J., Correa-de-Araujo, R., Lewis Johnson, T., McLemore, M. R., Neilson, E., & Wallace, M. (2021). “Social and Structural Determinants of Health Inequities in Maternal Health.” Journal of women's health (2002), 30(2), 230–235. https://doi.org/10.1089/jwh.2020.8882

risk factors, and emotional support. Hawai‘i ranks last (50th) in the United States in terms of adequate prenatal care during the first four months of pregnancy, with 37% of births receiving no or inadequate prenatal care.[13] This lack of early prenatal care contributes to overall poor maternal and newborn health outcomes. The infant mortality rate for white people in Hawai‘i is 3.6 deaths per 1,000 births, compared to 5.9 deaths per 1,000 births in the Pacific Islander population.[14] Approximately 10 to 12 pregnant women die each year in Hawai‘i from pregnancy-related complications, with more than half of these deaths deemed preventable.[15,16]

In the context of rising maternal and newborn mortality rates in the United States, Hawai‘i faces additional challenges that are reflected in various negative health outcomes:

- Recovery rates: Delays in accessing prenatal care and specialized services can negatively impact recovery rates post-delivery. Pregnant women with no prenatal care before the third trimester have higher odds of stillbirth, neonatal death, preterm delivery, fetal growth restriction, and severe pre-eclampsia.[17]
- Referral rates to specialists: There is limited access to specialty-trained personnel on neighbor islands, which lengthens wait times from referrals to appointments with specialists, which may be needed by newborns or premature infants. Pediatric subspecialties such as gastroenterology, endocrinology, and pulmonology account for some of the greatest subspecialty shortages across the state.[18]
- Hospital readmission rates: Inadequate or delayed prenatal care can lead to negative health outcomes due to complications that could have been managed earlier with proper care.[19]

Resource and Infrastructure Deficiencies

Several systemic issues compound the challenges faced in MF health care in Hawai‘i:

- Lack of specialty-trained personnel: Neighbor islands have a shortage of OB sonographers, genetic counselors, and MF health specialists. This shortage often necessitates patient travel to Honolulu for specialized care, further stressing the already-strained healthcare system. Due to the availability of neonatal intensive care unit (NICU) and specialty care, 72.9% of all deliveries in the state occur on O‘ahu.[20]

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[13] "2024 Health of Women and Children Report." America's Health Rankings, 2024. https://assets.americashealthrankings.org/app/uploads/hawaii-hwc2024.pdf

[14] "2024 March of Dimes Report Card for Hawaii." March of Dimes. https://www.marchofdimes.org/peristats/reports/hawaii/report-card

[15] "Department of Health receives federal grant to help reduce maternal mortality in Hawai‘i." State of Hawaii, Department of Health, Dec 1 2023. https://health.hawaii.gov/news/newsroom/department-of-health-receives-federal-grant-to-help-reduce-maternal-mortality-in-hawaii/

[16] Maykin, Melanie and Stacy Pai-Jong Tsai. "Our Mothers Are Dying: The Current State of Maternal Mortality in Hawai‘i and the United States." *Health Journal of Health and Social Welfare* 79, no. 10 (Oct 2020): 302-305. https://pmc.ncbi.nlm.nih.gov/articles/PMC7547177/

[17] Price, Stephanie M. and Aaron B. Caughey. "The impact of prenatal care on pregnancy outcomes in women with depression." *The Journal of Maternal-Fetal & Neonatal Medicine,* 35, no. 20 (November 2020): 3948-3954. https://doi.org/10.1080/14767058.2020.1844655

[18] "Hawai‘i Physician Workforce Report 2024." Hawaii/Pacific Basin AHEC. https://ahec.hawaii.edu/ahecsite-forhealthcareprofessionals/workforce-data.html

[19] Eunice Kennedy Shriver National Institute of Child Health and Human Development. "Preconception Care." *National Institutes of Health*, last reviewed September 7, 2017. https://www.nichd.nih.gov/health/topics/preconceptioncare.

[20] "Where You Live Matters: Maternity Care in Hawaii." March of Dimes, 2023. https://www.marchofdimes.org/peristats/assets/s3/reports/mcd/Maternity-Care-Report-Hawaii.pdf

- Technological limitations: Due to the non-contiguous nature of Hawai‘i, there is an absence of reliable broadband internet, robust ultrasound image storage, and reporting networks (systems that facilitate the collection, sharing, and analysis of healthcare data), which limits the effectiveness of remote consultations. Furthermore, the lack of telehealth-ready equipment and the absence of coordinated telehealth platforms restrict access to real-time examinations and remote care.
- Underserved populations: Native Hawaiian families, among other underserved groups, face significant barriers in accessing adequate maternal health services. Of pregnant Native Hawaiian women in higher maternal reproductive vulnerability areas of Hawai‘i, 33.3% will receive inadequate prenatal care.[21] For Pacific Islanders, this rises to 64.3%, compared to 28.3% overall.[22] Systemic issues such as a lack of childcare, transportation, and affordable housing further hinder access to necessary care.
- Rural counties: The average distance traveled by car to the nearest birthing hospital in the state of Hawai‘i is 10.0 miles and 21.2 minutes; however, patients living in areas with the highest travel times could travel up to 58.3 miles and 84.6 minutes for obstetric care.[23] Over 23% of patients in Hawai‘i live more than 30 minutes away from a birthing hospital.[24]

It is recognized that addressing these MF care challenges in rural areas requires a multifaceted approach, which may involve improvements in healthcare infrastructure, better coordination of services, and targeted support for communities who lack access to care. Enhancing local resources and expanding telehealth and transportation capabilities could alleviate some barriers and improve maternal and newborn health outcomes in Hawai‘i.

Telehealth for Prenatal and Postpartum Care

Across the nation, telehealth has rapidly expanded to provide many services during the prenatal and postpartum periods. Telehealth can include 1) video conferencing and consultations, 2) remote patient monitoring, and 3) tele-imaging. As with telehealth generally, prenatal telehealth can be understood as either real-time or remote monitoring. Real-time telehealth involves phone or video calls, which can replace many face-to-face interactions. Remote monitoring involves remote blood pressure monitoring, fetal heart rate recordings via home ultrasound, and fetal growth via tape measure.[25]

Providing telehealth as an alternative to in-person care is especially important for rural communities, where patients may be more likely to consider a televisit over an in-person visit due to convenience and lower costs. This flexibility using digital means enables patients to

[21] Ibid.
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] Atkinson, Jessica, Roxanne Hastie, Susan Walker, Anthea Lindquist, Stephen Tong. “Telehealth in antenatal care: recent insights and advances.” *BMC Med* 21, no. 332 (August 2023). https://doi.org/10.1186/s12916-023-03042-y

interact with specialized physicians who may not be available locally and allows clinics to prioritize in-person access for those with acute needs.[26] Providing digital options such as phone-based pregnancy applications can increase the utilization of prenatal services, especially in maternity care deserts.[27] Additionally, hybrid approaches with in-person and telehealth visits can be equally effective to in-person visits without compromising the quality of care.[28] One study in Wyoming evaluated the rates of preterm births or NICU admissions of Medicaid beneficiaries who utilized such services, and found there were no significant differences in utilization rates between hybrid televisits and in-person visits.[29]

Telehealth approaches have also been successful in supporting mothers during the postpartum period, where most maternal deaths occur.[30] Postpartum care entails careful follow-up and treatment of high-risk conditions, such as hypertension, to reduce adverse health outcomes. In such cases, telehealth can be easily incorporated; for instance, with the use of remote blood pressure monitoring tools,[31] visits for smoking cessation,[32] and behavioral therapies for postpartum depression.[33]

Challenges to National Telehealth Implementation

Lack of supportive infrastructure plays a significant role in the underutilization of MF telehealth. Inadequate broadband internet access, expensive technology, and poorly integrated language services are barriers to implementation in rural hospitals and community health centers.[34] Broadband access is often considered the main barrier in telehealth care delivery and is so closely associated with health outcomes that it is deemed a social determinant of health by the American Medical Informatics Association.[35]

Broadband access has key links to infrastructure and transportation. The Hawai‘i State Department of Transportation (HI DOT) works closely with the State Broadband Office and

[26] Udegbe, Beverly C., Mark A Clapp, Allison S. Bryant "Disparities from bedside to "webside": barriers to achieving equity in telemedicine in obstetrics." *AJOG Global Reports* 3, no. 1 (Jan 2023): 100159. https://doi.org/10.1016/j.xagr.2022.100159
[27] "Nowhere to Go: Maternity Care Deserts Across the U.S. (2022 Report)." March of Dimes, 2022. https://www.marchofdimes.org/maternity-care-deserts-report-2022
[28] Ghimire, Sarala, Santiago Martinez, Gunnar Hartvigsen, Martin Gerdes. "Virtual prenatal care: A systematic review of pregnant women's and healthcare professionals' experiences, needs, and preferences for quality care." *International Journal of Medical Informatics.* https://doi.org/10.1016/j.ijmedinf.2022.104964
[29] Bush, James, Dilek E. Barlow, Jennie Echols, Jasmine Wilkerson, Katherine Bellevin. "Impact of a Mobile Health Application on User Engagement and Pregnancy Outcomes Among Wyoming Medicaid Members." *Telemedicine and e-Health,* 23, no. 11 (November 2017): 891-898. https://doi.org/10.1089/tmj.2016.0242
[30] Hirko, Kelly A., Ann Heler, and Tamara Sampson. "Telehealth to Address Preventable Maternal Deaths: A Call to Action." *Telemedicine and e-Health* 30, no. 12 (December 2024). https://doi.org/10.1089/tmj.2024.0522
[31] Hirshberg, Adi, Mary D. Sammel, and Sindhu K. Srinivas. "Text message remote monitoring reduced racial disparities in postpartum blood pressure ascertainment." *Medical Journal of Obstetrics and Gynecology* 221, no. 3 (September 2019): 283-285. https://doi.org/10.1016/j.ajog.2019.05.011
[32] DeNicola, Nathaniel, Daniel Grossman, Kathryn Marko, Sarita Sonalkar, Yvonne S. BUtler Tobah, Nihar Ganju, et al. "Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review." *Obstetrics & Gynecology* 135, no. 2 (February 2020): 371-382. https://doi.org/10.1097/AOG.0000000000003646
[33] Hanach, Nivine, Nanne de Vries, Hadia Radwan, Nour Bissani. "The effectiveness of telemedicine interventions, delivered exclusively during the postnatal period, on postpartum depression in mothers without history or existing mental disorders: A systematic review and meta-analysis." *Midwifery* 94, 102906 (March 2021). https://doi.org/10.1016/j.midw.2020.102906
[34] Park, Jeongyoung, Cleanse Erikson, Xinxin Han, Preeti Iyer. "Are State Telehealth Policies Associated With The Use Of Telehealth Services Among Underserved Populations?" *Health Affairs* 37, no. 12 (December 2018): 2060-2068. https://doi.org/10.1377/hlthaff.2018.05101
[35] Waldrop, Anne R., Giovanna Cruz, Paula Trepman, Sanaa Suharwardy. "Barriers to telehealth usage by maternal fetal medicine providers by US region and urbanicity." *American Journal of Obstetrics & Gynecology* 226, no. 1 (January 2022): S88-89. https://www.ajog.org/article/S0002-9378(21)01359-4/fulltext

federal partners to leverage transportation rights-of-way and infrastructure projects as opportunities to install and expand high-speed internet infrastructure. There is significant interdependence between broadband access and rural healthcare delivery. Telehealth solutions, including remote monitoring for high-risk pregnancies, virtual consultations, and hybrid care models, are most effective when paired with robust broadband availability. Expanding broadband access not only facilitates MF telehealth but also supports primary care, behavioral health services, and public health emergency response in isolated communities.

The perceptions of healthcare providers and patients on telehealth also affect its implementation. Inherent biases and assumptions among healthcare providers may make them less likely to offer patient portal access or televisits to certain demographics. For instance, a national survey of U.S. patients found that 92% of adults consider online access to their personal health information important, but only 34% were offered access to their records by their healthcare provider.[36] The survey revealed this discrepancy to be highest in Black and Hispanic patients, despite having equal access to technology.[37] Some patients may be concerned about a lack of physical examination and believe that in-person visits offer a more accurate diagnosis and better treatment of the disease. One recent study from 2023 found that face-to-face communication may also facilitate stronger patient-provider relationships.[38]

Payment parity for telehealth services across all types of health insurers has also remained a challenge to the national implementation of telehealth services. Before the COVID-19 pandemic, many telehealth services were reimbursed by insurers at a lower rate compared to in-person services, if reimbursed at all. At the onset of the pandemic, the Centers for Medicare and Medicaid Services (CMS) utilized its waiver authority to ensure payment parity among traditional in-person visits, video consultations, and audio-only telehealth visits during COVID-19 for Medicare patients. The majority of commercial payers and state Medicaid plans adopted a similar approach.[39] The Consolidated Appropriations Act of 2023 extended waivers for Medicare telehealth expansion temporarily, and these waivers are currently at risk of expiring as of September 2025. Included in the extensions are payment parity, waiving of originating site requirements, expanded coverage of telehealth services, coverage of audio-only services, expansion of eligible "distant site" telehealth providers, and more.[40] Many states adopted their own telehealth expansion laws, including Hawai‘i, which mandated in 2016 that all health insurers reimburse for telehealth services at the same rate as in-person services.[41]

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[36] Peacock, Sue, Ashok Reddy, Suzanne G. Leveille, Jan Walker, Thomas H. Payne, Natalia V. Oster, Joann G. Elmore. "Patient portals and personal health information online: perception, access, and use by US adults." *Journal of the American Medical Informatics Association* 24, no. 1 (April 2017): e173-177. https://doi.org/10.1093/jamia/ocw095

[37] Ibid.

[38] Moulaei, Khadijeh, Abbas Sheikhtaheri, Farhad Fatehi, Mostafa Shanbehzadeh, Kambiz Bahaadinbeigy. "Patients' perspectives and preferences toward telemedicine versus in-person visits: a mixed-methods study on 1226 patients." *BMC Medical Informatics and Decision Making* 23, no. 261 (November 2023). https://doi.org/10.1186/s12911-023-02348-4

[39] Khera, N., Knoedler, M., Meier, S. K., TerKonda, S., Williams, R. D., Wittich, C. M., Coffey, J. D., & Demaerschalk, B. M. Payment and Coverage Parity for Virtual Care and In-Person Care: How Do We Get There? *Telemedicine reports*, *4*(1), 100–108. (2023). https://doi.org/10.1089/tmr.2023.0014

[40] Freed, Meredith. "What to Know About Medicare Coverage of Telehealth." KFF, February 9, 2024. https://www.kff.org/medicare/issue-brief/what-to-know-about-medicare-coverage-of-telehealth/.

[41] Hawai‘i Revised Statute Act 226 (16).

Telehealth in Hawai‘i

Telehealth has emerged in Hawai‘i as a solution to address unique geographic barriers to healthcare, particularly for patients in rural areas and on neighboring islands. A significant push towards telehealth in Hawai‘i began in 2016 when the Telehealth Bill (Act 226) was signed into law by Governor David Ige.[42] This Act mandated private insurers and Medicaid to provide equal reimbursement for telehealth services compared to office visits, a critical mandate as telehealth adoption is strongly correlated with payment parity.[43] In Hawai‘i, as well as elsewhere, the use of telehealth grew considerably due to the COVID-19 pandemic, with high usage continuing today, as a majority of providers now offer telehealth as part of their standard menu of services. In 2022, Hawai‘i ranked as the highest adopter nationally of telehealth in the outpatient setting with a 22% adoption rate.[44]

Telehealth and the COVID-19 Pandemic

Prior to the pandemic, some providers and organizations in Hawai‘i implemented telehealth for behavioral health services to provide patient services and consultations to rural areas. Behavioral health consistently ranks nationally as the medical specialty that utilizes telehealth the most, with (57.1%) of outpatient visits utilizing telehealth since 2020,[45] though many specialties have benefited from the flexibility of remote care, such as urgent care and chronic disease management.[46]

Many patients in Hawai‘i identify the reduced opportunity costs of traveling, paying to stay on O‘ahu or Maui for medical appointments, and missing work or school as primary reasons to engage in telehealth.[47] A study in Hawai‘i evaluating telehealth in pediatric post-operative care found telehealth to be an acceptable alternative to in-person visits for both simple and complex procedures.[48] In that same study, patients in Hawai‘i who lived further than 23 miles from the hospital were more likely to choose telehealth services over those who lived closer. There was a significant decrease in travel costs and time with no difference in the rate of complications between telehealth and office visits.[49]

In Hawai‘i, oncology clinics have also utilized telehealth to address the severe oncologist shortages on neighboring islands. A study evaluating the perception of telehealth among cancer

[42] Hawaii State Legislature. "SB 2395 (2016)." *Hawaii State Legislature.* https://www.capitol.hawaii.gov/sessions/session2016/bills/GM1328_.PDF
[43] The Chartis Group. Telehealth Trend Analysis: A Look at Telehealth Utilization, Payment Parity, and the Future of Virtual Care. October 2022. https://www.chartis.com/sites/default/files/documents/Chartis_Telehealth_Trend_Analysis_OCT-2022.pdf.
[44] Anderson, Bret, Kendra Carr, and Clayton Donahue. “Telehealth Now a Permanent Fixture for U.S. Healthcare Delivery.” Chartis, October 31, 2022.
[45] Ibid.
[46] Ibid.
[47] Acoba, Jared D., Chelsea Yin, Michael Meno, Justin Abe, Ian Pagano, Sharon Tamashiro, et al. “Racial Disparities in Patient-Provider Communication During Telehealth Visits Versus Face-to-face Visits Among Asian and Native Hawaiian and Other Pacific Islander Patients With Cancer: Cross-sectional Analysis.” JMIR Cancer 8, no. 4 (Dec 2022):e37272. https://doi.org/10.2196/37272.
[48] Laferriere, Nicole R., Michele Saruwatari, Xuan-Lan Doan, Kelli B. Ishihara, Devin P. Puapongm, Sidney M. Johnson, Russell K. Woo. “Telehealth Delivery of Outpatient Pediatric Surgical Care in Hawai‘i: An Opportunity Analysis.” *Hawai‘i Journal of Health & Social Welfare* 79, 5 Suppl 1 (May 2020): 19–23.
[49] Ibid.

patients in Hawai‘i revealed that 65.6% of patients considered the overall quality of care of a telehealth visit to be equivalent to or better than an in-person visit.[50] The percentage of patients in the study that considered the following factors to have equivalent or better quality for telehealth compared to an in-person visit included: time with the provider (72.2% of patients), wait time (89.2% of patients), and finding a convenient time for the visit (85.5% of patients). Additionally, most patients felt comfortable with telehealth (90% of patients), considered the technology easy to set up and use (86.8% of patients), and agreed that their information was securely transmitted (82.1% of patients). The overall satisfaction rate in this study was higher among the patients who utilized the video feature during their telehealth visit, as compared with patients who only used the audio feature (71.9% versus 65.6% satisfaction rate, respectively).

Challenges with the Adoption of Telehealth for Inpatient and Outpatient Services

Despite ranking first in the nation in outpatient adoption of telehealth, as noted earlier, Hawai‘i ranks last (50th) in the nation for the adoption of telehealth services for inpatient services, with 31.3% of inpatient services utilizing telehealth in the state.[51] This is due in part to limited technology installations.[52] For example, there is limited broadband infrastructure in rural areas, as development is expensive and difficult to implement given the non-contiguous nature of the state. Many rural areas on the islands of Hawai‘i, Maui, Kaua‘i, Lāna‘i, and Moloka‘i often fall below the Federal Communication Commission’s definition of broadband (download speeds of 100 megabits per second [Mbps] and upload speeds of 20 Mbps).[53]

Although telehealth for outpatient services has been widely adopted, the state has the lowest video use combined with audio (55% of outpatient appointments utilizing video and audio telehealth together) in the nation, as most appointments are conducted over the telephone using audio only (44% of appointments utilizing solely audio).[54] Patients with lower incomes or those with poor technology literacy are more likely to have audio-only visits,[55] which may hinder the patient-provider connection, trust, and rapport building. In addition, not utilizing the video feature makes it difficult for healthcare providers to conduct a comprehensive clinical assessment, as they are unable to observe the patient’s physical gestures, such as non-verbal cues or body language. One study showed that Native Hawaiians and Pacific Islanders with Medicaid are 39% less likely to use telemedicine compared to White individuals with Medicaid.[56] This may be linked to varying levels of comfort with the English language, lacking the necessary

[50] Meno, Michael, Justin Abe, Jami Fukui, Christa Braun-Inglis, Ian Pagano, Jared Acoba. “Telehealth amid the COVID19 pandemic: perception among Asian, Native Hawaiian and Pacific Islander cancer patients.” *Future Oncology* 17, no. 23 (June 2021): 3077–85. https://doi.org/10.2217/fon-2021-0136.
[51] Definitive Healthcare. “Hospital telehealth adoption by state.” February 12, 2024. https://www.definitivehc.com/resources/healthcare-insights/hospital-telehealth-adoption-by-state
[52] Definitive Healthcare. “Hospital telehealth adoption by state.” February 12, 2024. https://www.definitivehc.com/resources/healthcare-insights/hospital-telehealth-adoption-by-state
[53] “Hawaii Broadband Strategic Plan.” *Department of Business, Economic Development & Tourism, Office of Planning, State of Hawaii.* October 2020.
[54] Chartis, “Telehealth Now a Permanent Fixture for U.S. Healthcare Delivery.” October, 2022. https://www.chartis.com/sites/default/files/documents/Chartis_Telehealth_Trend_Analysis_OCT-2022.pdf
[55] Ibid.
[56] Morenz, Anna M., Ashok Reddy, Amy Hsu, Anh Le, Edwin S. Wong, Joshua M. Liao. “Disparities in telemedicine use among Native Hawaiian and Pacific Islander individuals insured through Medicaid.” *Health Affairs Scholar* 2, no. 5 (May 2024). https://doi.org/10.1093/haschl/qxae057

resources to conduct telemedicine appointments, or not being offered a telemedicine visit despite having internet access.[57]

Stakeholder Insights

As discussed in Part 2: Stakeholder Insights, RHRPC conducted interviews with 40 stakeholders, including in sectors such as healthcare, transportation, insurance, and government, to better understand barriers to care and explore policy solutions for improving travel access. Using a rapid qualitative analysis of detailed field notes, the team identified four main themes—EMS, NEMT, Insurance Coverage, and MF Health—along with several subcategories including telehealth, workforce shortages, and patient barriers. The findings were organized into a final matrix highlighting key quotes and insights by stakeholder type to guide future policy discussions. A full methodology is included in Part 2 of this series.

Findings

Telehealth was one of the main recurring sub-themes that was discussed in interviews, with sixteen out of the forty interviewees discussing telehealth, including multiple MF providers. Telehealth was proposed as a solution to many transportation-related problems; however, some interviewees mentioned how it is not always appropriate or feasible to conduct an appointment via telehealth.

One maternal health physician shared how telehealth has worked successfully, not only in the OB/gynecology (GYN) field, but other fields as well. Another physician mentioned how she distributed blood pressure cuffs to her patients, so that their vital signs could be monitored through telehealth; however, funding would need to be increased for this service to be sustainable. One physician also mentioned that although it would be helpful to increase the use of telehealth in the OB/GYN field, it is required that prenatal check-ups and testing (e.g., listening to the baby's heart every two weeks) be done by a healthcare provider (e.g., nurse practitioner). One participant said:

"All mothers are not able to deliver on Lānaʻi [in a medical setting], so [they] must relocate."

-Lānaʻi health provider

If neighbor islands lack the healthcare providers that can provide these check-up services locally through hybrid-telehealth services. Hybrid-telehealth services in Hawaiʻi often include conducting a telehealth visit with the Oʻahu provider at a neighbor island facility[58]. Even with

[57] Ibid.
[58] U.S. Department of Health and Human Services. "Using Telehealth Hybrid Care." Telehealth.HHS.gov. https://telehealth.hhs.gov/providers/best-practice-guides/using-telehealth-hybrid-care.

hybrid-telehealth services, patients will still need to often fly to O‘ahu or Maui for their appointments. One participant described this feeling as follows:

“[It is a] big big disruption to bring mothers with birth issues to O‘ahu, but sometimes that travel wasn’t even needed."

-O‘ahu physician

Even if the number of healthcare professionals (including nurses practitioners [NPs] and physician assistants [PAs]) increased on neighbor islands to assist the physician on O‘ahu or Maui to assist with hybrid-telehealth services, some MF physicians mentioned that their patients and/or assisting healthcare providers stationed in the rural communities do not want to participate in telehealth as the technology is not up to par or they have difficulty utilizing the service altogether. Stakeholders shared clearly that telehealth decreased some transportation barriers, but increasing the number of specialists and maternal health providers (including NPs and PAs) on neighbor islands, as well as increasing funding for telehealth-related costs (improving bandwidth, increasing telehealth education, providing telehealth materials) may be required for successful implementation. One participant said:

“[There are] unique mobility issues for low-income women and women living outside of transit-rich areas."

-Community Organizer

One of our interviewees from a Community-Based Organization (CBO) mentioned their organization is still attempting to get transportation covered entirely by insurance providers and, although telehealth may have some positive aspects, it is not the end-all-be-all solution as many healthcare services need to be given in-person and rural areas have internet reliability/connectivity issues. Additionally, a physician reiterated the fact that not all services can be done via telehealth, but rather can be seen as an extension of care, sharing that she was able to walk another healthcare provider on a neighbor island through a catheter procedure via telehealth.

Similarly, neighbor island interviewees mentioned that telehealth has been quite successful on their home islands, alluding to the fact that the healthcare providers on neighbor islands are the “hands” for physicians on O‘ahu and Maui. Another CBO representative mentioned how there were policies in the works to improve internet reliability/connectivity issues on neighbor islands. For example, the interviewee shared about a policy that would increase funding for libraries so they would be able to improve their internet bandwidth, provide private areas for community members to conduct their telehealth visits, and provide education to community members on how to do a telehealth visit with their healthcare provider. Other

interviewees discussed how since the pandemic, insurance coverage for telehealth services was extended or expanded, and should be made permanent. While telehealth has shown a positive impact and can help minimize transportation barriers, one healthcare facility representative was sure to note that the more prominent solution would be to implement a federal intervention that worked toward improving the workforce in rural areas.

One interviewee shared that another barrier to the widespread adoption of maternal telehealth services in Hawai‘i is the siloed nature of healthcare systems. The interviewee described how healthcare organizations in Hawai‘i often prefer to use their own electronic medical records (EMR) and telehealth platforms, expressing reluctance toward data sharing agreements due to concerns over cybersecurity and the potential for data loss or ransomware attacks. This hesitation significantly hampers inter-system collaboration and data integration. Furthermore, this interviewee discussed how Hawai‘i’s healthcare systems are in direct competition with one another to capture market share, which can result in less efficient provider recruitment and retention strategies. This competitive dynamic, the interviewee noted, creates an environment where collaboration on telehealth initiatives is hindered, as systems are generally unwilling to invest in platforms that could indirectly benefit competitors.

Multiple interviewees described how financial constraints and the administrative burden of integrating telehealth solutions with existing EMRs also pose substantial challenges. The costs associated with implementing telehealth systems are high, and healthcare organizations are hesitant to commit resources without a clear and immediate return on investment. Legal, data security, regulatory, and financial considerations further complicate these efforts, making seamless telehealth adoption daunting. The interviewee noted that as a consequence of these systemic barriers, healthcare navigation has become increasingly difficult for patients, often resulting in delays for patients receiving preventive care.

Discussion

Our Stakeholder Insights demonstrated that there is an intense need in rural Hawai‘i for increased and improved telehealth services for MF care. Interviewees discussed the potential of telehealth to reduce transportation-related barriers to care, especially for maternal and rural populations, highlighting its utility in expanding access to healthcare services across Hawai‘i. Participants overall found that while telehealth could be a valuable supplement to in-person care—particularly through hybrid models involving local providers and specialists on larger islands—its success is limited by issues such as inadequate internet infrastructure, low digital literacy, and the need for physical exams and procedures that cannot be conducted remotely. In particular, stakeholders emphasized that while telehealth might ease travel burdens for some patients, it does not eliminate the need for reliable in-person maternal health services and continued patient-provider interactions for procedures like prenatal check-ups.

Additionally, participants discussed the broader systemic and organizational barriers to implementing telehealth. These include inconsistent insurance coverage, limited funding for

remote monitoring tools, and fragmented health systems that resist collaboration due to concerns over data sharing, cybersecurity, and market competition. Participants overall found that these organizational silos and financial constraints create administrative burdens and delay access to care, particularly for vulnerable populations. Despite its promise, telehealth alone is not sufficient to resolve the full spectrum of healthcare access challenges and must be part of a more comprehensive strategy that includes workforce investment and infrastructure improvements.

Given these findings, the next section presents a set of policy options aimed at addressing the identified barriers and enabling more equitable and sustainable access to maternal and general healthcare services across Hawai‘i.

Policy Options

As previously discussed, RHRPC undertook a literature review (Part 1 of this series) and discussions with 40 stakeholders (Part 2 of this series) to gain insights on the challenges related to transportation and travel access on rural health in Hawai‘i, as well as to glean ideas for policy options. Additionally, our team leveraged past knowledge and experience, discussion with other stakeholders, news stories, and internal dialogue to develop further policy options to address identified challenges related to transportation and rural health in Hawai‘i. All of these policy options are provided below for consideration by policymakers and the public.

Policy Goal #1: Strengthening Maternal Telehealth Infrastructure in Hawai‘i

Background

The unique geography of Hawai‘i creates significant challenges and barriers to maternal healthcare access, particularly for those living in rural and neighbor island communities. Federally Qualified Health Centers (FQHCs) and rural clinics serve as critical healthcare access points for these populations, yet many of these clinics lack the necessary telehealth infrastructure to fully support maternal and fetal telemedicine services.

By expanding the state’s telehealth infrastructure through subsidies for telemedicine equipment in rural areas and the development of a mobile application, Hawai‘i can significantly improve healthcare access for expectant mothers. These changes could enhance prenatal and postpartum care, improve patient engagement, and reduce travel burdens, ultimately leading to better maternal and fetal health outcomes.

Policy Option #1: Subsidize Telemedicine Equipment for Rural Hospitals, FQHCs, and Rural Health Clinics (RHCs)

Hawai‘i’s rural geography makes it difficult for pregnant women to access specialized MF healthcare, often requiring expensive and time-consuming travel to O‘ahu or Maui.

Strengthening telehealth infrastructure by subsidizing telemedicine equipment for rural hospitals and clinics could expand local capacity for prenatal and postpartum care.

- **Policy Level:** State, Legislative and Programmatic
- **Implementation Framework:**
    - **Telemedicine Equipment Grant Program:**
        - The Hawai‘i State Legislature could appropriate funds for the Hawai‘i State Department of Health (HI DOH) to establish a grant program to provide rural hospitals, FQHCs, and RHCs with funding to purchase and staff telemedicine equipment, including:
            - High-resolution ultrasound machines with telehealth compatibility.
                - For this equipment, a Sonographer must be present on-location to complete the scan, the salary of which could be included in-part or in-full through the grant program.
            - Digital stethoscopes and remote fetal Doppler ultrasounds.
            - Secure video conferencing systems with HIPAA-compliant software.
            - Internet connectivity enhancements, such as Wi-Fi extenders and broadband expansion.
        - Grants could prioritize hospitals and clinics serving high-risk pregnant populations and those with limited access to in-person MF health specialists.
        - Grant awardees could be encouraged to utilize spaces operated by local colleges, universities, high schools and local libraries that already have access to high-speed internet/broadband to reduce costs and time of implementation.
    - **Provider Training and Technical Assistance:**
        - HI DOH could develop a statewide training initiative to educate healthcare providers on how to integrate telemedicine into maternal care services. Training could include critical services for maternal health, including contraction stress tests and operation of store-and-forward technology (which could be utilized for transmitting ultrasound images). A technical assistance team could also be established to provide ongoing support for telehealth implementation, troubleshooting, and best practices.
        - This initiative could be used as a pilot program to eventually roll out to other specialties such as oncology, cardiology, and chronic disease management.

Policy Option #2: Establish a Statewide Maternal Telehealth Network

Many RHCs and FQHCs lack the technology and staff necessary to provide high-quality telehealth services. Establishing a statewide maternal telehealth network could connect providers across the islands, facilitating virtual consultations with MF health specialists and improving access to expert care.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
    - **Telehealth Hub Development:**
        - The Hawai‘i State Legislature could appropriate funds to create and maintain a statewide Maternal Telehealth Network, with potential managing partners including the University of Hawai‘i’s John A. Burns School of Medicine (JABSOM), major hospital systems, and the Pacific Basin Telehealth Resource Center. The network could designate telehealth “hubs” at FQHCs, rural health clinics and hospitals to facilitate virtual MF health consultations and implement statewide data tracking. This could be utilized to assess telehealth usage, patient outcomes, and provider/patient satisfaction as well as establish performance goals and metrics for telehealth services to encourage high-quality maternal telehealth care.
        - The network could leverage successful models such as The Antenatal and Neonatal Guidelines, Education and Learning System (ANGELS) system created by the University of Arkansas for Medical Sciences (UAMS).[59] ANGELS is a telemedicine-based program designed to support high-risk pregnancies. It provides real-time consultations between local physicians and maternal-fetal medicine specialists, real-time ultrasound readings, and a 24-hour call center for pregnancy-related concerns. This program has improved access to specialty perinatal care, reduced complications, and generated cost savings for the state Medicaid program.[60]

Policy Option #3: Leverage Libraries as Telehealth Access Points (TAPs)

Many rural and underserved communities in Hawai‘i lack access to private, high-speed internet environments necessary for reliable telehealth visits. Expanding the use of public libraries as designated Telehealth Access Points (TAPs) would provide secure, internet-enabled spaces where pregnant patients can attend virtual maternal health appointments.

- **Policy Level:** State and Local, Programmatic
- **Implementation Framework:**

[59] University of Arkansas for Medical Sciences. “ANGELS.” Institute for Digital Health & Innovation. Accessed May 19, 2025. https://idhi.uams.edu/programs/angels-2/

[60] University of Arkansas for Medical Sciences. “ANGELS.” Institute for Digital Health & Innovation. Accessed May 19, 2025. https://idhi.uams.edu/programs/angels-2/

    - Hawai‘i’s statewide library system could be further integrated into the maternal telehealth infrastructure through formal partnerships with healthcare providers and the proposed Maternal Telehealth Network. The Pacific Basin Telehealth Resource Center (PBTRC) has piloted TAPS in libraries,[61] which offer private rooms, high-speed internet, and basic equipment for conducting virtual visits.
        - The Hawai‘i State Legislature could appropriate funds to expand this program by designating more public libraries—particularly in rural and underserved areas—as certified TAPs.
        - Libraries could receive funding to upgrade internet bandwidth, install HIPAA-compliant video systems, and train library staff on basic telehealth support.
        - Expectant mothers could be referred to TAPs by their OB/GYNs or FQHCs when home internet or privacy is lacking.

Policy Option #4: Utilize Community Health Workers (CHWs) as Telehealth Navigators

Digital literacy barriers and unfamiliarity with telehealth platforms prevent many expectant mothers from effectively using remote care services. Training and deploying Community Health Workers (CHWs) to assist with telehealth setup, navigation, and follow-up can ensure pregnant patients are supported throughout their virtual care journey.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
    - The Hawai‘i State Legislature could appropriate funds to train and deploy CHWs as telehealth navigators to bridge gaps in digital access and patient education. CHWs could assist pregnant patients with setting up telehealth accounts, troubleshooting devices, and understanding clinical instructions during virtual prenatal/postpartum visits.
        - Funding could support CHW stipends, technology kits (e.g., tablets or hotspots), and culturally appropriate training programs developed in collaboration with PBTRC or UH JABSOM, such as through training already deployed by the Hawaii/Pacific Basin Area Health Education Center (AHEC).
        - These services could be embedded within existing FQHCs, CBOs, or WIC clinics to improve maternal telehealth engagement and follow-up.

[61] Pacific Basin Telehealth Resource Center. “Telehealth Opportunities in a Library Near You.” PBTRC. Accessed May 19, 2025. https://www.pbtrc.org/telehealth-opportunities-in-a-library-near-you/.

Policy Goal #2: Strengthen Remote Monitoring for High-Risk Pregnancies

Background

High-risk pregnancies, including those involving gestational diabetes, hypertension, or preterm labor risks, require frequent monitoring and specialist care. For patients living in rural areas, access to MF health specialists is often limited, leading to delayed interventions and increased complications. Remote monitoring solutions, such as wearable devices and home-based diagnostic tools, can enhance prenatal care and improve maternal and fetal health outcomes.

Policy Option #1: Expand Medicaid Coverage for Remote Maternal Health Monitoring

Patients in rural areas often struggle to receive timely prenatal and postpartum care due to geographic and financial barriers. Expanding telehealth services for maternal healthcare could provide more flexible care options, reducing travel burdens while ensuring consistent monitoring and medical support.

- **Policy Level:** State and Federal, Legislative
- **Implementation Framework:**
    - **Coverage Expansion:**
        - The Hawai‘i State Department of Human Services (DHS) Med-QUEST Division could expand Medicaid coverage to include the costs of remote maternal health monitoring devices, such as blood pressure cuffs, glucose monitors, and fetal dopplers for high-risk pregnancies. The DHS Medicaid Division could allow providers to bill Medicaid for virtual check-ins that assess real-time patient data.
        - Any such changes would require Med-QUEST to include such changes in a Section 1115 waiver submission to the Center for Medicare and Medicaid Services (CMS).
    - **Provider Integration:**
        - The DHS Medicaid Division could also establish partnerships between hospitals, community clinics, and telehealth platforms to ensure seamless data sharing and provider coordination. It could also offer provider training on interpreting remote monitoring data and responding to alerts.

Policy Option #2: Enact the CONNECT for Health Act or Similar Federal Legislation

Federal public insurance continues to unfortunately limit telehealth reimbursement, particularly for Medicare beneficiaries and rural patients, undermining the sustainability of virtual maternal health services. For example, Medicare’s statutory restrictions on telehealth include originating site restrictions, eligible providers, audio-only telehealth, and in-person visit requirements. Supporting national legislative efforts like the CONNECT for Health Act could

help remove these restrictions and ensure permanent reimbursement pathways for telehealth, including maternal care.

- **Policy Level:** Federal, Legislative
- **Implementation Framework:**
    - The U.S Congress could pass the bipartisan **CONNECT for Health Act (S. 1261)**—led by U.S. Senator Brian Schatz and U.S. Senator Roger Wicker with 62 Senate cosponsors—which aims to permanently lift geographic and originating site restrictions on telehealth reimbursement under Medicare. This legislation could expand remote patient monitoring reimbursements and ease the financial sustainability of telehealth maternity services for older and disabled women of reproductive age covered by Medicare. Stakeholders in Hawaii could endorse the bill to lend further support.

Policy Option #3: Expand the Maternal Health Workforce in Underserved Areas

- **Policy Level:** State and Federal, Legislative and Programmatic
- **Implementation Framework:**
    - The chronic shortage of OB/GYNs, MF medicine specialists, and sonographers in rural Hawai‘i necessitates targeted workforce expansion policies for both in-person and telehealth-accessible care.
    - The state could offer loan repayment, signing bonuses, or housing subsidies to attract maternal health professionals to underserved areas.
    - Partnerships with UH JABSOM and allied health programs could be expanded to increase training slots for sonographers, NPs, PAs, and MF medicine specialists, with rural clinical placements required.
    - A rural residency track for OB/GYNs could be piloted to encourage long-term practice on neighbor islands.

Policy Goal #3: Address Digital Equity in Maternal Telehealth

Background

Digital inequities, such as limited broadband access and low digital literacy, prevent many pregnant women in Hawai‘i from fully benefiting from telehealth services. Without reliable internet connections, smartphones, or computer access, underserved populations face barriers to remote maternal healthcare. Addressing these disparities could ensure that all expectant mothers have equitable access to telehealth resources.

Policy Option #1: Expand Broadband Infrastructure in Rural and Underserved Areas

Limited broadband access and digital literacy gaps prevent many pregnant women from fully utilizing telehealth services for maternal healthcare. Investing in broadband infrastructure expansion, providing telehealth-compatible devices, and implementing community-based digital literacy training programs could ensure more equitable access to remote maternal care.

- **Policy Level:** State and Federal, Legislative and Programmatic
- **Implementation Framework:**
    - **Infrastructure Investments:**
        - The Broadband Hui, currently convened jointly by Hawai‘i County and the Wai‘anae Coast Comprehensive Health Center,[62] could partner with relevant stakeholders such as PBRTRC and members of the proposed Maternal Telehealth Network (see above) to utilize federal funding such as the Broadband Equity, Access, and Deployment program[63] or the Veterans' Affairs Telehealth Grant Program[64] to expand high-speed internet access in medically underserved areas. They could also support efforts to establish Wi-Fi hotspots at community health centers, libraries, and public housing complexes to facilitate telehealth visits.
            - Such efforts have already begun, such as the creation of TAPs by PBTRC and the Hawai‘i State Public Library System.[65]
        - The Maternal Telehealth Network could work to expand subsidies for low-income households to obtain discounted broadband services and telehealth-compatible devices, and to support the development of an initiative providing tablets or mobile devices to Medicaid-enrolled pregnant women.

Policy Option #2: Improve Digital Literacy for Maternal Health Patients

Many pregnant women, particularly in underserved communities, struggle with navigating telehealth resources. Developing maternal telehealth resources and establishing centralized coordination hubs at FQHCs and RHCs could streamline access to virtual prenatal and postpartum care.

- **Policy Level:** State, Programmatic

[62] Broadband Hui. Broadband Hui: Advancing Digital Equity in Hawai‘i. 2025. https://www.broadbandhui.org/.
[63] National Telecommunications and Information Administration. "Broadband Equity Access and Deployment (BEAD) Program." BroadbandUSA. https://broadbandusa.ntia.doc.gov/funding-programs/broadband-equity-access-and-deployment-bead-program.
[64] Department of Veterans Affairs. "Telehealth Grant Program." Federal Register 89, no. 219 (November 13, 2024): 89519–89543. https://www.federalregister.gov/documents/2024/11/13/2024-25892/telehealth-grant-program.
[65] Pacific Basin Telehealth Resource Center. “Telehealth Opportunities in a Library Near You.” 2025. https://www.pbtrc.org/telehealth-opportunities-in-a-library-near-you/](https://www.pbtrc.org/telehealth-opportunities-in-a-library-near-you/.

- **Implementation Framework:**
    - **Community-Based Training Programs:**
        - CBOs could partner with public health programs, community centers, and other organizations to offer digital literacy workshops tailored to maternal health needs. The workshops could provide step-by-step guides on using telehealth platforms, ensuring cultural competency in training materials. They could also work to help support OB/GYN offices and clinics in hiring patient navigators to assist individuals in setting up telehealth accounts and troubleshooting connectivity issues. Additionally, CBOs and their partners could help develop multilingual educational resources addressing common telehealth barriers for non-English-speaking patients.
        - These programs should prioritize leveraging existing community infrastructure for health access, as well as exploring new partnerships and funding.

Policy Option #3: Launch an Education and Continuing Medical Education (CME) Campaign for Assisting Providers

Healthcare professionals such as NPs and PAs are essential for facilitating hybrid telehealth visits, but often lack specific training in maternal health technologies and workflows. A targeted education and Continuing Medical Education (CME) campaign could equip these providers with the necessary skills to support remote prenatal care and strengthen telehealth delivery across the islands.

- **Policy Level:** State, Programmatic
- **Implementation Framework:** To effectively support hybrid maternal telehealth services, it is essential to define and train healthcare professionals such as NPs and PAs who help conduct telehealth-linked exams on-site.
    - HI DOH, in collaboration with the Maternal Telehealth Network, could create a CME curriculum for these providers on best practices for remote maternal health care.
    - Training topics could include the use of digital diagnostic tools (e.g., fetal Doppler ultrasounds, connected ultrasound), patient coaching during virtual visits, and managing hybrid care workflows.
    - Certification could qualify clinics for participation in telehealth incentive programs or Medicaid bonus payments for maternal care coordination.

Conclusion

Telehealth solutions can play an important role for expectant mothers and their babies in overcoming geographical and infrastructural barriers. The expansion of telehealth services—accelerated by the COVID-19 pandemic—has provided significant benefits, including reduced travel burdens and improved access to specialist care for rural and neighbor island populations. However, challenges such as limited broadband access, inconsistent technology adoption, and challenges with insurance coverage continue to hinder the full realization of telehealth's potential.

Qualitative insights from stakeholders reveal that while telehealth is a promising solution to address transportation challenges, its effective integration into maternal healthcare requires a multifaceted approach. Specific challenges included navigating telehealth resources, limited insurance coverage for certain services, and lacking telemedicine infrastructure at rural hospitals and clinics.

Policy options to improve the availability of telehealth for MF care emphasize the need for increased funding, targeted infrastructure improvements, and enhanced digital literacy. Such policy options include establishing a Maternal Telehealth Network, expanding insurance coverage for maternal telehealth services, and improving digital literacy for pregnant women.

A coordinated strategy that combines technological investments with supportive policies and community engagement is essential for improving maternal health outcomes in Hawai‘i. Continued research and adaptive policymaking will be crucial in sustaining the benefits of telehealth and ensuring that all populations—especially the most vulnerable—receive the highest possible quality of care. By addressing these issues, Hawai‘i can move toward a more resilient and accessible healthcare system that not only reduces maternal and infant mortality but also sets a precedent for other regions facing similar challenges.